

**PROBABLE VIOLATION 1:  
Tank 190 Vent Fire**

**PHMSA POSITION**

**Pertinent Regulations:**

49 CFR §195.52(a) Telephonic notice of certain accidents. At the earliest practicable moment following discovery of a release of the hazardous liquid or carbon dioxide transported resulting in an event described in §195.50, the operator of the system shall give notice, in accordance with paragraph (b) of this section, of any failure that:

- (2) Resulted in either a fire or explosion not intentionally set by the operator.
- (b) Reports made under paragraph (a) of this section are made by telephone to 800-424-8802 (in Washington, DC 267-2675) and must include the following information:
  - (1) Name and address of the operator.
  - (2) Name and telephone number of the reporter.
  - (3) The location of the failure.
  - (4) The time of the failure.
  - (5) The fatalities and personal injuries, if any.
  - (6) All other significant facts known by the operator that are relevant to the cause of the failure or extent of the damages.

49 CFR §195.50 Reporting accidents.

An accident report is required for each failure in a pipeline system subject to this part in which there is a release of the hazardous liquid or carbon dioxide transported resulting in any of the following:

- (a) Explosion or fire not intentionally set by the operator.

**Findings:**

Alyeska failed to report a January 6, 2007 reportable incident by telephonic notice to the National Response Center, as required by §195.52. On that date, crude oil vapors were released from a valve on the top of Tank 190 at PS9 during a relief event. The escaping vapors were ignited by a portable heater nearby, and a fire ensued. The fire scorched the vacuum/pressure valve on the top of Tank 190. This accident qualifies as reportable under §195.50 because a failure of the pipeline system resulted in the release of crude oil vapors and a subsequent fire.

**Proposed Civil Penalty:**

Regarding Item 1, the Compliance Officer has reviewed the circumstances and supporting documentation involved in the probable violation(s) and has recommended that Alyeska be preliminarily assessed a civil penalty in the amount of \$11,000.00.

**Proposed Compliance Order:**

In regard to Item Number 1 of the Notice pertaining to Alyeska's failure to report by telephonic notice the January 6, 2007 incident in which hazardous crude vapors were ignited by one or more ignition sources causing a fire within the break out area of Tank 190 at PS9 on TAPS, Alyeska shall modify its procedures for compliance with §§195.50 and §195.52 to include releases of hydrocarbon vapors that result in any event described in §§195.50 and §195.52. Within sixty (60) days of receipt of the Final Order Alyeska shall modify and submit these procedures to the Director, Western Region.

**ALYESKA PIPELINE SERVICE COMPANY'S RESPONSE**

**Summary:**

Alyeska Pipeline Service Company (Alyeska) respectfully disagrees with PHMSA's finding that Alyeska failed to report an incident covered by §195.50 and §195.52. Alyeska requests that the finding and the proposed compliance order be withdrawn, and PHMSA withdraw the proposed civil penalty.

**Discussion:**

Alyeska reported the January 6, 2007 Tank 190 vent fire through Alyeska's normal processes which included OCC faxing the Event Notification form 2124 to the Anchorage DOT office. The same notification was faxed to Denver, the Western Region office; however the phone number was incorrect, resulting in failure of the redundant notification. (See Exhibit 1). January 6, 2007 fell on a Saturday. The DOT inspectors received the fax when they arrived at the office on Monday, January 8, 2007.

Both §195.52 and §195.50 require reporting of accidents that result from a release of hazardous liquid. Alyeska was not required to report the vent fire to the National Response Center (NRC) under §195.52 because there was not a release of the hazardous liquid transported by the company. Hazardous liquid is defined in §195.2, Definitions, as petroleum, petroleum products, or anhydrous ammonia. Alyeska transports petroleum, specifically, crude oil. In §195.2, petroleum is defined as crude oil, condensate, natural gasoline, natural gas liquids, and liquefied petroleum gas. Petroleum products are defined in §195.2 as flammable, toxic, or corrosive products obtained from distilling and processing of crude oil, unfinished oils, natural gas liquids, blend stocks and other miscellaneous hydrocarbon compounds. Alyeska does not transport any products that have been distilled or processed.

The cause of the vent fire at Pump Station 9 was the release of flammable vapors. Nowhere in the definitions provided in Part 195 is vapor, or flammable vapor, defined. Vapor is not included in the definitions of hazardous liquid, petroleum, or petroleum product.

In other sections of Part 195, PHMSA uses the terms "flammable hazardous liquid" and "flammable vapors" to identify two distinct and different physical states. See §195.438. In the reporting requirements, §195.50 and §195.52, PHMSA requires specific reporting for the release of hazardous liquid. Neither of these regulations uses the terms "flammable vapors" or "vapors" in these reporting regulations. Clearly, PHMSA understands the difference between hazardous liquid and vapors, and uses these terms accordingly to create the compliance coverage applicable for each circumstance. As there was no release of hazardous liquid on January 6, 2007, Alyeska was not required to report the vent fire to the NRC.

Alyeska understands that if there were a release of hazardous liquid accompanied by a release of flammable vapors, which resulted in one of the specific accidents listed in §195.52, reporting to NRC would be required. However, the facts of the January 6, 2007 vent fire do not include a release of hazardous liquid.

Therefore, with regard to Finding 1, Alyeska respectfully requests that the finding and proposed compliance order be withdrawn. With regard to the proposed civil penalty, Alyeska requests that PHMSA withdraw the proposed civil penalty.

#### **SUPPORTING DOCUMENTATION**

Exhibit 1 - Form 2124, Event Notification, dated January 6, 2007



**Event Notification**

This form to be completed and sent by OCC only.

- Anticipated                       Follow-up (Update)  
 Initial Unscheduled             Drill (If a Drill Write Boldly Across the Form "This is a Drill")

(Use for Drills Also)

1.

|  |   |   |
|--|---|---|
| <input checked="" type="checkbox"/> a. Fire, Stipulation 1.17.1                          | <input type="checkbox"/> d. High inventory and tanker suspension                            | <input type="checkbox"/> g. Other: _____      |
| <input type="checkbox"/> b. Serious Accidents, Stipulation 1.20.1                        | <input type="checkbox"/> e. Unscheduled Slow Down<br>(≥ 20% Reduction at Pump Station 1)    | <input type="checkbox"/> h. Security          |
| <input type="checkbox"/> c. Threats to Pipeline Integrity (See Back), Stipulation 1.21.1 | <input checked="" type="checkbox"/> f. Unscheduled Shut Down<br>(No Mainline Pumps Running) | <input type="checkbox"/> i. Bomb Threat       |
|  |   | <input type="checkbox"/> j. Spill > 55 Gallon |

**Note:** Any Reportable Release Under the State Spill Reporting Requirement Summary, Including Third Party Spills Which Alyeska Responds to, Must Be Reported Via the Alyeska Spill Reporting System.

|                                       |                             |                                |
|---------------------------------------|-----------------------------|--------------------------------|
| 2. Report Number (YYMMDD##)<br>070106 | 3. Sent By<br>Monte Geerdes | 4. Time Sent:<br>18:45 1/06/07 |
|---------------------------------------|-----------------------------|--------------------------------|

|   |  |  |
|---|--|--|
| 5. Fax To:<br><b>APSC:</b><br>787-8586 Law Dept.<br>450-5415 Senior Vice President<br>787-8337 Lands & Permits<br>787-8240 Corporate Communication<br>834-6962 SERVS Duty Officer<br>(202) 466-3886 DC Office<br>834-7588 VDZ Manager<br>450-5787 Pipeline Mgr.<br>787-8778 TAPS Scheduler & Measurement<br>450-5787 FBU Ops Adv. (Wk)<br>834-7585 VDZ Corp. Comm.<br>463-4660 Juneau Gov. Relations<br>834-7589 PV/OMS ATL<br>X8330 ANC Environment<br>X6086 VDZ Maint<br>450-7800 FBU DOT Reg. Spec.<br>X8924 Asst. to the President<br>X5614 PMT | <b>JPO:</b><br>272-0690 JPO Main Office<br>834-6712 JPO Valdez Office<br>459-5891 JPO Fairbanks Office<br>257-1397 JPO/PIO (Office)<br>696-4338 JPO/PIO (Hm)<br>694-1871 Authorized Officer (Hm)<br>696-2421 Deputy Authorized Officer (Hm)<br>835-2429 VDZ DEC<br>303-670-3157 DOT/OPS Western Region<br>271-6581 US DOT Office<br>694-5080 US DOT Home | APSC Field (See List)<br>Carrier (See List)<br>Producers (See List)<br>Refineries (See List)<br>Other: _____ |
|---|--|--|

6. Phone to: (Note Instructions On Reverse)  
Nolan Heath 16:30 & Mike Thompson 16:40

|                                      |  |
|--------------------------------------|--|
| 7. Event Location:<br>Pump Station 9 | 8. Event Date and Time:<br>1/06/07 15:06 |
|--------------------------------------|--|

**9. Event Description (Attach Additional Pages if Needed)**

Who, What, Why:  
During SIPPS testing at Valdez, an incorrectly mapped mainline valve status was changed, which initiated Auto Controls in Segment 10.

15:06 Pump Station 9 went to a Block Line condition and Segment 10 & 11 RGVs started closing as a result of the Auto Controls.  
15:06 Expelled vapors from relief tank 190 were ignited by a Tioga Heater located within the tank dike area.

**10. Action Taken (Attach Additional Pages if Needed)**

15:09 OCC sent an elevated suction relief setpoint to PS-9 in an attempt to slow down relief crude oil volume to Tank 190  
15:10 OCC sent an Isolate Station command to PS-9 -- Isolate Station completed at 15:14  
15:11 PS-9 suction relief valves closed - open flame outside of Tank 190 self extinguished due to lack of expelled vapors  
15:11 OCC shut down running pumps at all Pump Stations -- Line Shut Down  
16:52 Pipeline restarted after Tank 190 inspection and removal of Tioga Heater from tank dike area  
\*\*\* no impact to North Slope Producers for this incident

The information provided above is preliminary and, as a result, may contain inaccuracies. It is intended to be informational and may or may not be provided pursuant to any reporting requirement. The information is not an admission, nor should it be considered as an admission, of a violation or breach by Alyeska Pipeline Service Company or its Owners of any Provision of Law, the Federal Grant or ROW Lease, or the State ROW Lease.

**For Receiving Office Use**

|                  |                  |       |
|------------------|------------------|-------|
| 11. Received By: | Date:            | Time: |
| 12. Routing:     | 13. Assigned To: |       |
| Follow-up:       |                  |       |

- [\*083]17136560931
- [\*088]8347585
- [\*090]19077878330
- [\*095]17136565402
- [\*098]19076941871
- [\*105]19074505787
- [\*119]19258428870
- [\*121]19072733333
- [\*122]12107454565
- [\*123]19186625457
- [\*127]19186604395
- [ 04]8355357
- [ 05]8352093
- [ 06]19076595917
- [ 07]19076594436
- [ 08]19076596782
- [ 09]19076597277
- [ 10]19076595122
- [ 12]8357286
- [ 15]8352429
- [ 18]19077878778
- [ 27]19076703674
- [ 29]19076704234
- [ 34]19074885154
- [ 35]19074883655
- [ 36]8355124

- EXXONMOBIL
- VBU CORP.AFFAIRS
- ANC ENVIRONMENT
- EXXON OMR
- JPO/J.BROSSIA
- P/L MGR.
- YOUNG-CHEVRON
- DUNLAP-WILLIAMS
- DOWNS-TESORO
- WALKER-PHILLIPS
- CASSADAY-BP N AM
- ALAMAR
- CALEB BRETT
- PHILLIPS
- BPX
- ENDICOTT
- KUPARUK
- LISBURNE
- USCG
- ADEC VDZ
- ANC OM
- NORTH STAR
- ALPINE
- WMS N. POLE
- PETRO STAR NP
- PETRO STAR VDZ

ERROR INFORMATION



**Event Notification**

This form to be completed and sent by OCC only.

- Anticipated
- Follow-up (Update)
- Initial Unscheduled
- Drill (If a Drill Write Boldly Across the Form "This is a Drill")

(Use for Drills Also)

1.

|  |   |   |
|--|---|---|
| <input checked="" type="checkbox"/> a. Fire, Stipulation 1.17.1                          | <input type="checkbox"/> d. High inventory and tanker suspension                            | <input type="checkbox"/> g. Other: _____      |
| <input type="checkbox"/> b. Serious Accidents, Stipulation 1.20.1                        | <input type="checkbox"/> e. Unscheduled Slow Down<br>(≥ 20% Reduction at Pump Station 1)    | <input type="checkbox"/> h. Security          |
| <input type="checkbox"/> c. Threats to Pipeline Integrity (See Back), Stipulation 1.21.1 | <input checked="" type="checkbox"/> f. Unscheduled Shut Down<br>(No Mainline Pumps Running) | <input type="checkbox"/> i. Bomb Threat       |
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| 5. Fax To:<br><b>APSC:</b><br>787-8586 Law Dept.<br>450-5415 Senior Vice President<br>787-8337 Lands & Permits<br>787-8240 Corporate Communication<br>834-6962 SERVS Duty Officer<br>(202) 466-3886 DC Office<br>834-7588 VDZ Manager<br>450-5787 Pipeline Mgr.<br>787-8778 TAPS Scheduler & Measurement<br>450-5787 FBU Ops Adv. (Wk)<br>834-7585 VDZ Corp. Comm.<br>463-4680 Juneau Gov. Relations<br>834-7589 PV/OMS ATL<br>X8330 ANC Environment<br>X6086 VDZ Maint<br>450-7800 FBU DOT Reg. Spec.<br>X8924 Asst. to the President<br>X5614 PMT | <b>JPO:</b><br>272-0690 JPO Main Office<br>834-6712 JPO Valdez Office<br>459-5891 JPO Fairbanks Office<br>257-1397 JPO/PIO (Office)<br>696-4338 JPO/PIO (Hm)<br>694-1871 Authorized Officer (Hm)<br>696-2421 Deputy Authorized Officer (Hm)<br>835-2429 VDZ DEC<br>303-670-3157 DOT/OPS Western Region<br>271-6581 US DOT Office<br>694-5080 US DOT Home | APSC Field (See List)<br>Carrier (See List)<br>Producers (See List)<br>Refineries (See List)<br>Other: _____ |

6. Phone to: (Note Instructions On Reverse)  
Nolan Heath 16:30 & Mike Thompson 16:40

|                                      |   |  |
|--------------------------------------|---|--|
| 7. Event Location:<br>Pump Station 9 | Alyeska Pipeline Service Company<br>CPF No. 5-2007-5041 | 8. Event Date and Time:<br>1/06/07 15:06 |
|--------------------------------------|---|--|

\*\*\*\*\*  
\*\*\* MULTI TX/RX REPORT \*\*\*  
\*\*\*\*\*

|                  |                   |                   |
|------------------|-------------------|-------------------|
| TX/RX NO         | 2320              |                   |
| PGS.             | 1                 |                   |
| TX/RX INCOMPLETE | [*003]19075645570 | BP PLAK           |
|                  | [*052]19077875284 | PS 12 CONTROL RM  |
|                  | [*062]19076945080 | US DOT HOME       |
|                  | [*067]19074634660 | J. RICHARDS/GovRe |
|                  | [*071]8346294     | BWT               |
|                  | [*074]19074505415 | O@M SR VP         |
|                  | [*084]12146582833 | WILLIAMS          |
|                  | [*086]17145772774 | UNION             |
|                  | [*097]8346086     | MAINTENANCE       |
|                  | [*117]15625904662 | BROWN-PHILLIPS    |
|                  | [*120]17137585222 | POLLARD-EXXON     |
|                  | [*124]13036703157 | DOT/OPS WEST REG  |
|                  | [*126]12102832031 | VALADEZ-TESORO    |
| TRANSACTION OK   | [*001]8346962     | SERVS BASE        |
|                  | [*002]8355372     | PILOT OFFICE      |
|                  | [*005]8352258     | CROWLEY           |
|                  | [*009]19077878924 | APSC CEO/COO      |
|                  | [*010]19077878337 | LAND@PERMITS      |
|                  | [*011]8347588     | VMT MGR           |
|                  | [*012]17136569586 | EXXON- C. HATLEY  |
|                  | [*013]19076962421 | US DOT OPS        |
|                  | [*017]19072571397 | JPO PIO OFFICE    |
|                  | [*018]8353701     | SR LOAD MATE      |
|                  | [*020]19074586370 | GVEA              |
|                  | [*025]19076597198 | KUP PL COORD      |
|                  | [*026]19076597314 | KUP. OFFTAKE      |
|                  | [*028]19186625440 | PTA 1             |
|                  | [*035]19074505959 | JPO FBKS          |
|                  | [*036]19076964338 | JPO/PIO HOME      |
|                  | [*040]19077874175 | PS 1 CONTROL RM   |
|                  | [*043]19077874377 | PS 3 CONTROL RM   |
|                  | [*044]19077874494 | PS 4 CONTROL RM   |
|                  | [*045]19077874561 | PS 5 CONTROL RM   |
|                  | [*046]19077874614 | PS 6 CONTROL RM   |
|                  | [*047]19077874759 | PS7 CONTROL/#1    |
|                  | [*049]19077874989 | PS 9 CONTROL RM   |
|                  | [*051]19072720690 | JPO MAIN OFFICE   |
|                  | [*053]8352429     | VDZ DEC           |
|                  | [*056]12024663886 | W. HENSLEY WA DC  |
|                  | [*059]19074507800 | FBU DOT REG SPEC  |
|                  | [*060]19076594409 | WOA PROD OPT      |
|                  | [*061]19072716581 | US DOT OFFICE     |
|                  | [*064]19077878586 | ANCH LAW DEPT     |
|                  | [*065]19077878240 | CORP AFFAIRS      |
|                  | [*066]8346238     | SECURITY          |
|                  | [*070]8346362     | POWERHOUSE        |
|                  | [*072]8346654     | MARINE            |
|                  | [*075]8346712     | JPO-AIRPORT       |
|                  | [*076]8347589     | PV/OMS MANAGER    |
|                  | [*077]19074504831 | NPMS              |
|                  | [*078]19074505614 | PMT OFFICE        |
|                  | [*080]17136094923 | AMERADA HESS      |
|                  | [*081]8346453     | OM@S              |

|             |                                |      |        |     |   |    |       |
|-------------|--------------------------------|------|--------|-----|---|----|-------|
| 01/06 21:14 | NPMS<br>19074504831            | 2320 | B'CAST | ECM | 1 | OK | 00'44 |
| 01/06 21:15 | PMT OFFICE<br>19074505614      | 2320 | B'CAST | ECM | 1 | OK | 00'39 |
| 01/06 21:16 | AMERADA HESS<br>17136094923    | 2320 | B'CAST | ECM | 1 | OK | 00'39 |
| 01/06 21:17 | OM@S<br>8346453                | 2320 | B'CAST | ECM | 1 | OK | 00'25 |
| 01/06 21:18 | EXXONMOBIL<br>17136560931      | 2320 | B'CAST | ECM | 1 | OK | 00'46 |
| 01/06 21:22 | VBU CORP.AFFAIRS<br>8347585    | 2320 | B'CAST | ECM | 1 | OK | 00'32 |
| 01/06 21:23 | ANC ENVIRONMENT<br>19077878330 | 2320 | B'CAST | ECM | 1 | OK | 00'30 |
| 01/06 21:24 | EXXON OMR<br>17136565402       | 2320 | B'CAST | ECM | 1 | OK | 01'35 |
| 01/06 21:28 | JPO/J.BROSSIA<br>19076941871   | 2320 | B'CAST | ECM | 1 | OK | 00'58 |
| 01/06 21:29 | P/L MGR.<br>19074505787        | 2320 | B'CAST | ECM | 1 | OK | 00'30 |
| 01/06 21:31 | YOUNG-CHEVRON<br>19258428870   | 2320 | B'CAST | ECM | 1 | OK | 00'30 |
| 01/06 21:34 | DUNLAP-WILLIAMS<br>19072733333 | 2320 | B'CAST | ECM | 1 | OK | 00'45 |
| 01/06 21:35 | DOWNES-TESORO<br>12107454565   | 2320 | B'CAST | ECM | 1 | OK | 00'46 |

\*\*\*\*\*  
 \*\*\* ACTIVITY REPORT \*\*\*  
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| ST. TIME    | CONNECTION TEL/ID               | SENDER NAME | NO.  | MODE           | PGS. | RESULT             |
|-------------|---------------------------------|-------------|------|----------------|------|--------------------|
| 01/06 20:28 | KUP. OFFTAKE<br>19076597314     |             | 2320 | B' CAST<br>ECM | 1    | OK 00'44           |
| 01/06 20:30 | PTA 1<br>19186625440            |             | 2320 | B' CAST<br>ECM | 1    | OK 00'45           |
| 01/06 20:31 | JPO FBKS<br>19074505959         |             | 2320 | B' CAST<br>ECM | 1    | OK 00'31           |
| 01/06 20:32 | JPO/PIO HOME<br>19076964338     |             | 2320 | B' CAST<br>ECM | 1    | OK 00'46           |
| 01/06 20:33 | PS 1 CONTROL RM<br>19077874175  |             | 2320 | B' CAST<br>ECM | 1    | OK 00'39           |
| 01/06 20:34 | PS 3 CONTROL RM<br>19077874377  |             | 2320 | B' CAST<br>ECM | 1    | OK 00'46           |
| 01/06 20:36 | PS 4 CONTROL RM<br>19077874494  |             | 2320 | B' CAST<br>ECM | 1    | OK 00'39           |
| 01/06 20:37 | PS 5 CONTROL RM<br>19077874561  |             | 2320 | B' CAST<br>ECM | 1    | OK 00'41           |
| 01/06 20:38 | PS 6 CONTROL RM<br>19077874614  |             | 2320 | B' CAST<br>ECM | 1    | OK 00'39           |
| 01/06 20:39 | PS7 CONTROL/#1<br>19077874759   |             | 2320 | B' CAST<br>ECM | 1    | OK 00'30           |
| 01/06 20:40 | PS 9 CONTROL RM<br>19077874989  |             | 2320 | B' CAST<br>ECM | 1    | OK 00'30           |
| 01/06 20:41 | JPO MAIN OFFICE<br>19072720690  |             | 2320 | B' CAST<br>G3  | 1    | OK 01'00           |
| 01/06 20:44 | VDZ DEC<br>8352429              |             | 2320 | B' CAST<br>ECM | 1    | OK 00'31           |
| 01/06 20:45 | W.HENSLEY WA DC<br>12024663886  |             | 2320 | B' CAST<br>ECM | 1    | OK 00'45           |
| 01/06 20:46 | FBU DOT REG SPEC<br>19074507800 |             | 2320 | B' CAST<br>ECM | 1    | OK 00'52           |
| 01/06 20:48 | WOA PROD OPT<br>19076594409     |             | 2320 | B' CAST<br>ECM | 1    | OK 00'46           |
| 01/06 20:49 | US DOT OFFICE<br>19072716581    |             | 2320 | B' CAST<br>ECM | 1    | OK 00'45           |
| 01/06 20:51 | ANCH LAW DEPT<br>19077878586    |             | 2320 | B' CAST<br>ECM | 1    | OK 00'30           |
| 01/06 20:52 | CORP AFFAIRS<br>19077878240     |             | 2320 | B' CAST<br>ECM | 1    | OK 00'31           |
| 01/06 20:53 | SECURITY<br>8346238             |             | 2320 | B' CAST<br>ECM | 1    | OK 00'38           |
| 01/06 21:02 | BP PLAK<br>19075645570          |             | 2320 | B' CAST        | 0    | NG 00'00<br>0 #018 |
| 01/06 21:03 | PS 12 CONTROL RM<br>19077875284 |             | 2320 | B' CAST        | 0    | NG 00'00<br>0 #018 |
| 01/06 21:05 | US DOT HOME<br>19076945080      |             | 2320 | B' CAST        | 0    | NG 00'00<br>0 #018 |
| 01/06 21:07 | POWERHOUSE<br>8346362           |             | 2320 | B' CAST<br>ECM | 1    | OK 00'44           |
| 01/06 21:10 | MARINE<br>8346654               |             | 2320 | B CAST<br>ECM  | 1    | OK 00'30           |
| 01/06 21:12 | JPO-AIRPORT<br>8346712          |             | 2320 | B CAST<br>ECM  | 1    | OK 00'39           |
| 01/06 21:13 | PV/OMS MANAGER<br>8347589       |             | 2320 | B' CAST<br>ECM | 1    | OK 00'25           |

|             |                                |      |        |     |   |    |       |
|-------------|--------------------------------|------|--------|-----|---|----|-------|
| 01/06 20:14 | PILOT OFFICE<br>8355372        | 2320 | B'CAST | ECM | 1 | OK | 00'39 |
| 01/06 20:17 | CROWLEY<br>8352258             | 2320 | B'CAST | ECM | 1 | OK | 00'45 |
| 01/06 20:18 | APSC CEO/COO<br>19077878924    | 2320 | B'CAST | ECM | 1 | OK | 00'39 |
| 01/06 20:19 | LAND@PERMITS<br>19077878337    | 2320 | B'CAST | ECM | 1 | OK | 00'40 |
| 01/06 20:20 | VMT MGR<br>8347588             | 2320 | B'CAST | ECM | 1 | OK | 00'38 |
| 01/06 20:21 | EXXON- C.HATLEY<br>17136569586 | 2320 | B'CAST | ECM | 1 | OK | 00'39 |
| 01/06 20:22 | US DOT OPS<br>19076962421      | 2320 | B'CAST | ECM | 1 | OK | 00'57 |
| 01/06 20:24 | JPO PIO OFFICE<br>19072571397  | 2320 | B'CAST | ECM | 1 | OK | 00'30 |
| 01/06 20:25 | SR LOAD MATE<br>8353701        | 2320 | B'CAST | ECM | 1 | OK | 00'46 |
| 01/06 20:26 | GVEA<br>19074586370            | 2320 | B'CAST | ECM | 1 | OK | 00'44 |
| 01/06 20:27 | KUP PL COORD<br>19076597198    | 2320 | B'CAST | ECM | 1 | OK | 00'46 |

\*\*\*\*\*  
 \*\*\* ACTIVITY REPORT \*\*\*  
 \*\*\*\*\*

| ST. TIME    | CONNECTION TEL/ID              | SENDER NAME | NO.  | MODE         | PGS. | RESULT   |
|-------------|--------------------------------|-------------|------|--------------|------|----------|
| 12/28 18:49 | CALEB BRETT<br>8352093         |             | 2308 | TRANSMIT ECM | 1    | OK 00'36 |
| 12/29 16:34 | CALEB BRETT<br>8352093         |             | 2309 | TRANSMIT ECM | 1    | OK 00'36 |
| 12/29 16:35 | ATC<br>8354574                 |             | 2310 | TRANSMIT ECM | 1    | OK 00'27 |
| 01/01 18:33 | CALEB BRETT<br>8352093         |             | 2311 | TRANSMIT ECM | 1    | OK 00'36 |
| 01/02 09:23 | CALEB BRETT<br>8352093         |             | 2312 | TRANSMIT ECM | 2    | OK 01'01 |
| 01/02 09:25 | ALAMAR<br>8355357              |             | 2313 | TRANSMIT ECM | 1    | OK 00'26 |
| 01/02 09:26 | ATC<br>8354574                 |             | 2314 | TRANSMIT ECM | 1    | OK 00'26 |
| 01/02 15:01 | APSC ANALYTICAL<br>19077878778 |             | 2315 | TRANSMIT ECM | 1    | OK 00'30 |
| 01/03 08:44 | CALEB BRETT<br>8352093         |             | 2316 | TRANSMIT ECM | 1    | OK 00'37 |
| 01/03 15:50 | 12148809501                    |             | 2317 | TRANSMIT G3  | 2    | OK 01'24 |
| 01/03 16:29 | CALEB BRETT<br>8352093         |             | 2318 | TRANSMIT ECM | 2    | OK 01'18 |
| 01/04 00:10 | 12182547567                    |             | 2319 | TRANSMIT ECM | 13   | OK 03'00 |
| 01/04 14:07 | 1 907 835 2389                 |             | 6556 | AUTO RX ECM  | 1    | OK 00'32 |
| 01/06 19:53 | ALAMAR<br>8355357              |             | 2320 | B' CAST ECM  | 1    | OK 00'47 |
| 01/06 19:55 | CALEB BRETT<br>8352093         |             | 2320 | B' CAST ECM  | 1    | OK 01'27 |
| 01/06 19:57 | PHILLIPS<br>19076595917        |             | 2320 | B' CAST ECM  | 1    | OK 00'44 |
| 01/06 19:58 | BPX<br>19076594436             |             | 2320 | B' CAST ECM  | 1    | OK 00'39 |
| 01/06 19:59 | ENDICOTT<br>19076596782        |             | 2320 | B' CAST ECM  | 1    | OK 01'06 |
| 01/06 20:01 | KUPARUK<br>19076597277         |             | 2320 | B' CAST ECM  | 1    | OK 00'46 |
| 01/06 20:02 | LISBURNE<br>19076595122        |             | 2320 | B' CAST ECM  | 1    | OK 00'37 |
| 01/06 20:03 | USCG<br>8357286                |             | 2320 | B' CAST ECM  | 1    | OK 00'44 |
| 01/06 20:04 | ADEC VDZ<br>8352429            |             | 2320 | B' CAST ECM  | 1    | OK 00'32 |
| 01/06 20:05 | ANC OM<br>19077878778          |             | 2320 | B' CAST ECM  | 1    | OK 00'30 |
| 01/06 20:07 | NORTH STAR<br>19076703674      |             | 2320 | B' CAST ECM  | 1    | OK 00'46 |
| 01/06 20:08 | ALPINE<br>19076704234          |             | 2320 | B' CAST ECM  | 1    | OK 00'38 |
| 01/06 20:09 | WMS N. POLE<br>19074885154     |             | 2320 | B' CAST ECM  | 1    | OK 00'38 |
| 01/06 20:10 | PETRO STAR NP<br>19074883655   |             | 2320 | B' CAST G3   | 1    | OK 00'52 |
| 01/06 20:11 | PETRO STAR VDZ<br>8355124      |             | 2320 | B' CAST ECM  | 1    | OK 00'46 |
| 01/06 20:13 | SERVS BASE<br>8346962          |             | 2320 | B' CAST ECM  | 1    | OK 00'39 |

Alyeska Pipeline Service Company

CPF No. 5-2007-5041

Exhibit 1

Page 7 of 7

**PROBABLE VIOLATION 2:  
Tank 190 Vent Fire**

**PHMSA POSITION**

**Pertinent Regulation:**

49 CFR §195.54 Accident reports.

- (a) Each operator that experiences an accident that is required to be reported under §195.50 shall as soon as practicable, but not later than 30 days after discovery of the accident, prepare and file an accident report on DOT Form 7000-1, or a facsimile.

49 CFR §195.50 Reporting accidents.

An accident report is required for each failure in a pipeline system subject to this part in which there is a release of the hazardous liquid or carbon dioxide transported resulting in any of the following:

- (a) Explosion or fire not intentionally set by the operator.

**Findings:**

Alyeska failed to file an accident report on DOT Form 7000-1, as required by §195.54, within 30 days after discovery of an accident that was required to be reported under §195.50. On January 6, 2007 crude oil vapors were released from a valve on the top of Tank 190 at PS9 during a relief event. The escaping vapors were ignited by a portable heater nearby, and a fire ensued. The fire scorched the vacuum/pressure valve on the top of Tank 190. This accident qualifies as reportable under §195.50 because a failure of the pipeline system resulted in the release of crude oil vapors and a subsequent fire. Despite the seriousness of the fire caused by pipeline operations, Alyeska did not submit an accident report.

**Proposed Civil Penalty:**

Regarding Item 2, the Compliance Officer has reviewed the circumstances and supporting documentation involved in the probable violation(s) and has recommended that Alyeska be preliminarily assessed a civil penalty in the amount of \$11,000.00.

**Proposed Compliance Order:**

In regard to Item Number 2 of the Notice pertaining to Alyeska's failure to file an accident report on DOT Form 7000-1 within 30 days after discovery of a reportable accident, Alyeska shall modify its procedures for compliance with §§195.50 and §195.54 to include releases of hydrocarbon vapors that result in any event described in §§195.50 and §195.54. Within sixty (60) days of receipt of the Final Order Alyeska shall modify and submit these procedures to the Director, Western Region.

## ALYESKA PIPELINE SERVICE COMPANY'S RESPONSE

### **Summary:**

Alyeska Pipeline Service Company (Alyeska) respectfully disagrees with PHMSA's finding that Alyeska failed to file an accident report on DOT Form 7000-1 as a result of the vent fire on January 6, 2007. Alyeska requests that the finding and the proposed compliance order be withdrawn, and PHMSA withdraw the proposed civil penalty.

### **Discussion:**

Both §195.54 and §195.50 require reporting of accidents that result from a release of hazardous liquid. Alyeska was not required to file a DOT Form 7000-1 under §195.54 because there was not a release of the hazardous liquid transported by the company. Hazardous liquid is defined in §195.2, Definitions, as petroleum, petroleum products, or anhydrous ammonia. Alyeska transports petroleum, specifically, crude oil. In §195.2, petroleum is defined as crude oil, condensate, natural gasoline, natural gas liquids, and liquefied petroleum gas. Petroleum products are defined in §195.2 as flammable, toxic, or corrosive products obtained from distilling and processing of crude oil, unfinished oils, natural gas liquids, blend stocks and other miscellaneous hydrocarbon compounds. Alyeska does not transport any products that have been distilled or processed.

The cause of the vent fire at Pump Station 9 was the release of flammable vapors. Nowhere in the definitions provided in Part 195 is vapor, or flammable vapor, defined. Vapor is not included in the definitions of hazardous liquid, petroleum, or petroleum product.

In other sections of Part 195, PHMSA uses the terms "flammable hazardous liquid" and "flammable vapors" to identify two distinct and different physical states. See §195.438. In the reporting requirements, §195.54 and §195.52, PHMSA requires specific reporting for the release of hazardous liquid. Neither of these regulations uses the terms "flammable vapors" or "vapors" in these reporting regulations. Clearly, PHMSA understands the difference between hazardous liquid and vapors, and uses these terms accordingly to create the compliance coverage applicable for each circumstance. As there was no release of hazardous liquid on January 6, 2007, Alyeska was not required to file a DOT Form 7000-1 for this incident.

With regard to Finding 2, Alyeska respectfully requests that the finding and proposed compliance order be withdrawn. With regard to the proposed civil penalty, Alyeska requests that PHMSA withdraw the proposed civil penalty.

**PROBABLE VIOLATION 3:  
Remote Gate Valve 32**

**PHMSA POSITION**

**Pertinent Regulation:**

49 CFR §195.402 Procedures Manual for Operations, Maintenance and Emergencies

- (a) General. Each operator shall prepare and follow for each pipeline system a manual of written procedures for conducting normal operations and maintenance activities and handling abnormal operations and emergencies. This manual shall be reviewed at intervals not exceeding 15 months, but at least once each calendar year, and appropriate changes made as necessary to insure that the manual is effective. This manual shall be prepared before initial operations of a pipeline system commence, and appropriate parts shall be kept at locations where operations and maintenance activities are conducted.
- (c) Maintenance and normal operations. The manual required by paragraph (a) of this section must include procedures for the following to provide safety during maintenance and normal operations.
- (3) Operating, maintaining, and repairing the pipeline system in accordance with each of the requirements of this subpart...
- (7) Starting up and shutting down any part of the pipeline system in a manner designed to assure operation within the limits prescribed by §195.406, consider the hazardous liquid or carbon dioxide in transportation, variations in altitude along the pipeline, and pressure monitoring and control devices.

**Findings:**

On at least three (3) separate occasions between November 15, 2006 and January 6, 2007, Alyeska failed to follow its manual of written procedures, as required by §195.402(a), in connection with the operation and maintenance of RGV-32. Contrary to its written procedures, Alyeska failed to require technicians to open the 6-inch by-pass line to equalize the pressure across RGV-32 when a 200 psi or greater pressure differential existed across the valve during opening. Alyeska procedure TP-OCC-0506, Section B-4, in place at the time of the spill, required a technician to go to the valve to equalize the pressure in order to minimize potential vibrations at RGV-32. Large vibrations of RGV-32 and nearby mainline piping can be caused by the collapse of vapor pockets upon re-opening of RGV-32. The Operations Control Center (OCC) log book maintained by Alyeska indicated that technicians did not equalize the pressure at RGV-32 during three (3) valve opening instances between November 15, 2006 and January 6, 2007.

Alyeska also allowed transient pressure surges to occur in the vicinity of RGV-32 on January 8, 2007, when it operated RGV-32 remotely with a 375 psi differential across the valve. This event was preceded by at least ten (10) valve closures and re-openings since

the T-O-R hot tap had been installed on September 11, 2006. The vibrations associated with all of these valve closures and re-openings, along with steady-state pressure pulsations, contributed significantly to loosening the T-O-R assembly, resulting in the January 8<sup>th</sup> leak.

**Proposed Civil Penalty:**

Regarding Item 3, the Compliance Officer has reviewed the circumstances and supporting documentation involved in the probable violation(s) and has recommended that Alyeska be preliminarily assessed a civil penalty in the amount of \$195,000.00.

**Proposed Compliance Order:**

In regard to Item Number 3 of the Notice pertaining to Alyeska's failure to follow its manual of written procedures on at least three (3) separate occasions, by failing to require technicians to open the 6-inch by-pass line to equalize the pressure across RGV-32 when a 200 psi or greater pressure differential existed across the valve during opening, Alyeska shall conduct, and submit to the Director, an engineering study that comprehensively addresses the following:

- a. The impact of vapor pocket collapses and associated vibrations throughout the TAPS system and the adequacy of Alyeska's procedures to deal with such events.
- b. How current and future operational conditions on TAPS may cause or contribute to the formation of vapor pockets, and the impacts of vapor pocket collapse on pipeline safety.
- c. The recent vapor pocket collapses at RGV-32 and past collapses at PS2, 3, 5, 6, 7, and 9, the booster pump at PS12, and the tripped anchors at Atigun Pass associated with vapor pocket collapse.
- d. How Alyeska plans to address these impacts throughout the TAPS system now and in the future, and how Alyeska will change its mainline and pump station piping and/or procedures to mitigate vapor pocket collapse and associated vibrations.

Alyeska shall submit the study within sixty (60) days of receipt of the Final Order. Within sixty (60) days of submission of the study, Alyeska shall modify its procedures in accordance with the study findings and the comments of the Director.

**ALYESKA PIPELINE SERVICE COMPANY'S RESPONSE**

**Summary:**

Alyeska Pipeline Service Company (Alyeska) respectfully disagrees with PHMSA's finding that Alyeska's failure to follow operating procedures during start-up caused the ball valve on the uncompleted thread-o-ring (TOR) assembly to vibrate loose and spill oil. The Root Cause Incident Investigation found that inadequate Safe Maintenance Procedures and inadequate administration controls to control temporary changes led to the completion plug not being installed in the TOR. It was not possible to completely

eliminate all mainline and bypass line vibrations due to the local topography and pipeline configuration. The aboveground mainline pipe and valves are designed to move and vibrations experienced under these conditions are not a threat to mainline integrity. Alyeska requests that the finding and the proposed compliance order be withdrawn, and PHMSA reconsider the proposed civil penalty.

**Discussion:**

The leak at RGV 32 on January 8, 2007, was determined to be the result of vibrations causing a closed ball valve screwed onto a TOR to unscrew, allowing crude oil to leak past the threads. A completion plug had not been installed in the TOR to isolate the ball valve from mainline pressure. (See Exhibit 2). The entire root cause analysis was sent to PHMSA Western Region on July 9, 2007. (See Exhibit 3). The conclusions and root causes determined by the team and itemized in the report were:

| Conclusion  | Root Cause   |
|---|--|
| 1. Vibration turning forces loosened the valve.   | Vibration was not considered in the installation of the temporary configuration without the completion plug. |
| 2. Completion plug was not installed in T-O-R.  | Inadequate Safe Maintenance Procedures.  |
| 3. Scheduled maintenance activities for temporary installations can be postponed or delayed without review or approval from Engineering or Operations.  | Inadequate administrative controls to address schedule changes or delays.                                    |
| 4. There is no specific guidance to address how long temporary changes (piping components) can be left in service.  | Inadequate administrative controls to control temporary changes.   |
| 5. All transient vibration sources were not fully attenuated by OCC operating procedures which specifically address the closing and subsequent reopening of RGV 32 with differential pressure across the valve. | Inadequate operating procedures to mitigate vibration.   |

As stated in conclusion #5 above, all transient vibration sources were not fully attenuated by the operating procedures used to open RGV 32 during the months leading up to the spill. In fact, the transient vibrations could not have been entirely eliminated by any of the operating procedures (TP-OCC-0506 or other) due to the pipeline configuration and upstream topography at the location of the valve.

RGV 32 is located on the south side of Atigun Pass and is closed in conjunction with RGVs 31, 33, and 34 to protect the mainline pipe from overpressure during pipeline shutdowns. Depending on pipeline throughput and other factors, a vapor pocket can form downstream of RGV 32 when it is closed due to the topography south of Atigun Pass. When RGV 32 or the RGV 32 bypass valve is opened, crude oil from upstream of the

valve flows past the valve and fills the vapor pocket. It takes a few minutes to fill the vapor pocket using RGV 32 and between thirty to ninety minutes to fill the vapor pocket using the RGV 32 bypass line. The flow past RGV 32 is accompanied by vibration that cannot be entirely mitigated because of the pressure reduction as the mainline or bypass valve allows oil to flow down from Chandalar Shelf.

The aboveground mainline pipe and valves are designed to move and are tolerant of the magnitude of vibration and movement experienced under these conditions. The vibrations experienced by the mainline pipe south of Atigun Pass have been analyzed and deemed not to be a threat to mainline integrity. However, screwed fittings such as the valve used on the TOR on the bypass line can vibrate loose and allow oil to leak. Had a completion plug been installed on the TOR, oil would not have spilled when the ball valve vibrated loose.

Alyeska also requests that the proposed compliance order requiring an engineering study be withdrawn. The incidents involving vapor bubble collapse noted in the proposed compliance order occurred over the span of fourteen years, had distinctly different root causes, were mitigated, and Alyeska has not experienced repeat incidents due to the same root causes. Specifically,

- a. & b. Alyeska has conducted internal and commissioned external studies regarding mainline vapor pocket collapses and associated vibrations throughout the TAPS. Actions as a result of these studies include installing the backpressure control system at the Valdez Marine Terminal and changing the opening timing of RGV 31 and RGV 32. Hydraulic analyses of other locations where slack line conditions could exist at current and future pipeline throughputs do not indicate additional issues need to be resolved at this time.
- c. Acute vibrations caused by vapor pocket collapse south of RGV 32 were mitigated by changing the opening sequence at RGV 32 in April 2007. The vapor bubble collapses that tripped anchors in Atigun Pass were mitigated in 2000 by changing the opening sequence at RGV 31. The vapor bubble collapses noted for the pump stations were caused by different mechanisms and were mitigated in different ways. Pump Station 2 is now out of operation. Pump Station 3 has not had a repeat occurrence since maintaining the crude relief tank level high enough to keep the discharge side of the relief valves flooded with crude oil (see Exhibit 4). Pump Station 5 and 6 sump pump discharge piping was rerouted in 2000 to keep it flooded with crude oil and now Pump Station 6 is out of operation. The booster pump piping at Pump Stations 9 and 12 was rerouted in 2000 to the mainline pump recirculation line to separate it from the relief line. Pump Station 12 is now out of operation. At all locations, maintenance procedures are reviewed thoroughly to assure all piping is fully purged of vapor before re-pressurizing a system that has been drained down.
- d. See the responses for a through c, above.

With regard to Finding 3, Alyeska respectfully requests that the finding and proposed compliance order be withdrawn because Alyeska had procedures for operating RGV 32 that comply with §195.402. With regard to the proposed civil penalty, Alyeska requests that PHMSA reconsider the proposed civil penalty.

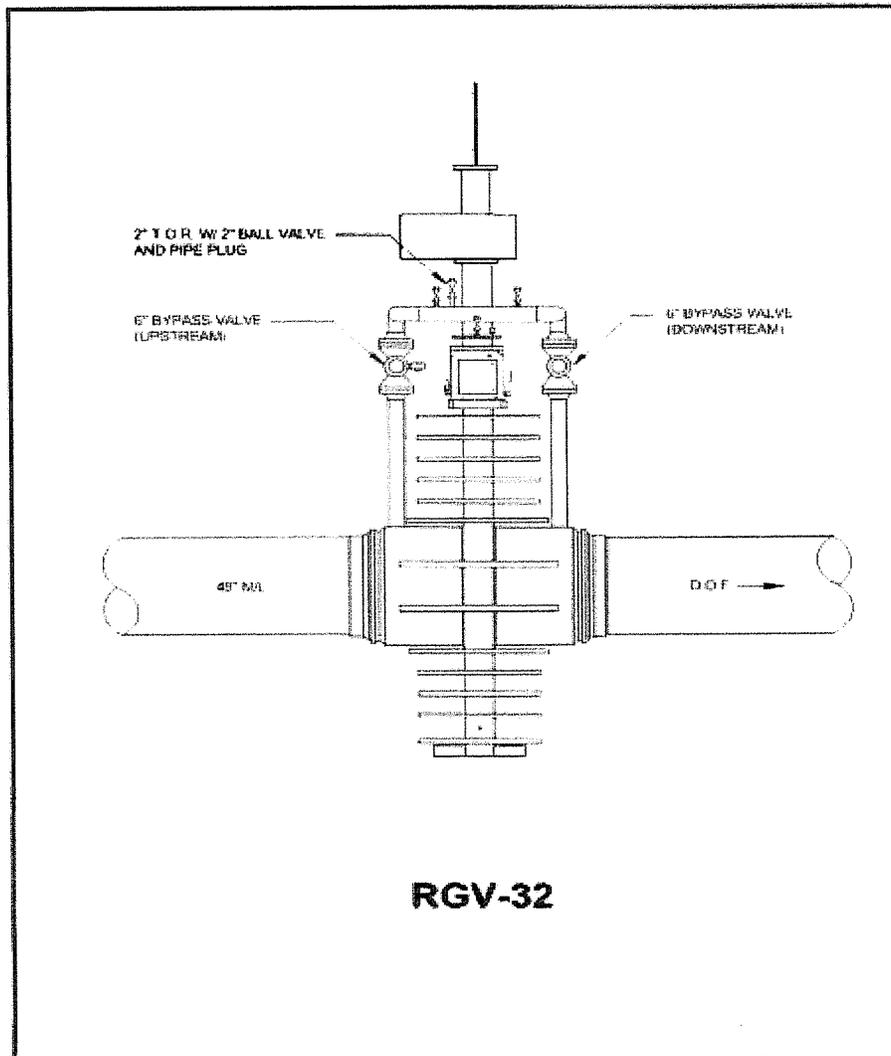
**SUPPORTING DOCUMENTATION**

Exhibit 2 - Figure 1, TOR on RGV-32 Bypass Line

Exhibit 3 - Government Letter 12796, dated July 9, 2007, without attachments

Exhibit 4 - DO-14-2, Section 7.1.1, Table 7.1

Figure 1: TOR on RGV 32 Bypass Line





P.O Box 196660

ANCHORAGE, ALASKA 99519-6660

TELEPHONE (907) 787-8700

July 9, 2007

Government Letter No: 12796  
APSC File No: 2.09

Attention: Jerry Brossia, Authorized Officer, BLM/OPM  
Mike Thompson, State Pipeline Coordinator, ADNRS/SPCO  
Chris Hoidal, PHMSA Western Region Director  
Becky Lewis, DEC TAPS/JPO Section Manager

Subject: RGV 32 spill

Dear Sirs and Madam:

Please find enclosed copies of the Alyeska incident investigation for the RGV 32 spill and the Alyeska Management response to recommendations made by the investigation team. We appreciate the participation and input from Becky Lewis (DEC) and Bill Flanders (DOT PHMSA).

Please contact me at (907) 787-8933 if you would like to discuss these documents with Alyeska personnel.

Sincerely yours,

Robert I. Shoaf  
JPO/DOT Liaison Director

Enclosure: Alyeska RGV 32 - TOR Fitting/Valve Leak Root Cause Incident Investigation & Executive Summary Final Report May 16, 2007.  
Final Management Action Plan in response to Root Cause Incident Investigation June 11, 2007.

cc: Bill Flanders US Mail  
Rod Hanson (via MAC)  
Mike Joynor (via MAC)  
Lorena Hegdal (via MAC)  
Jim F. Johnson (via MAC)  
Alan Beckett (via MAC)  
Karen Wilbanks (via MAC)  
JPO Record Center MS 600 Records\_Center@JPO.doi.gov

## 7.1.1 Pump Station Tank Levels

Tankage by location, tank number, size (minimum and maximum), barrels per foot, and barrels per hour/maximum pressure is shown below.

**Table 7-1. Pump Station Tank Levels**

| Pump Station | Tank    | Minimum/Feet | Maximum/Feet | BBL/Foot | BPH/Max Pressure for Booster Pump |
|--------------|---------|--------------|--------------|----------|-----------------------------------|
| 1            | 110/111 | 6.0          | 46.6         | 4,400    | 28,000/66 psig                    |
| 3            | 130     | 13.8         | 29.4         | 1,880    | 8,360/120 psig                    |
| 4            | 140     | 5.1          | 29.4         | 1,880    | 8,360/120 psig                    |
| 5            | 150     | 5.7          | 37.2         | 4,000    | 8,360/870 psig                    |
| 7            | 170     | 5.7          | 29.4         | 1,880    | 1,500/290 psig                    |
| 9            | 190     | 13.3         | 29.4         | 1,880    | 900/600 psig                      |

**Note:** Pipeline Fuel Tanks = 742 bbls per foot

Not all booster pump S/D switches are set at the same level as above. Therefore, it will take a command STOP to obtain proper levels at PS03, PS04, PS07, and PS09.

## 7.2 Terminal Crude Tanks

### 7.2.1 Terminal Crude Oil Distribution System

Two 48-inch oil headers run to every oil tank in the east and west tank farms. A single line is extended from each tank to the header. A 36-inch tank valve and two 48-inch valves at the headers are provided for each tank. All valves are motor operated for remote control from the Terminal Controller's console, at the valve, or at the starter in the closest PDC. Two 48-inch motor operated block valves (MOV 746 and MOV 747) are located in the oil headers between Tanks 9 and 11 in the east tank farm. These valves are motor operated for remote control from the Terminal Controller's console, at the valve, or at the electrical starter in the nearest PDC.

The west oil manifold, in conjunction with oil transfer pumps P-1 A/B, permits transfer of oil from any oil tank in the east or west tank farm to any other oil tank; connects the oil headers in the east and west tank farms; and permits oil loading operations over Berths 4 and 5. The manifold consists of four 16-inch valves for lining up the oil headers to the transfer pumps and eight 48-inch valves. All the valves are motor operated for remote control from the OCC, locally at the valve itself, or at the electrical starter at the nearest PDC.

#### 7.2.1.1 Oil Tankage and Transfer Piping

Eighteen welded steel, cone-roof tanks are provided at the VMT. These tanks are 250 feet in diameter and 62 feet, 3 inches high, with a working capacity of 515,000 bbls each. Total capacity of each tank is 550,000 bbls. Fourteen tanks are in the east tank farm and four tanks are in the west tank farm. Working capacity for these eighteen tanks is 8,807,611 bbls. The tanks are arranged in pairs with each pair at a common elevation. A containment dike enclosing each pair of tanks has a capacity equal to 110% of the total volume of the pair of tanks plus an additional 2-foot elevation to allow for surface water that may be impounded within the area.

**PROBABLE VIOLATION 4:  
Tank 190 Vent Fire**

**PHMSA POSITION**

**Pertinent Regulation:**

49 CFR §195.402 Procedures Manual for Operations, Maintenance and Emergencies

(a) General. Each operator shall prepare and follow for each pipeline system a manual of written procedures for conducting normal operations and maintenance activities and handling abnormal operations and emergencies. This manual shall be reviewed at intervals not exceeding 15 months, but at least once each calendar year, and appropriate changes made as necessary to insure that the manual is effective. This manual shall be prepared before initial operations of a pipeline system commence, and appropriate parts shall be kept at locations where operations and maintenance activities are conducted.

(c) Maintenance and normal operations. The manual required by paragraph (a) of this section must include procedures for the following to provide safety during maintenance and normal operations.

(3) Operating, maintaining, and repairing the pipeline system in accordance with each of the requirements of this subpart

**Findings:**

Alyeska failed to follow its manual of written procedures as required by §195.402 by allowing a portable industrial heater within 15 feet of Tank 190 at PS 9 on TAPS. Alyeska's Corporate Safety manual, SA-38, 2.1.17, as referenced by OM-1, requires that "portable industrial heaters must be kept 25 feet from any oil, gas or electric process facilities."

**Proposed Civil Penalty:**

Regarding Item 4, the Compliance Officer has reviewed the circumstances and supporting documentation involved in the probable violation(s) and has recommended that Alyeska be preliminarily assessed a civil penalty in the amount of \$100,000.00.

**ALYESKA PIPELINE SERVICE COMPANY'S RESPONSE**

**Summary:**

Alyeska Pipeline Service Company (Alyeska) does not dispute PHMSA's finding that Alyeska failed to follow its procedures for placement of portable industrial heaters. However, Alyeska contests the amount of the proposed civil penalty.

**Discussion:**

Alyeska agrees that it placed a Tioga heater within 25 feet of Tank 190 on January 6, 2007, in violation of Alyeska's procedures. The heater was placed 15 feet from the side of the tank shell wall and 32 feet from the tank vent. (See Exhibit 5). Alyeska's Corporate Safety Manual (SA-38) required heaters to be located 25 feet away from oil, gas and electric process facilities (See Exhibit 6).

As a result of the incident, corrective actions recommended by the root cause analysis have been taken to tighten the controls around the use of portable industrial heaters in tank farms. SA-38, Section 2.1, Portable Industrial Heaters, was expanded on May 7, 2007 to include information on Fire Watch and Equipment Watch requirements and duties, as well as information on when and where Hot Work Permit, Form 0162, are required for portable heaters on Alyeska facilities (see Exhibit 7).

In addition, Alyeska has revised its access control procedures for the pipeline and Valdez tank farms to minimize potential flammable vapor and ignition hazards in tank farm areas. The new tank farm access and control procedures state that standing equipment should be placed outside the classified area whenever possible and Tioga type heaters will not be placed in the classified area. These procedures were revised to control personnel access, restrict vehicle and standing equipment use, require hot work permits and isolate crude oil relief events into the tanks while maintenance and operations are being conducted in the tank farms. (See Exhibits 8 through 11).

Alyeska contests the amount of the proposed civil penalty as excessive under the circumstances of the incident. Under 49 U.S.C. §60122(a), the maximum penalty for an individual violation is \$100,000 per day. Section 60122(b) provides the Secretary of Transportation guidance for determining the severity of the proposed penalty. The Secretary must consider the nature, circumstances, and gravity of the violation, including adverse impact on the environment. 49 U.S.C. §60122(b)(1)(A). This finding of failure to follow procedure, while not insignificant, was not the root cause of the vent fire. The gravity of the violation pales in comparison to the other findings in this NOPV, yet carries the same maximum penalty. There was no adverse impact on the environment, nor was there damage to the facility.

The Secretary must also consider Alyeska's degree of culpability and whether the company has any history of prior violations. 49 U.S.C. §60122(b)(1)(B). Alyeska has accepted responsibility for the vent fire. It points out, though, that the placement of the heater was not the root cause of the incident. Alyeska has not had any previous violation that remotely relates to this violation. Finally, the Secretary must consider the company's good faith efforts to comply. 49 U.S.C. §60122(b)(1)(C). Alyeska believes that its

procedures provided necessary risk mitigation to control ignition sources in hazardous work areas. Alyeska was acting in good faith and using best efforts to prevent such an incident. The root cause analysis found an unusual number of improbable events combined to cause the vent fire. Therefore, the maximum amount for the civil penalty is excessive.

With regard to Finding 4, Alyeska respectfully requests that PHMSA reconsider the proposed civil penalty.

### **SUPPORTING DOCUMENTATION**

Exhibit 5 – PS09 Tank Vent Fire Root Cause Incident Investigation Summary Report, page 2

Exhibit 6 – SA-38, Section 2.1 Portable Industrial Heaters, Ed. 5, Rev. 21, December 29, 2006

Exhibit 7 –SA-38, Section 2.1 Portable Industrial Heaters, Ed. 5, Rev. 26, October 27, 2007

Exhibit 8 – N-1 00 13 Pump Station Tank Farm Access Control Operating Procedure.

Exhibit 9 – BWT-1 20 Restriction of BWT Tank Farm Access Operating Procedure

Exhibit 10 – BWT-1 22 90s Tank Farm Control Operating Procedure

Exhibit 11 – OMS-3 14 East and West Tank Farm Access Control Operating Procedure

**Pump Station 9 Tank Vent Fire  
Root Cause Incident Investigation  
Executive Summary – Final Report**

2. Strengthen our Risk Management Process by incorporating the elements of the process safety management program for those systems carrying hydrocarbons. The investigation team realizes our hydrocarbon transportation systems are not governed under the OSHA regulation (29 CFR 1910.119); however the process safety management program is very robust and a good business practice.
3. Re-evaluate our work permit process to require the approval authority be commensurate with the risk.
4. Implement the recommendations from the 1995 TAPS Crude Volatility Task Force Report. The recommendation was to install automatic audible alarms in the Tank Farms to alert personnel that an event was taking place or, if the alarms were not possible, to notify personnel by radio. Pump Station 3 installed automatic audible alarms in their tank farm but have since disconnected the automation. Valdez Marine Terminal installed audible alarms however they are not automatic. All other Pump Stations elected to utilize radios to notify personnel. The individual at Pump Station 9 in the Tank Farm at the time of the incident did not hear the warning given on the radio.

Reviews & Action Planning

This TAPROOT root cause analysis and recommendations, along with the initial investigation report using the LPS analysis tools has been reviewed by Alyeska's accountable managers and executives.

The recommendations presented in this report, and those in the initial LPS report, are being considered in the development of a specific action plan. The final action plan will consist of specific deliverables, commitment dates, and assignment of accountable resources. All actions will be documented and tracked to closure through Alyeska's Management Action & Commitments (MAC) process.

This independent Root Cause Analysis report and recommendations are now considered final.



## Revision History

|  |                                 |
|--|---------------------------------|
| <b>Document Title</b><br>Corporate Safety Manual | <b>Document Number</b><br>SA-38 |
|--|---------------------------------|

|  |                       |                         |
|--|-----------------------|-------------------------|
| <b>Approved by Andrew W. Postishek, Safety &amp; Industrial Health Manager</b>   |                       |                         |
| <b>Current Revision Summary</b>  | <b>Ed. 5, Rev. 26</b> | <b>October 27, 2007</b> |
| <p>The following revisions were made:</p> <ul style="list-style-type: none"> <li>• Requirement 1.23, "Incident Verbal Notification Program": Complete rewrite, removing incident investigation information. Information regarding investigations now resides in <i>LPS-001, Loss Prevention System</i>.</li> </ul> |                       |                         |

|  |                       |                     |
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| <b>Approved by Andrew W. Postishek, Safety &amp; Industrial Health Manager</b>   |                       |                     |
| <b>Current Revision Summary</b>  | <b>Ed. 5, Rev. 25</b> | <b>May 24, 2007</b> |
| <p>The following revisions were made:</p> <ul style="list-style-type: none"> <li>• Requirement 1.15, "Work Permit System":             <ul style="list-style-type: none"> <li>– Subsection 1.15.4.1, "Issuing Authority"</li> <li>– Subsection 1.15.5.6, "Hot Work Permit, Form 0162"</li> <li>– Figure 8, Form 0162, Hot Work Permit</li> </ul> </li> </ul> |                       |                     |

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| <b>Approved by Andrew W. Postishek, Safety &amp; Industrial Health Manager</b>  |                       |                    |
| <b>Revision Summary</b>   | <b>Ed. 5, Rev. 24</b> | <b>May 7, 2007</b> |
| <p>The following revisions were made:</p> <ul style="list-style-type: none"> <li>• Requirement 1.7, "Flame Resistant Clothing," has been revised in Section 1.7.6.5, specifically relating to raingear.</li> <li>• Requirement 1.15, "Work Permit System," has been revised in Section 1.15.4.8., "Fire Watch"; 1.15.4.9, "Equipment Watch"; 1.15.5.1.1, "Permit Closeout"; "1.15.5.6, "Hot Work Permit"; and the updated Form 0162, Hot Work Permit, has been inserted.</li> <li>• Requirement 1.19, "Welding and Flame Cutting," has been revised in Section 1.19.6.2, "Fire Watch."</li> <li>• Requirement 2.1, "Portable Industrial Heaters," has been revised in Section 2.1.4.1, "Fire Watch"; 2.1.4.2, "Equipment Watch"; and 2.1.4.3, "Heaters."</li> </ul> |                       |                    |

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| <b>Document Title</b><br>Corporate Safety Manual | <b>Document Number</b><br>SA-38 |
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|---|-----------------------|--------------------|
| <b>Approved by Andrew W. Postishek, Safety &amp; Industrial Health Manager</b>  |                       |                    |
| <b>Revision Summary</b>   | <b>Ed. 5, Rev. 23</b> | <b>May 3, 2007</b> |
| The following revision was made:  |                       |                    |
| <ul style="list-style-type: none"> <li>Requirement 1.23, "Incident Reporting/Investigation Program": Complete rewrite, incorporating LPS to bring all Alyeska business process, programs, and management systems into alignment.</li> </ul> |                       |                    |

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|---|-----------------------|----------------------|
| <b>Approved by Andrew W. Postishek, Safety &amp; Industrial Health Manager</b>  |                       |                      |
| <b>Revision Summary</b>   | <b>Ed. 5, Rev. 22</b> | <b>March 2, 2007</b> |
| The following revisions were made:  |                       |                      |
| <ul style="list-style-type: none"> <li>1.15, "Work Permit System," has been revised in Section 1.15.5.6, "Hot Work Permit, Form 0162."</li> <li>1.16, "Energy Isolation," has been revised in Section 1.16.8.2, "Pressure Energy Sources (Pressure or Vacuum)."</li> <li>3.9, "Alyeska Employee Safety Committee Program," has been revised in Section 3.9.5.2, "TAPS Employees," and 3.9.5.3, "Safety Committees."</li> <li>Checked and updated references in the above requirements.</li> </ul> |                       |                      |

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| <b>Approved by Andrew W. Postishek, Safety &amp; Industrial Health Manager</b>   |                       |                          |
| <b>Revision Summary</b>  | <b>Ed. 5, Rev. 21</b> | <b>December 29, 2006</b> |
| The following revisions were made:   |                       |                          |
| <ul style="list-style-type: none"> <li>1.13, "Hand Protection," has been revised to include a new section on use of Kevlar® gloves.</li> <li>1.15, "Work Permit System," has been revised in Section 1.15.5.6, "Hot Work Permit, Form 0162." <i>Form 0162, Hot Work Permit</i> has also been revised.</li> <li>2.6, "Excavation Safety," has been revised in Section 2.6.6., "Work Permits," and Section 2.6.7.2, "Excavation."</li> </ul> |                       |                          |

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| <b>Approved by Andrew W. Postishek, Safety &amp; Industrial Health Manager</b>  |                       |                         |
| <b>Revision Summary</b>   | <b>Ed. 5, Rev. 20</b> | <b>December 1, 2006</b> |
| The following revisions were made:  |                       |                         |
| <ul style="list-style-type: none"> <li>1.7, "Flame Resistant Clothing," has been completely revised to include ARC flash, factors for wearing raingear, and service life.</li> <li>1.12, "Electrical Equipment," has been completely revised to include ARC flash PPE and labeling, and training requirements.</li> </ul> |                       |                         |

## 2.1 Portable Industrial Heaters

### 2.1.1 Purpose

This requirement has been established to provide instructions and information for the safe operation of portable industrial heaters.

### 2.1.2 References

- 29 CFR 1926.151, "Fire Prevention"

### 2.1.3 Responsibilities

Managers and supervisors of activities utilizing portable industrial heaters are responsible for compliance with this requirement.

### 2.1.4 Requirements

1. Only kerosene, #1 fuel oil, LPG/catalytic heaters, or gasoline-fueled fresh air heaters will be allowed for use in Alyeska facilities.
2. A *Hot Work Permit, Form 0162* is required for operation of all portable heater applications within 50 feet of an NEC Class I area or other areas as identified by facility supervision. Refer to Section 1.15.8, "Records," for retention information.
3. Heaters will not be operated within 50 feet of NEC Class I areas unless their operations are monitored. Heaters must be checked at least every 1/2-hour of operation by the fire watch. Heaters operated outside the 50 foot radius described above shall be operated with *Form 0161, Unit Work Permit*, and no special visual inspection or monitoring is required unless specified in the special instructions of the work permit or work plan.
4. Heaters in operation will be kept level, stable, and set on noncombustible material. Wheeled heaters must have tires chocked.
5. Heaters will not be allowed to operate in or under buildings. Heat will be directed to desired location in or under a building by a fire-resistive duct.
6. Heated areas will be adequately ventilated and tested to prevent carbon monoxide or oxygen deficiency buildup. Indirect fired heaters should be used to heat space which may be occupied by personnel.
7. Heaters will not be operated in the presence of volatile fumes.
8. No combustible material (wood, paper, Visqueen, etc.) will be allowed within 10 feet of any heater. No similar materials will be allowed within 10 feet of the heater outlet. Tarps, canvas, Visqueen, or similar coverings will be secured to prevent the wind from blowing them against the heater, heater outlet, or inlet.
9. A 20-lb. dry chemical extinguisher will be located not more than 50 feet nor closer than 10 feet from the operating heater. Fire extinguishers are to be provided on a ratio of one to every two operating heaters.
10. Heaters will be shut down and allowed to cool before refueling.

**NOTE**

600K Btu and higher heaters may be left running while refueling.

11. Heater refueling will be done with a properly marked, approved, safety can and fuel storage areas will be kept at least 15 feet from heater location.

**NOTE**

600K Btu and higher heaters will be fueled by a spreader truck.

12. Heater air inlet and discharge areas will be kept away from obstructions that would hinder the free flow of air into and out of the heater.
13. Fire resistive ducts should be of the flexible mat type. However, where metal ducting is used, care must be taken to maintain an 18-inch clearance when penetrating a combustible wall.
14. Oil-fired heaters shall be equipped with a safety control to stop fuel flow in case of flame failure.
15. Fire ducts and insulation material must not contain asbestos in any form.
16. Portable industrial heaters must be kept 15 feet from any combustible structure (e.g., trailer, building, shack, etc.).
17. Portable industrial heaters must be kept 25 feet from any oil, gas, or electric process facilities.

**2.1.5 Definitions**

N/A

**2.1.6 Training**

Fire watch must be trained as a fire watch and have fire extinguisher training.

**2.1.7 Records**

For record retention requirements, see the *Records Retention Schedule* located under Resources\Records\Records Retention Schedule on the A-Net.



## Revision History

| Document Title          | Document Number |
|-------------------------|-----------------|
| Corporate Safety Manual | SA-38           |

| Approved by Andrew W. Postishek, Safety & Industrial Health Manager  |                |                  |
|--|----------------|------------------|
| Current Revision Summary   | Ed. 5, Rev. 26 | October 27, 2007 |
| The following revisions were made:   |                |                  |
| <ul style="list-style-type: none"> <li>Requirement 1.23, "Incident Verbal Notification Program": Complete rewrite, removing incident investigation information. Information regarding investigations now resides in <i>LPS-001, Loss Prevention System</i>.</li> </ul> |                |                  |

| Approved by Andrew W. Postishek, Safety & Industrial Health Manager  |                |              |
|--|----------------|--------------|
| Current Revision Summary   | Ed. 5, Rev. 25 | May 24, 2007 |
| The following revisions were made:   |                |              |
| <ul style="list-style-type: none"> <li>Requirement 1.15, "Work Permit System":               <ul style="list-style-type: none"> <li>Subsection 1.15.4.1, "Issuing Authority"</li> <li>Subsection 1.15.5.6, "Hot Work Permit, Form 0162"</li> <li>Figure 8, Form 0162, Hot Work Permit</li> </ul> </li> </ul> |                |              |

| Approved by Andrew W. Postishek, Safety & Industrial Health Manager   |                |             |
|---|----------------|-------------|
| Revision Summary  | Ed. 5, Rev. 24 | May 7, 2007 |
| The following revisions were made:  |                |             |
| <ul style="list-style-type: none"> <li>Requirement 1.7, "Flame Resistant Clothing," has been revised in Section 1.7.6.5, specifically relating to raingear.</li> <li>Requirement 1.15, "Work Permit System," has been revised in Section 1.15.4.8., "Fire Watch"; 1.15.4.9, "Equipment Watch"; 1.15.5.1.1, "Permit Closeout"; "1.15.5.6, "Hot Work Permit"; and the updated Form 0162, Hot Work Permit, has been inserted.</li> <li>Requirement 1.19, "Welding and Flame Cutting," has been revised in Section 1.19.6.2, "Fire Watch."</li> <li>Requirement 2.1, "Portable Industrial Heaters," has been revised in Section 2.1.4.1, "Fire Watch"; 2.1.4.2, "Equipment Watch"; and 2.1.4.3, "Heaters."</li> </ul> |                |             |

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| <b>Document Title</b><br>Corporate Safety Manual | <b>Document Number</b><br>SA-38 |
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| <b>Approved by Andrew W. Postishek, Safety &amp; Industrial Health Manager</b>  |                       |                    |
| <b>Revision Summary</b>   | <b>Ed. 5, Rev. 23</b> | <b>May 3, 2007</b> |
| <p>The following revision was made:</p> <ul style="list-style-type: none"> <li>• Requirement 1.23, "Incident Reporting/Investigation Program": Complete rewrite, incorporating LPS to bring all Alyeska business process, programs, and management systems into alignment.</li> </ul> |                       |                    |

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| <b>Approved by Andrew W. Postishek, Safety &amp; Industrial Health Manager</b>  |                       |                      |
| <b>Revision Summary</b>   | <b>Ed. 5, Rev. 22</b> | <b>March 2, 2007</b> |
| <p>The following revisions were made:</p> <ul style="list-style-type: none"> <li>• 1.15, "Work Permit System," has been revised in Section 1.15.5.6, "Hot Work Permit, Form 0162."</li> <li>• 1.16, "Energy Isolation," has been revised in Section 1.16.8.2, "Pressure Energy Sources (Pressure or Vacuum)."</li> <li>• 3.9, "Alyeska Employee Safety Committee Program," has been revised in Section 3.9.5.2, "TAPS Employees," and 3.9.5.3, "Safety Committees."</li> <li>• Checked and updated references in the above requirements.</li> </ul> |                       |                      |

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| <b>Approved by Andrew W. Postishek, Safety &amp; Industrial Health Manager</b>   |                       |                          |
| <b>Revision Summary</b>  | <b>Ed. 5, Rev. 21</b> | <b>December 29, 2006</b> |
| <p>The following revisions were made:</p> <ul style="list-style-type: none"> <li>• 1.13, "Hand Protection," has been revised to include a new section on use of Kevlar® gloves.</li> <li>• 1.15, "Work Permit System," has been revised in Section 1.15.5.6, "Hot Work Permit, Form 0162." <i>Form 0162, Hot Work Permit</i> has also been revised.</li> <li>• 2.6, "Excavation Safety," has been revised in Section 2.6.6., "Work Permits," and Section 2.6.7.2, "Excavation."</li> </ul> |                       |                          |

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|---|-----------------------|-------------------------|
| <b>Approved by Andrew W. Postishek, Safety &amp; Industrial Health Manager</b>  |                       |                         |
| <b>Revision Summary</b>   | <b>Ed. 5, Rev. 20</b> | <b>December 1, 2006</b> |
| <p>The following revisions were made:</p> <ul style="list-style-type: none"> <li>• 1.7, "Flame Resistant Clothing," has been completely revised to include ARC flash, factors for wearing raingear, and service life.</li> <li>• 1.12, "Electrical Equipment," has been completely revised to include ARC flash PPE and labeling, and training requirements.</li> </ul> |                       |                         |

## 2.1 Portable Industrial Heaters

### 2.1.1 Purpose

This requirement has been established to provide instructions and information for the safe operation of portable industrial heaters.

### 2.1.2 References

- 29 CFR 1926.151, "Fire Prevention"

### 2.1.3 Responsibilities

Managers and supervisors of activities utilizing portable industrial heaters are responsible for compliance with this requirement.

### 2.1.4 Requirements

#### 2.1.4.1 Fire Watch

A dedicated Fire Watch shall be required,

1. In a classified area when operating standing equipment such as heaters, hot water or steam pressure washers.
2. In a non-classified area:
  - a. Whenever operating standing equipment such as heaters,
  - b. **AND** any of the following conditions exist:
    - 1) Appreciable amounts of combustible materials (e.g., building materials) closer than 35 feet away from the point of operation.
    - 2) Appreciable amounts of combustibles which can be easily ignited by sparks.
    - 3) Hot Work - A fire watch must be maintained by a minimum of **thirty (30) minutes** after completion of hot work to detect and extinguish smoldering fires.

##### 2.1.4.1.1 Fire Watch Duties

The Fire Watch is a dedicated individual whose sole function is to perform fire watch duties.

#### NOTE

More than one fire watch shall be required if combustible materials that could be ignited by the hot work operation cannot be directly observed by a single fire watch (e.g., in adjacent rooms where hot work is done on a common wall; multiple floors, in a tank farm where Fire Watch cannot see all equipment from where they are positioned).

The Fire Watch will not perform any other duties that will take their attention away from the area where the hot work is performed. Fire Watch must:

1. Ensure that safe conditions are maintained during the hot work by monitoring conditions to ensure that a fire or explosion does not occur as a result of the work being performed.

2. Inspect area of responsibility to ensure there are no leaks or spills from equipment.
3. Be aware of the inherent hazards involved in hot work and ensure that no condition arises, or actions taken, that will lead to a hazardous situation in the hot work area.
4. Keep at least (2) 20-lb. ABC fire extinguishers at the hot work location.
5. Have means of emergency communication (two-way radio) to report a fire or other emergency.
6. Know the facility protocol to report a fire or other emergency situations.
7. Be familiar with the surrounding facilities to sound an alarm in the event of a fire.
8. Be trained in the facility fire safety procedures and the use of fire extinguishing equipment to extinguish fires only when safe to do so.
9. Remain in a location that allows immediate communication with the individual(s) performing hot work for instant communication if a fire breaks out.
10. Watch for fires in all exposed areas for a minimum of thirty (30) minutes (including lunch and break times) after hot work is completed.
11. Be trained to shut down equipment in case of fire or emergency.

**NOTE**

Due to the complexity of the work or project (i.e., various types of work - classified and non-classified, size of work site, multiple locations, etc.), more than one Fire Watch and Equipment Watch(s) may be required.

**2.1.4.2 Equipment Watch**

An Equipment Watch(s) is required in a non-classified area when operating standing equipment such as portable heaters.

**2.1.4.2.1 Equipment Watch Duties**

1. Ensure safe conditions and good house-keeping are maintained.
2. Inspect area of responsibility to ensure equipment has required drip pans, no leaks or spills.
3. Know the facility protocol to report emergency situations.
4. Have means of emergency communication (two-way radio).
5. Be trained to shut down equipment in case of emergency.

**2.1.4.3 Heaters**

1. Only kerosene, #1 fuel oil, LPG/catalytic heaters, or gasoline-fueled fresh air heaters will be allowed for use in Alyeska facilities.
2. A *Hot Work Permit, Form 0162* is required for operation of all portable heater applications within 50 feet of a classified area or other areas as identified by facility supervision.
3. Heaters will not be operated within 50 feet of a classified area unless their operations are continuously monitored by a dedicated Fire Watch. Heaters operated outside the 50 foot radius described above shall be operated with *Form 0161, Unit Work Permit*, and no special visual inspection or monitoring is required unless specified in the special instructions of the work permit or work plan.

4. Heaters in operation will be kept level, stable, and set on noncombustible material. Wheeled heaters must have tires chocked.
5. Heaters will not be allowed to operate in or under buildings. Heat will be directed to desired location in or under a building by a fire-resistive duct.
6. Heated areas will be adequately ventilated and tested to prevent carbon monoxide or oxygen deficiency buildup. Indirect fired heaters should be used to heat space which may be occupied by personnel.
7. Heaters will not be operated in the presence of volatile fumes.
8. No combustible material (wood, paper, Visqueen, etc.) will be allowed within 10 feet of any heater. No similar materials will be allowed within 10 feet of the heater outlet. Tarps, canvas, Visqueen, or similar coverings will be secured to prevent the wind from blowing them against the heater, heater outlet, or inlet.
9. Two 20-lb. dry chemical extinguisher will be located not more than 50 feet nor closer than 10 feet from the operating heater. Fire extinguishers are to be provided on a ratio of one to every two operating heaters.
10. Heaters will be shut down and allowed to cool before refueling.

**NOTE**

600K Btu and higher heaters may be left running while refueling.

11. Heater refueling will be done with a properly marked, approved, safety can and fuel storage areas will be kept at least 15 feet from heater location.

**NOTE**

600K Btu and higher heaters will be fueled by a spreader truck.

12. Heater air inlet and discharge areas will be kept away from obstructions that would hinder the free flow of air into and out of the heater.
13. Fire resistive ducts should be of the flexible mat type. However, where metal ducting is used, care must be taken to maintain an 18-inch clearance when penetrating a combustible wall.
14. Oil-fired heaters shall be equipped with a safety control to stop fuel flow in case of flame failure.
15. Fire ducts and insulation material must not contain asbestos in any form.
16. Portable industrial heaters must be kept 15 feet from any combustible structure (e.g., trailer, building, shack, etc.).
17. Portable industrial heaters must be kept 25 feet from any oil, gas, or electric process facilities.

## 2.1.5 Definitions

N/A

## 2.1.6 Training

Fire watch must be trained as a fire watch and have fire extinguisher training.

## 2.1.7 Records

For record retention requirements, see the *Records Retention Schedule* located under Resources\Records\Records Retention Schedule on the A-Net.



# Pipeline Department Operating Procedure

Subject: Pump Station Tank Farm Access Control

Number N-1.00.13  
Revision 10

Page: 1 of 3  
Effective Date: 01-11-2008

|  |   |
|--|---|
| <b>Applicable To:</b> Pipeline Operations        | <b>Technical Assistance:</b> Holly Schoenborn |
| <b>Approval:</b> John Baldrige, Pipeline Manager |   |

## 1.0 Purpose and Scope

The purpose of this procedure is to outline the controls required for accessing and conducting work in the Pump Station tank farms in consideration of the potential for the presence of explosive vapors.

## 2.0 References

SA-38, *Corporate Safety Manual*, Requirement 1.15, "Work Permit System."

## 3.0 Affects

This procedure applies to Pump Stations 1, 3, 4, 5, 7, & 9. All the cold standby stations, PS 2, 6, 8, 10, & 12 Crude, and Turbine tanks are drained and relief systems are out of service and have no potential explosive vapors present in their tank farms. However, if cold restart is installed at PS 12, the Tank Farm would become active and this DOP would then apply to PS 12.

## 4.0 Responsible and Accountable Resources

- Pipeline Manager
- Area O&M Manager
- O&M Supervisor
- Pump Station Control Room Operator
- Technician
- Baseline Personnel
- Contractor Personnel

## 5.0 Records

None.

## 6.0 Procedure

Tank Farm Access Control: The Pump Station Control Room Operator (CRO) is the control point for access to the pump station tank farm. All personnel must obtain authorization from the CRO prior to access of the tank farm.

Tank farm access points will be posted identifying the requirement for a work permit and a gas test prior to the operation of equipment that might generate a source of ignition.



# Pipeline Department Operating Procedure

Subject: Pump Station Tank Farm Access Control

Number N-1.00.13  
Revision 10

Page: 2 of 3  
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Following Strategic Reconfiguration transition, when Pump Station Control Rooms are no longer staffed, OCC will become the control point for access to pump station tank farms.

### Normal Entry

1. Non-work permit related entry requires authorization from the CRO.
2. If work is to be performed within any tank farm dike area, an appropriate work permit will be obtained from the CRO.
3. If entry to, or work in the tank farm dike includes the use of equipment that may generate a source of ignition (vehicles, generators, welding, cutting, drilling, etc.), hot work permit requirements must be met in accordance with SA-38.

To the extent possible, vehicle mobile equipment entry into the tank farms will be minimized and shall be approved in advance by facility supervision. Vehicles and equipment should not be operated within fifty (50) feet of the tank without special precautions.

4. Unless approved in advance by the Area Manager or Pipeline Manager, the relief system at Pump Stations 3, 4, 5, 7 and 9 will be isolated whenever there is hot work involving open flame or extended use (more than two hours) of other spark producing equipment. Isolation of the relief system must be coordinated and scheduled with OCC.
5. Equipment and vehicles authorized in the tank farm will be attended at all times while in operation. Idling vehicles will not be left unattended.
6. Standing equipment should be placed outside the classified area whenever possible. Tioga type heaters will not be placed in the classified area.
7. Personnel entering the tank farm must be in radio communications with the CRO.

NOTE: All work permits issued for work within the tank farm which involves the operation of standing equipment must be reviewed and approved by the accountable Area O&M Manager or the Pipeline Manager prior to issuance. Standing equipment includes heaters, light plants, air compressors, welding machines, etc.

### Evacuation During a Relief Event

1. If a relief event occurs that causes venting to the tank farm area while personnel are present, the tank farm will be evacuated immediately.
2. The CRO will announce an evacuation on UHF radios and request an immediate evacuation.
3. Personnel will turn off all ignition sources and motorized equipment and leave the tank farm on foot to the designated pump station rally point.

### Re-Entry After Evacuation

After the relief event has concluded, a gas test will be performed prior to an issuance of an all clear from the CRO or OCC, and resumption of work activities.

## End of Procedure

### Revision History

|   |
|---|
| <b>Revision History</b>                             |
| <b>Approved by:</b> John Baldrige, Pipeline Manager |



# Pipeline Department Operating Procedure

Subject: Pump Station Tank Farm Access Control

Number N-1.00.13  
Revision 10

Page: 3 of 3  
Effective Date: 01-11-2008

| Revision | Date       | Revision Summary   |
|----------|------------|--|
| 10       | 01/11/2008 | Added individual stations that DOP applies under Section 3 "Affects"                         |
| 9        | 12/19/07   | Added specifics to step 3 of Section 6.0.  |
| 8        | 12/17/07   | Added specifics to step 3 of Section 6.0.  |
| 7        | 05/02/07   | Added specifics on isolating the relief system during hot work or during extended use.       |
| 6        | 04/13/07   | Added specifics on use of vehicles and standing equipment in a classified area.              |
| 5        | 04/03/07   | Added "Area O&M Manager" as accountable manager.   |
| 4        | 02/12/07   | Revised Section 6.0 to ensure hot work permit requirements are met in accordance with SA-38. |
| 3        | 01/30/07   | Removed redundant text box regarding tank farm access in windy or slippery conditions.       |
| 2        | 01/29/07   | Added more entry and evacuation procedure steps to Section 6.0                               |
| 1        | 08/15/06   | Revised text "Evacuation During a Relief Event"  |
| 0        | 08/15/06   | Initial issue of this procedure.   |



## Operating Procedure Ballast Water Treatment

Title: Restriction of BWT Tank Farm Access

Number: BWT-1.20 Page: 1 of 3

Revision: 8

Effective Date: 12/31/07

Approved by:

**Lloyd Street, BWT Supervisor for Joe Kuchin, BWT Manager**

Applicable to:

**Ballast Water Treatment Facility**

### Purpose

The purpose of this procedure is to outline the administrative controls required for accessing and conducting work in the BWT Area Tank Farm for Tanks 92, 93, 94, 80 and 81 in consideration of the potential for the presence of explosive vapors.

### Accountable Resources

- BWT Manager
- BWT Supervisor
- BWT Operators
- Fire, Safety Industrial Hygiene (FSIH)

### SPECIAL INSTRUCTIONS

Through the construction of the 90s Tank Farm into the Vapor Recovery System the following Special Instructions apply to all work done at the 90s tank farm ground level:

#### NO FANS RUNNING ON THE TANKS

- With NO hatches or purge nozzles open, work will be allowed if the tank rise is less than .2 feet per hour
- With ALL hatches and purge nozzles open, work will be allowed on the tank farm floor if the tank rise is less than .5 feet per hour.

#### ONE OR MORE FANS RUNNING ON THE TANKS

- Work will be allowed on the tank farm floor if the tank rise is below 3 feet per hour.

This procedure does not have to be physically present at the work site, initialed, or signed.

### PROCEDURE

#### Tank Farm Access Control:

The BWT Control Room Operator (CRO) is the control point for access to the BWT tank farm areas. All personnel accessing either the 80s or 90s tank farm must obtain authorization to enter from the CRO.

- \_\_\_ 1. LEL: Must be less than 5% for entry and conduct of work.



## Operating Procedure Ballast Water Treatment

Title: Restriction of BWT Tank Farm Access

Number: BWT-1.20

Page: 2 of 3

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- \_\_\_ 2. Actions if LEL exceeds 5%:
  - \_\_\_ a. Stop all work and operating machinery in the work area.
  - \_\_\_ b. Evacuate the area.
  - \_\_\_ c. Notify the CRO.

### 90s and 80s Tank Dike Areas Restrictions:

- \_\_\_ 1. No work allowed in 90s tank dike area while deballasting or gravitating more than 3 feet per hour.
- \_\_\_ 2. Initial entry into BWT tank farm within one hour after a venting event, prior to driving in or work in tank farm, must be on foot to ensure area is clear of hydrocarbons.
- \_\_\_ 3. When working in 80s tank dike area, all influents (skimmer, DAF, BTT) must be stopped and isolated.
- \_\_\_ 4. Flame Resistant Clothing is required for all personnel entering the 90s and 80s tank farm areas.
- \_\_\_ 5. Continuous gas testing is required for all work in the 90s and 80s tank farm areas.
- \_\_\_ 6. Personnel entering the tank farm must have radio communication on established channel as determined by the CRO.
- \_\_\_ 7. Prior to commencement of deballasting/skimming, CRO must notify all personnel in the tank farm of the expected start time.

### Tank Farm Access requirement:

**Note:** The following will be followed for accessing the BWT Tank Farm.

Log In & Log Out is required in all BWT process areas. BWT operations and staff personnel are not required to log in and out.

- \_\_\_ 1. If no Work Permit has been issued: The individuals entering the tank farm must notify the CRO and sign in on the BWT Sign-In Log unless escorted by a BWT operator or staff. When clear of the area the individual(s) must notify the CRO (who will record the time out into the log) or return and sign themselves out.
- \_\_\_ 2. If a Work Permit has been issued: Personnel desiring to enter the tank farm in order to join or visit a work site will notify the CRO. If access is authorized, the individual will sign the back of the permit at the job site. When work/visit is complete, the individual(s) will notify the CRO.

### Caution: All equipment operating in the tank farm must be continuously monitored. Personnel monitoring must maintain a continuous gas test.

- \_\_\_ 1. Any hot work permits in the BWT tank farm which involves operation of standing equipment must be reviewed and approved by the Terminal Manager (or designee). "Standing equipment" includes Tioga heaters, light plants, air compressors, etc.



## Operating Procedure Ballast Water Treatment

Title: Restriction of BWT Tank Farm Access

Number: BWT-1.20 Page: 3 of 3

Revision: 8

Effective Date: 12/31/07

**Note:** The intent of this control is to provide additional review for hot work to be conducted over an extended period of time which increases exposure to an event with potential of fire/explosion. This does not apply to permits for routine attended vehicle entries or use of handheld devices by Operations and Safety personnel.

### END OF PROCEDURE

### References:

For 90s and 80s Tank Top Work refer to:

- BWT-1.61, *Restriction of BWT Tank Top Activities*

### Revision History

| Revision | Date     | Revision Summary   |
|----------|----------|--|
| 8        | 12/31/07 | Delete part of sentence 1, with electric fans running. Change to 2. delete 'deballasting or gravitating, prior to' add 'a venting event, prior to'.  |
| 7        | 11/07/07 | Only one fan operating, change references that apply to two fans.  |
| 6        | 08/09/07 | Change to Special Instructions strike NO and replace with ALL Fans Running on the Tanks.   |
| 5        | 07/20/07 | Add to Special Instructions information concerning specific conditions during Vapor Recovery construction is completed. Add to #2. gravitating more then 3 feet per hour with all electric fans running. Format changes. |
| 4        | 3/07/07  | Add to 2. initial entry. Add step 4.a. Delete Supervisor approval, replace with Terminal Manager (or designee)   |
| 3        | 1/12/07  | Removed Step 3 for Vehicular traffic or work conducted during and within 1 hour of the completion of deballasting into the 80s or 90s tank area and the gas test.  |
| 2        | 1/12/07  | Revised bullets in #2 defining when work is not allowed in the 80s and 90s tank dike areas.  |
| 1        | 9/25/06  | Add bottom bullet to #2. Delete b.3. Add 5. and 5.a. Changes to #6. delete hot work order information. Delete numbers 7. and 8.  |
| 0        | 7/10/06  | New Procedure  |



## Operating Procedure Ballast Water Treatment

Title: 90's Tank Farm Access Control

Number: BWT-1.22

Page: 1 of 3

Revision: 0

Effective Date: 01/18/08

Approved by:

**Lloyd Street, BWT Supervisor for Joe Kuchin, BWT Manager**

Applicable to:

Ballast Water Treatment Facility

### Purpose

The purpose of this procedure is to outline the controls required for accessing and conducting work in the Valdez Marine Terminal BWT 90's tank farm.

### Accountable Resources

- BWT Lead Operator (LO)
- BWT Control Room Operator (BWT CRO)
- P/V Control Room Operator (P/V CRO)
- Project Single Point of Contact (SPOC)
- Safety Specialist
- Operations Control Center (OCC)
- VMT Maintenance

### Safety

- Fire Retardant Clothing (FRC)

### SPECIAL INSTRUCTIONS.

1. The BWT Operator is to assure good communications between working groups.
2. All steps in this procedure shall be completed in sequence unless specifically noted.

### PROCEDURE

Ballast Water Treatment (BWT) has the responsibility to verify safe access to the 90's tank farm dike area. The BWT CRO is the control point for access into the 90's tank farm dike area. All personnel are required to obtain authorization from the BWT CRO prior to accessing the 90's tank farm dike area.

### Normal Entry

1. A Job Loss Analysis (JLA) will be conducted before any work in 90's dike area during deballasting, 90's tank gravity transfer, or during abnormally high influent rates such as high snow melt or storm water collection.



## Operating Procedure Ballast Water Treatment

Title: 90's Tank Farm Access Control

Number: BWT-1.22

Page: 2 of 3

Revision: 0

Effective Date: 01/18/08

**Warning:** No Access to BWT 90's tank farm when TK 92 is receiving ballast.

- \_\_\_ 2. If work is to be performed within a tank farm dike area, an appropriate work permit must be obtained from the BWT CRO or Project SPOC.
- \_\_\_ 3. If work in the 90's tank farm dike area includes the use of equipment or tools that may generate a source of ignition, hot work permit requirements must be met in accordance with SA-38.
- \_\_\_ 4. BWT CRO will verify deballasting schedule by contacting OCC.
- \_\_\_ 5. The BWT CRO will contact P/V CRO to communicate work activities before a permit is issued.
- \_\_\_ 6. BWT Operator will conduct gas testing and report time with results to BWT CRO/Project SPOC for work permits documentation.
- \_\_\_ 7. The 90's tank farm dike area will be considered safe to work in with a permit and continuous gas monitoring.
- \_\_\_ 8. When the permit is issued, personnel working in the 90's tank farm dike area are required to wear FRC (as the outermost clothing), hard hat, safety glasses, and steel toed boots. Personnel must also observe continuous gas monitoring.
- \_\_\_ 9. Tank farm access points will be posted identifying the requirement for notifying BWT CRO Operator on radio channel 6 prior to entry of dike area.
- \_\_\_ 10. Personnel working in the tank farm dike areas or vapor valve platform are required to monitor channel 6 to allow for emergency or special instructions from the BWT CRO.
- \_\_\_ 11. Vehicles and equipment authorized in the 90's tank farm dike area will be attended at all times while in operation. Park vehicles and place equipment away from areas where tank vents are located.
- \_\_\_ 12. Snow removal operator needs to contact BWT CRO before accessing 90's tank farm.

### Evacuation

- \_\_\_ 1. In case of a tank venting, the P/V Operator will give instructions on channel 6 to evacuate the 90's tank farm. The 90's tank farm evacuation alarm will activate automatically. The BWT CRO can also activate the 90's tank farm evacuation alarm.
- \_\_\_ 2. Personnel working in the 90's tank farm dike area during an evacuation must shutdown all sources of ignition and all electrical equipment.
- \_\_\_ 3. Personnel must exit the 90's dike area and proceed to their designated rally point.
- \_\_\_ 4. BWT CRO and Project SPOC must ensure all personnel have evacuated the area and notify P/V CRO when clear.
- \_\_\_ 5. BWT CRO may deactivate the evacuation alarm at this time.



## Operating Procedure Ballast Water Treatment

Title: 90's Tank Farm Access Control

Number: BWT-1.22 Page: 3 of 3

Revision: 0 Effective Date: 01/18/08

### Re-Entry after Evacuation

- \_\_\_ 1. The BWT LO, Project SPOC, BWT Operator and/or Safety Specialist must perform a gas test prior to the authorization of re-entry to the 90's tank farm dike area.
- \_\_\_ 2. If the gas test results are negative, the BWT LO or Project SPOC will announce an "ALL CLEAR" on channel 6.
- \_\_\_ 3. Work in the 90's tank farm dike area may resume under the "Normal Entry" criteria.

**Note:** Access control guidelines for 90's Tank Farm during "Scheduled Venting/Purging" of tanks for cleaning and returning to service are covered under PVR-1.95, *Purging a Crude or BWT 90's Tank*.

### END OF PROCEDURE

### References

- SA-38, *Corporate Safety Manual*
  - Requirement 1.15 - *Work Permit System*
- PVR-1.95, *Purging a Crude or BWT 90's Tank*
- 2007 Tank Farm Daily Operations & Maintenance Risk Assessment

### Records

None

### Revision History

| Revision | Date | Revision Detail                   |
|----------|------|-----------------------------------|
| 0        | TBD  | Initial issue from Project Z-538. |



# Operating Procedure Oil Movements and Storage

Title: East and West Tank Farm Access Control

Number: OMS-3.14

Page: 1 of 3

Revision: 1

Effective Date: 12/13/07

|  |                            |
|--|----------------------------|
| Approved by:<br><b>Ricky Kent, VMT Marine / OM&amp;S Manager</b> | Approval Date:<br>12/10/07 |
| Applicable to:<br>Oil Movements & Storage                        |                            |

## Purpose

The purpose of this procedure is to outline the controls required for accessing and conducting work in the Valdez Marine Terminal East and West tank farms.

## Accountable Resources

- OM&S Lead Operator (LO)
- OM&S Tank Farm Operator
- P/V Control Room Operator (CRO)
- Project Single Point of Contact (SPOC)
- Safety Specialist
- Operations Control Center (OCC)
- VMT Maintenance

## Safety

- Fire Retardant Clothing (FRC)

## PROCEDURE

Oil Movements & Storage (OM&S) has the responsibility to verify safe access to the East and West tank farm dike areas. The OM&S LO is the control point for access into the OM&S tank farm dike areas. All personnel are required to obtain authorization from the OM&S LO prior to accessing the tank farm dike areas.

## Normal Entry

1. A Job Loss Analysis (JLA) will be conducted before any work in dike areas when receiving product.
2. If work is to be performed within a tank farm dike area, an appropriate work permit must be obtained from the OM&S LO or Project SPOC.
3. If work in the tank farm dike area includes the use of equipment or tools that may generate a source of ignition, hot work permit requirements must be met in accordance with SA-38.
4. OM&S LO will verify crude oil distribution in tank farm by utilizing PI and or contact OCC to assess which relief tank is active and crude flowing into a designated tank farm dike area.
5. The OM&S LO will contact P/V CRO to communicate work activities before a permit is issued.



## Operating Procedure Oil Movements and Storage

Title: East and West Tank Farm Access Control

Number: OMS-3.14

Page: 2 of 3

Revision: 1

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6. OM&S Tank Farm Operator conducts gas testing and report time with results to OM&S LO/Project SPOC for work permits documentation.
7. The tank farm dike areas will be considered safe to enter with a permit and continuous gas monitoring.
8. When the permit is issued, personnel entering the tank farm dike area are required to wear FRC as the outermost clothing, hard hat, safety glasses, and steel toed boots. Personnel must also observe continuous gas monitoring.
9. Tank farm access points will be posted identifying the requirement for notifying OM&S Tank Farm Operator on radio channel 7 prior to entry of dike area.
10. Personnel working in the tank farm dike areas or tank access platforms are required to monitor one of the following channels (2, 7, 8, 9, 11, or 15) to allow for emergency or special instructions from the P/V CRO.
11. Vehicles and equipment authorized in the tank farm dike areas will be attended at all times while in operation. Park vehicles and place equipment away from areas where tank vents are located.
12. Normal snow removal and operator rounds do not require a work permit.

### Evacuation

1. In case of a tank venting, the P/V CRO will initiate an "ALL CALL" on channels 2, 7, 8, 9, 11, 15, and 16 to evacuate the tank farm. The P/V CRO will activate the tank farm evacuation alarm.
2. Personnel working in the tank farm dike areas during an evacuation must shutdown all sources of ignition and all electrical equipment.
3. Personnel must exit the dike areas and proceed to their designated rally point.
4. OM&S LO and Project SPOC must ensure all personnel have evacuated the area and notify P/V CRO when clear.
5. P/V CRO may deactivate the evacuation alarm at this time.

### Re-Entry after Evacuation

1. The OM&S LO, Project SPOC, OM&S Tank Farm Operator or Safety Specialist must perform a gas test prior to the authorization of re-entry to the tank farm dike area.
2. If the gas test results are negative, the OM&S LO or Project SPOC will request the P/V CRO to announce an "ALL CLEAR" on channels 2, 7, 8, 9, 11, 15, and 16.
3. Work in the tank farm dike areas may resume under the "Normal Entry" criteria.

**Note:** Access control guidelines for East and West Tank Farm during "Scheduled Venting/Purging" of tanks for cleaning and returning to service are covered under PVR-1.95, Purging a Crude Tank.

### END OF PROCEDURE



## Operating Procedure Oil Movements and Storage

Title: East and West Tank Farm Access Control

Number: OMS-3.14

Page: 3 of 3

Revision: 1

Effective Date: 12/13/07

### References

- SA-38, Corporate Safety Manual
  - Requirement 1.15 - Work Permit System
- PVR-1.95, Purging a Crude Tank
- 2007 Tank Farm Daily Operations & Maintenance Risk Assessment

### Records

None

### Revision History

| Revision | Date     | Revision Detail  |
|----------|----------|--|
| 1        | 12/13/07 | Replaces terminal procedure O-21.01.05. Make improvements. |
| 0        | 11/21/07 | Initial issue.   |

**PROBABLE VIOLATION 5:  
Tank 190 Vent Fire**

**PHMSA POSITION**

**Pertinent Regulation:**

49 CFR §195.402 Procedures Manual for Operations, Maintenance and Emergencies

- (a) General. Each operator shall prepare and follow for each pipeline system a manual of written procedures for conducting normal operations and maintenance activities and handling abnormal operations and emergencies. This manual shall be reviewed at intervals not exceeding 15 months, but at least once each calendar year, and appropriate changes made as necessary to insure that the manual is effective. This manual shall be prepared before initial operations of a pipeline system commence, and appropriate parts shall be kept at locations where operations and maintenance activities are conducted.
- (c) Maintenance and normal operations. The manual required by paragraph (a) of this section must include procedures for the following to provide safety during maintenance and normal operations.
- (c)(11) Minimizing the likelihood of accidental ignition of vapors in areas near facilities identified under paragraph (c)(4) of this section where the potential exists for the presence of flammable liquids or gases.

**Findings:**

Alyeska's manual of written procedures for minimizing the likelihood of accidental ignition of vapors is grossly deficient. Alyeska's Hot Work Permit procedures, SA-38, 1.15, as referenced in OM-1, improperly allow task workers to serve as their own fire watches. A fire watch needs to be located away from the work area so that he can observe the work being done and the surrounding area for signs of fire, and alert the proper authorities should a fire occur. The task worker performing maintenance inside the Tank 190 containment area at the time of the fire was serving as his own fire watch. He was working in a covered area and was unable to see or hear events happening in the surrounding area.

Alyeska OM-1, Section 4.6.1 procedures treat all TAPS facilities as facilities located in areas that would require an immediate response under §195.402(c)(4).

**Proposed Civil Penalty:**

Regarding Item 5, the Compliance Officer has reviewed the circumstances and supporting documentation involved in the probable violation(s) and has recommended that Alyeska be preliminarily assessed a civil penalty in the amount of \$42,000.00.

**Proposed Compliance Order:**

In regard to Item Number 5 of the Notice pertaining to Alyeska's deficient procedures for preventing accidental ignition, Alyeska shall modify its Hot Work Permit procedures, SA-38, 1.15, to require an independent fire watch that is someone other than the "task worker," and require that the fire watch be located sufficiently away from the work area so that he can observe the work being done and the surrounding areas for signs of fire, and alert the proper authorities should a fire occur. Within sixty (60) days of receipt of the Final Order Alyeska shall develop and implement these procedures.

**ALYESKA PIPELINE SERVICE COMPANY'S RESPONSE**

**Summary:**

Alyeska Pipeline Service Company (Alyeska) does not contest PHMSA's finding that Alyeska's Hot Work Permit procedures, SA-38, 1.15, allowed task workers to serve as their own fire watches. Alyeska has updated the procedure accordingly. Alyeska requests that the finding and proposed compliance order be withdrawn, and PHMSA reconsider the proposed civil penalty.

**Discussion:**

Alyeska has revised SA-38, Section 1.15, Work Permit System, 1.15.4.8.1, Fire Watch Duties to state "The Fire Watch is a dedicated individual whose sole function is to perform fire watch duties." In addition, this sub-section states "The Fire Watch will not perform any other duties that will take their attention away from the area where the hot work is performed, and remain in a location that allows immediate communication with the individual(s) performing hot work for instant communication if a fire breaks out."

In addition, this section contains the following note: "More than one fire watch shall be required if combustible materials that could be ignited by the hot work operation cannot be directly observed by a single fire watch (e.g., in adjacent rooms where hot work is done on a common wall; multiple floors, in a tank farm where Fire Watch cannot see all equipment from where they are positioned)." These revisions were made on May 7, 2007, as a result of the root cause incident investigation conducted after the vent fire. (See Exhibit 12).

With regard to Finding 5, Alyeska respectfully requests that the finding and the proposed compliance order be withdrawn, as Alyeska's procedures have been updated to comply with 49 CFR §195.402(c)(11) and do not need to be amended. With regard to the proposed civil penalty, Alyeska requests that PHMSA reconsider the proposed civil penalty.

**SUPPORTING DOCUMENTATION**

Exhibit 12 - SA-38, Section 1.15 Work Permit System, Ed. 5, Rev. 26, October 27, 2007



## Revision History

|  |                                 |
|--|---------------------------------|
| <b>Document Title</b><br>Corporate Safety Manual | <b>Document Number</b><br>SA-38 |
|--|---------------------------------|

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|--|-----------------------|-------------------------|
| <b>Approved by Andrew W. Postishek, Safety &amp; Industrial Health Manager</b>   |                       |                         |
| <b>Current Revision Summary</b>  | <b>Ed. 5, Rev. 26</b> | <b>October 27, 2007</b> |
| <p>The following revisions were made:</p> <ul style="list-style-type: none"> <li>• Requirement 1.23, "Incident Verbal Notification Program": Complete rewrite, removing incident investigation information. Information regarding investigations now resides in <i>LPS-001, Loss Prevention System</i>.</li> </ul> |                       |                         |

|  |                       |                     |
|--|-----------------------|---------------------|
| <b>Approved by Andrew W. Postishek, Safety &amp; Industrial Health Manager</b>   |                       |                     |
| <b>Current Revision Summary</b>  | <b>Ed. 5, Rev. 25</b> | <b>May 24, 2007</b> |
| <p>The following revisions were made:</p> <ul style="list-style-type: none"> <li>• Requirement 1.15, "Work Permit System":             <ul style="list-style-type: none"> <li>– Subsection 1.15.4.1, "Issuing Authority"</li> <li>– Subsection 1.15.5.6, "Hot Work Permit, Form 0162"</li> <li>– Figure 8, Form 0162, Hot Work Permit</li> </ul> </li> </ul> |                       |                     |

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| <b>Approved by Andrew W. Postishek, Safety &amp; Industrial Health Manager</b>  |                       |                    |
| <b>Revision Summary</b>   | <b>Ed. 5, Rev. 24</b> | <b>May 7, 2007</b> |
| <p>The following revisions were made:</p> <ul style="list-style-type: none"> <li>• Requirement 1.7, "Flame Resistant Clothing," has been revised in Section 1.7.6.5, specifically relating to raingear.</li> <li>• Requirement 1.15, "Work Permit System," has been revised in Section 1.15.4.8., "Fire Watch"; 1.15.4.9, "Equipment Watch"; 1.15.5.1.1, "Permit Closeout"; "1.15.5.6, "Hot Work Permit"; and the updated Form 0162, Hot Work Permit, has been inserted.</li> <li>• Requirement 1.19, "Welding and Flame Cutting," has been revised in Section 1.19.6.2, "Fire Watch."</li> <li>• Requirement 2.1, "Portable Industrial Heaters," has been revised in Section 2.1.4.1, "Fire Watch"; 2.1.4.2, "Equipment Watch"; and 2.1.4.3, "Heaters."</li> </ul> |                       |                    |

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| <b>Document Title</b><br>Corporate Safety Manual | <b>Document Number</b><br>SA-38 |
|--|---------------------------------|

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|---|-----------------------|--------------------|
| <b>Approved by Andrew W. Postishek, Safety &amp; Industrial Health Manager</b>  |                       |                    |
| <b>Revision Summary</b>   | <b>Ed. 5, Rev. 23</b> | <b>May 3, 2007</b> |
| <p>The following revision was made:</p> <ul style="list-style-type: none"> <li>Requirement 1.23, "Incident Reporting/Investigation Program": Complete rewrite, incorporating LPS to bring all Alyeska business process, programs, and management systems into alignment.</li> </ul> |                       |                    |

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|---|-----------------------|----------------------|
| <b>Approved by Andrew W. Postishek, Safety &amp; Industrial Health Manager</b>  |                       |                      |
| <b>Revision Summary</b>   | <b>Ed. 5, Rev. 22</b> | <b>March 2, 2007</b> |
| <p>The following revisions were made:</p> <ul style="list-style-type: none"> <li>1.15, "Work Permit System," has been revised in Section 1.15.5.6, "Hot Work Permit, Form 0162."</li> <li>1.16, "Energy Isolation," has been revised in Section 1.16.8.2, "Pressure Energy Sources (Pressure or Vacuum)."</li> <li>3.9, "Alyeska Employee Safety Committee Program," has been revised in Section 3.9.5.2, "TAPS Employees," and 3.9.5.3, "Safety Committees."</li> <li>Checked and updated references in the above requirements.</li> </ul> |                       |                      |

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|--|-----------------------|--------------------------|
| <b>Approved by Andrew W. Postishek, Safety &amp; Industrial Health Manager</b>   |                       |                          |
| <b>Revision Summary</b>  | <b>Ed. 5, Rev. 21</b> | <b>December 29, 2006</b> |
| <p>The following revisions were made:</p> <ul style="list-style-type: none"> <li>1.13, "Hand Protection," has been revised to include a new section on use of Kevlar® gloves.</li> <li>1.15, "Work Permit System," has been revised in Section 1.15.5.6, "Hot Work Permit, Form 0162." <i>Form 0162, Hot Work Permit</i> has also been revised.</li> <li>2.6, "Excavation Safety," has been revised in Section 2.6.6., "Work Permits," and Section 2.6.7.2, "Excavation."</li> </ul> |                       |                          |

|  |                       |                         |
|--|-----------------------|-------------------------|
| <b>Approved by Andrew W. Postishek, Safety &amp; Industrial Health Manager</b>   |                       |                         |
| <b>Revision Summary</b>  | <b>Ed. 5, Rev. 20</b> | <b>December 1, 2006</b> |
| <p>The following revisions were made:</p> <ul style="list-style-type: none"> <li>1.7, "Flame Resistant Clothing," has been completely revised to include ARC flash, factors for wearing rangear, and service life.</li> <li>1.12, "Electrical Equipment," has been completely revised to include ARC flash PPE and labeling, and training requirements.</li> </ul> |                       |                         |

## 1.15 Work Permit System

### 1.15.1 Purpose

The purpose of the Work Permit System is to coordinate, authorize, and communicate work that must be controlled, in order to minimize the hazards associated with operating, maintaining, and modifying the Trans Alaska Pipeline System (TAPS).

### 1.15.2 Scope

Personnel who have not received the requisite training in the Work Permit System and proper orientation shall not be allowed to issue permits for such work at Alyeska facilities. All personnel who perform work that must be controlled, or who issue permits for such work at Alyeska facilities must become familiar with the Work Permit System outlined in this requirement. There may be additional procedures that have been adopted by local supervision.

### 1.15.3 References

- *FG-78, Operating, Maintenance & Emergency Plans for the Fuel Gas Pipeline*
- *MR-48, Trans-Alaska Pipeline Maintenance and Repair Manual*
- *SA-38, Corporate Safety Manual*
- SAF/075, "Work Permit Writing and Issuing"
- 29 CFR 1910, "Occupational Safety and Health Standards"
- 29 CFR 1926, "Safety and Health Standards for Construction"
- 33 CFR 154, "Facilities Transferring Oil or Hazardous Material in Bulk"
- International Safety Guide for Oil Tankers and Terminals (ISGOTT)
- National Fire Protection Association (NFPA) 70E, "Standard for Electrical Safety in the Workplace"

### 1.15.4 Titles and Responsibilities

Position titles may vary within operating areas. At times there may be more than one individual within a position category. When this occurs, responsibilities will be assigned to specific individuals and communicated to all affected parties prior to initiating work. It is everyone's responsibility to prevent an operation from being performed which has the potential to cause the area or equipment to become unsafe while the permit is in effect. Consideration should be given to simultaneous operations. For the purposes of this requirement, the following are example titles of positions and their defined responsibilities:

#### NOTES

1. The SERVS Support Contractor may administer all Work Permit activities germane to their activities at the SERVS base and warehouse complex.
2. The Maintenance Coordinators will issue and administer Pipeline Work Permits.

#### 1.15.4.1 Issuing Authority

This title refers to the First-Line Supervisor, Area Operator, Lead Operator, Control Room Operator, Maintenance Coordinator, or SPOC who has issued the permit.

Responsibilities include but are not limited to:

1. Conduct detailed job discussions, assessment of hazards, and establish precautions needed to accomplish tasks safely.
2. Ensure that all necessary Gas Tests for explosive, flammable, toxic, or other hazardous conditions are conducted.
3. Ensure that all hollow spaces, cavities, or containers are tested and vented to permit the escape of air or gases prior to preheating, burning/cutting, or welding.
4. Ensure safe conditions for the permit and necessary tests are performed for flammable and/or other hazardous conditions immediately prior to the start of Hot Work, or when work is suspended or stopped for cause.
5. Inform Fire Watch of potential fire hazards.
6. Complete the permit questions and checklist to ensure compliance with all items specific to the work.
7. Assure that Energy Isolation is followed consistent with SA-38, Requirement 1.16. "Energy Isolation."
8. Notify all personnel and areas affected by the permit.
9. Notify local supervision, if required by them, that a permit has been requested.

#### NOTE

Hot work permit issuing authority exceptions shall be:

- First line supervisor approves and signs hot work permits in classified areas for
  - Welding / torch cutting / grinding / open flame
  - Standing equipment e.g. tioga heaters, light plants, compressors, pump skids.
- Sr. Management endorsement is required for
  - Standing equipment operated in a classified area over one 12 hour work shift e.g. tioga heaters, light plants, compressors, pump skids.
  - Endorsement shall be annotated on back of permit in designated section.

Hot work permit delegation shall only occur in the absence of the issuing authority.

- Supervisor delegation shall be delegated upward
- Sr. Management delegation will be as outlined in the Approval Authority Guide

10. Ensure that the Person Doing Work knows the location of the nearest communications equipment and applicable safety devices.
11. Sign as authorizing authority for Permits after ensuring that the permit is correctly filled out.
12. A copy of the Work Permit shall be posted in the Control Room or held in clearly marked holders at the place of issue.
13. Advise relief person of any outstanding permits.

14. Verify that all permit closeout sections have been completed.

#### **1.15.4.2 First-Line Supervisor**

This title refers to the Alyeska Supervisor responsible for all work which is permitted under their jurisdiction.

Responsibilities include but are not limited to:

1. Assure Issuing Authority has received appropriate permit training (SAF/075) and has thorough knowledge of the area in which work is being permitted.
2. Ensure that provisions of the Work Permit System are adhered to in their area of responsibility (such as reviewing permits, reviewing work in progress, conducting self-assessments, etc.).
3. Assist Issuing Authority through detailed job discussions, assessment of hazards, and establishment of precautions needed to accomplish tasks safely.
4. Approve requests (may be verbal) for when and where weekly Unit Work Permits may be issued.
5. Conduct Safety Stand-downs as required.
6. Communicate additional local controls as required.

#### **1.15.4.3 Area Operator**

This title refers to the person responsible for the area in which the work is permitted.

Responsibilities include but are not limited to:

1. Acknowledge the permit and awareness of work to be performed by signing Work Permits. In the event the technician cannot sign the permit, technician may verbally acknowledge via radio or telephone. This proxy will be noted by the Issuing Authority who will mark the box "Verbally" on the permit endorsement block designated for the Area Operations Technician and print the Area Operator's name.
2. Perform or verify that all necessary Gas Tests for explosive, flammable, toxic, or other hazardous conditions are conducted.
3. Ensure/Verify combustible materials are covered or removed when cutting, grinding, or welding within a 35 foot area.
4. Perform Energy Isolation per SA-38, Requirement 1.16, "Energy Isolation."
5. Check availability and suitability of fire extinguishing equipment and/or other applicable safety equipment in the area.
6. Monitor the work, as appropriate, to ensure the conditions of the permit are not changing.
7. Inspect the work site to re-verify permit requirements after any interruption/emergency has occurred, prior to resuming work.
8. After work has been completed, at the discretion of the Area Operator, the permitted work area will be checked for safe conditions.
9. Advise the relief operator of any permits still in effect.

#### 1.15.4.4 Person Doing Work

This title refers to the person to whom the permit is issued.

##### NOTE

Permits will only be issued to personnel actually performing the permitted work. Endorsing multiple permits for multiple crews will not be allowed.

Responsibilities include but are not limited to:

1. Read and understand the conditions of the issued Work Permit before starting the job, and signify this understanding by signing the Work Permit.
2. Post the working copy of the permit at the work area or with the Person Doing Work if it cannot be posted at the job site.
3. Comply with Energy Isolation per SA-38, Requirement 1.16, "Energy Isolation."
4. Inspect the area to confirm safe working conditions. Ensure that the work crew knows location and operation of nearest safety and communication equipment such as telephone, fire alarm, emergency communication system, fire extinguisher, safety shower, first aid kit, etc., before starting work.
5. Be constantly aware of conditions in the immediate work area, and be ready to stop work if conditions change. Do not resume work without approval of the Issuing Authority.
6. Notify Issuing Authority when the job is suspended, completed, or when planned work or conditions change. Include such information as condition of site, any hazards, and scope of work completed.
7. Maintain radio contact with Issuing Authority or CRO/area operator as required.
8. Advise other workers of any special precautions or conditions pertaining to the job.
9. Appropriately mark the Closeout or Extension section of all issued Work Permits.
10. Clean up and secure the work area after completion of work each shift. At the end of the shift or upon completion of the work, whichever comes first, notify the Area Operator, return the permit to the Control Room or designated location, and complete the Closeout portion on the permit copy of record.

#### 1.15.4.5 Initiator/Requester

This title refers to the person who initiates or requests the permit. This may or may not be the Person Doing Work.

#### 1.15.4.6 On-site Supervisor of Person(s) Performing the Work

Responsibilities include but are not limited to:

1. Ensure that the necessary permit has been obtained before starting the job.
2. Assist operations/maintenance personnel through detailed job discussions and by helping to establish precautions needed to accomplish tasks safely.
3. Provide input to and help accomplish the safety requirements as outlined in the "special instructions" box of the permit.

4. Ensure that all endorsements have been made and that the Issuing Authority fully understands the job scope for which the permit was issued.
5. Monitor work for compliance to safety requirements.

#### **1.15.4.7 Alyeska or Contractor Safety Specialist**

It is recognized that not all work sites have full time Safety Department coverage, or that Safety Department availability may be minimal. When this is the case, Safety Department responsibilities, as required by the standards of this Safety Manual, may be delegated to a First Line Supervisor or other qualified person with documentation and concurrence.

When requested by Issuing Authority, the Alyeska or Contractor Safety Specialist shall provide an independent assessment of the work area and sign in the Special Instructions box of the permit for any work involving:

1. Burning, grinding, or welding (excluding buffing) on any process piping that has not been depressurized, blinded, or purged.
2. Piping used exclusively in seawater, water service, steam, and for which there is no potential for explosive atmospheres or hydrocarbon entry into the system are excluded from this requirement.

For Confined Spaces, the Alyeska or Contractor Safety Specialist shall:

1. Verify that the space has been properly prepared.
2. Test for oxygen content, flammability, toxic materials, and/or other hazards prior to entry.
3. After the permit is signed by the Issuing Authority, make the first entry into the enclosure, if necessary, to complete the safety evaluation.
4. Coordinate any special precautions and sign the Confined Space Entry Permit.
5. Endorse all Hot Work Permits that might affect the Confined Space Entry Permit, as requested by the Issuing Authority.
6. Participate in the identification of any restrictions that may be imposed on the permit.
7. Ensure the appropriate Alyeska procedures are followed and documented when re-classifying a confined space.
8. Determine whether or not a retrieval system or other emergency response equipment is required at the job site.
9. Assist operations personnel with preparation of Hot Work Permit in conjunction with Confined Space Entry Permit by inspecting job sites, conducting Gas Tests, helping to determine area classification, assigning Confined Space classifications, and reviewing special instructions on permits as needed.
10. Assist supervision in assessing the training of all responsible parties to ensure they can safely perform their work according to permit requirements.
11. Perform safety functions when requested for special projects outside normal routine work (e.g., tank entry, turnarounds, live tie-ins, etc.).
12. Assist in establishing special precautions when warranted by work activities.

#### 1.15.4.8 Fire Watch

A dedicated Fire Watch shall be required,

1. In a classified area, when operating standing equipment, such as heaters, vac-trucks, air compressors, light plants, Heath mixer motors, and other fuel-fire equipment such as hot water/steam pressure washers, etc.
2. Regardless of the NEC classification, whenever activities are conducted such as flame cutting, grinding, welding, soldering, chipping, brazing, dry abrasive blasting, any open flame activities (e.g., burning),
3. And, when any of the following conditions exist:
  - a. Appreciable amounts of combustible material (e.g., building materials) closer than 35 feet away from the point of operation.
  - b. Appreciable amounts of combustibles which can be easily ignited by sparks.
  - c. Wall or floor openings within a 35 foot radius exposure to combustible material in adjacent areas, including concealed spaces in walls or floors.
  - d. Combustible materials that are adjacent to the opposite side of metal partitions, walls, ceilings, or roofs and can possibly be ignited by conduction or radiation.
  - e. Hot Work - A fire watch must be maintained for a minimum of thirty (30) minutes after completion of hot work to detect and extinguish smoldering fires.

##### 1.15.4.8.1 Fire Watch Duties

The Fire Watch is a dedicated individual whose sole function is to perform fire watch duties.

#### NOTE

More than one fire watch shall be required if combustible materials that could be ignited by the hot work operation cannot be directly observed by a single fire watch (e.g., in adjacent rooms where hot work is done on a common wall; multiple floors, in a tank farm where Fire Watch cannot see all equipment from where they are positioned).

The Fire Watch will not perform any other duties that will take their attention away from the area where the hot work is performed. Fire Watch must:

1. On the Hot Work Permit, line 8, ensure Fire Watch Name is printed and includes signature with badge number.
2. Ensure that safe conditions are maintained during the hot work by monitoring conditions to ensure that a fire or explosion does not occur as a result of the work being performed.
3. Inspect area of responsibility to ensure there are no leaks or spills from equipment.
4. Be aware of the inherent hazards involved in hot work and ensure that no condition arises, or actions taken, that will lead to a hazardous situation in the hot work area.
5. Keep at least (2) 20-lb. ABC fire extinguishers at the hot work location.
6. Have means of emergency communication (two-way radio) to report a fire or other emergency.
7. Know the facility protocol to report a fire or other emergency situations.
8. Be familiar with the surrounding facilities to sound an alarm in the event of a fire.

9. Be trained in the facility fire safety procedures and the use of fire extinguishing equipment to extinguish fires only when safe to do so.
10. Remain in a location that allows immediate communication with the individual(s) performing hot work for instant communication if a fire breaks out.
11. Watch for fires in all exposed areas for a minimum of thirty (30) minutes (including lunch and break times) after hot work is completed.
12. Be trained to shut down equipment in case of fire or emergency.

**NOTE**

Due to the complexity of the work or project (i.e., various types of work - classified and non-classified, size of work site, multiple locations, etc.), more than one Fire Watch and Equipment Watch(s) may be required.

**NOTE**

Fire Watch requirements may apply for portable industrial heaters and other heat-producing equipment as per SA-38.

#### **1.15.4.9 Equipment Watch**

An Equipment Watch(s) is required any time there is standing equipment, a piece of fixed or mobile equipment such as: heaters, fuel-fired equipment such as hot water/steam pressure washers, vac-trucks, Heath mixer motors, etc., that pose an ignition hazard in a non-classified area or outside the area where any of the following conditions exist:

1. Appreciable amounts of combustible material (e.g., building materials) closer than 35 feet away from the point of operation.
2. Appreciable amounts of combustibles which can be easily ignited by sparks.
3. Wall or floor openings within a 35 feet radius exposure to combustible material in adjacent areas, including concealed spaces in walls or floors.
4. Combustible materials that are adjacent to the opposite side of metal partitions, walls, ceilings, or roofs and could possibly be ignited by conduction or radiation.
5. Hot Work - A fire watch must be maintained for a minimum of thirty (30) minutes after completion of hot work to detect and extinguish smoldering fires.

#### **1.15.4.9.1 Equipment Watch Duties**

1. Ensure safe conditions and good house-keeping are maintained.
2. Inspect area of responsibility to ensure equipment has required drip pans, no leaks or spills.
3. Know the facility protocol to report emergency situations.
4. Be trained to shut down equipment in case of emergency.

**NOTE**

Due to the complexity of the work or project (i.e., various types of work - classified and non-classified, size of work site, multiple locations, etc.), more than one Fire Watch and Equipment Watch(s) may be required.

**1.15.5 Work Permit Requirements**

The Work Permit System shall apply to all work activities that must be controlled and is performed by Alyeska personnel, contractors, and sub-contractors at all work locations under Alyeska supervisory responsibility, including pipeline road crossings, Mainline Valve locations, pipeline underground cooling systems, vaults, etc.

1. When completing or initiating the Unit, Hot and Pipeline Work Permits, all fields of the permit must be addressed except as follows:
  - a. *Extended To* and *Extending Shift*, if there was no extension.
  - b. If a Gas Test was checked *No* or *N/A* then no Gas Test Results need be filled in.
  - c. *Check Boxes* not checked that refer to Page 2 need not be marked.
  - d. Optional boxes unless directed there by the permit.
  - e. The use of *N/A*, *No*, *None*, or a slash (/ or -) is acceptable to indicate that a response was considered.
2. For Excavations, any work of a civil nature, or activities that require lifting over the mainline pipe, the local MC should be consulted prior to issuing the permit.
3. For Confined Space Entry Permit, and Work Permits associated with the Confined Space Entry Permit, all fields must be completed.
4. For line-by-line instructions on using the forms of the Work Permit System, see training module SAF/075, which is available from Alyeska Training and Development or on the Alyeska A-Net.

**1.15.5.1 Time Limits**

**1.15.5.1.1 Duration, Extension and Closeout of Permits**

1. Duration

All permits should be issued to cover the period required to accomplish the tasks, subject to these limitations:

- a. Unit and Hot Work Permits are normally issued not to exceed one work shift (12 hours) although, with proper endorsement by incoming personnel, they may be extended through the next shift.
- b. Confined Space Entry Permits shall be issued for only one work shift (12 hours) and shall not be extended.
- c. Unit Work Permits may be issued for a maximum of one week as determined by supervision.
- d. Pipeline Work Permits may be issued for the required time to complete a defined job task.

## 2. Extension

Permits will be in effect until job completion and may be extended past the work shift consistent with the following Work Permit Extension Requirements:

- a. Extensions may only be issued to original Persons Doing Work.
- b. A new Gas Test must be performed if required on original issuance.
- c. There is no change in work scope.
- d. Signatures by incoming Issuing Authority and Persons Doing work are required on all permit copies.

### NOTE

If work deviates from the permit as issued, a new permit must be issued.

## 3. Permit Closeout

- a. Permits should be returned to Issuing Authority as soon as work is complete or at end of shift, whichever comes first.
- b. The Person Doing Work will complete applicable Permit Closeout section.
- c. Post Work Comments shall be entered on the permit by the person completing that work and will include such things as: work complete, any precautions, information to be passed on, can equipment be operated or not operated, does oil need to be added, etc.

### 1.15.5.2 Stop Work

It is the responsibility of all personnel working on Alyeska property or facilities to stop any work that may be unsafe to personnel, equipment, facilities or the environment.

If work is stopped for unsafe conditions, applicable permits shall be cancelled.

If work is stopped for tank venting, all work shall be suspended until the work area is deemed safe. The permit can then be used again and work resumed.

### 1.15.5.3 Facility Map

Each Alyeska location/facility which issues Work Permits must prepare a Facility Map which clearly identifies all United States Coast Guard (USCG) regulated areas (Valdez Marine Terminal and SERVS) and NEC-defined Class I areas.

This map will be used by all Work Permit Issuing Authorities as a guide to determine whether or not a Work Permit is mandated by regulation. Additional areas may be identified on the local Facility Map, as conditions or requirements change, which would also require a Work Permit before any work is to be authorized. Managerial discretion could also authorize this Facility Map to include:

1. Laydown areas where daily, weekly, or longer permits are authorized.
2. Approved "shop" areas where Work Permits are not normally required.
3. Other pertinent markings local management may desire, such as approved smoking areas.
4. Areas where PSM regulations apply.

5. In the absence of such a facility/location map, all areas will be considered to be controlled areas and appropriate Work Permits must be issued.
6. Area maps may be given to contractors to assist them in identifying areas that require Work Permit authorizations.

#### 1.15.5.4 Verbal Approval of Work Permits at Remote Locations on the Pipeline

The procedures for verbal approvals are intended to enhance the ability to perform work in a timely manner.

When Work Permits at remote locations are issued and/or closed using verbal, telephone/radio, or faxed communication between the Issuing Authority and Person Doing Work, the following requirements must be met:

1. A completed and signed copy of the current Work Permit, in compliance with all sections of this requirement, must be kept by the Issuing Authority.
2. An additional copy of the Work Permit must be posted at the work site.
3. At the completion of the work, the Work Permit must be returned in a timely manner to the Issuing Authority. The copy of the Work Permit at the work site may be signed as closed, and faxed, delivered, or mailed to the Issuing Authority.

#### 1.15.5.5 Unit Work Permit, Form 0161

The Unit Work Permit is used to authorize work activities that must be controlled but do not present any of the hazards normally associated with Hot Work in Classified Areas or Confined Spaces.

A Unit Work Permit is appropriate for the following types of work:

1. Activities that require work related to general maintenance.
2. Activities that will not introduce a source of ignition into NEC Class I areas.
3. Activities that require Hot Work in unclassified areas.
4. Activities that require work on energized electrical systems over 50 volts in unclassified areas. The following criteria apply:
  - a. Persons Doing Work shall follow safe work practice guidelines per NFPA 70E, and OSHA 29 CFR 1910 and/or 29 CFR 1926.
  - b. Certain cabinets containing control voltages and equipment may also contain exposed terminals that are at a higher potential. Jobs that require electrical rework or personnel exposure in such cabinets may require additional safeguards, including additional qualified persons present as needed for job safety.
  - c. Only qualified persons may work on electrical circuits or equipment that have not been deenergized.
  - d. Two qualified persons may be required when working on electrical circuits or equipment.

#### NOTE

Bench work in a shop which is deemed not to be hazardous does not typically require a Work Permit.

5. Excavations, to be performed per guidelines in Requirement 2.6, "Excavation Safety."
6. The use of Ionization Radiation Equipment, The following criteria will apply:
  - a. Positive communication must be established with Area Operator and the operations supervisor whenever radiographic equipment is used within a 500 yard radius of any facility having ultraviolet (UV) detection/fire suppression systems.
  - b. The radiography crew must submit a work plan to the operations supervisor, or designee, describing the area where the radiography equipment will be used, what is to be examined, the expected duration of the job, the Single Point of Contact (SPOC), which areas will be restricted, and any other information that is pertinent to the work.
    - 1) Radiation emitting devices must remain locked within the transporting vehicle while preparations for testing are made. The radiography crew must notify the Area Operator before each test is made, and again after each test is completed.
    - 2) Applicable warning signs must be posted around the work area to warn personnel of radiation hazards.
    - 3) UV detection/fire suppression systems in the affected work area must be bypassed or shielded when radiography is performed at Pump Stations (refer to Requirement 3.4, "Bypassed, Damaged, or Inoperable Safety Devices").
    - 4) Positive communication must be established with Area Operator and the operations supervisor whenever radiographic work is completed and UV/fire suppression systems must be returned to normal conditions as per the work plan.
7. Activities that require work in a Permit Required Confined Space Reclassified as Non-Permit Required Confined Space.
8. Pressure testing.
9. Cutting, grinding, welding in non-classified areas.

#### **1.15.5.6 Hot Work Permit, Form 0162**

The Hot Work Permit is used to authorize activities that require special controls to prevent fire or explosion. The Hot Work Standard minimizes the potential of fire or explosion in Classified Areas by requiring a Hot Work Permit.

#### NOTE

Hot work permit issuing authority exceptions shall be:

- First line supervisor approves and signs hot work permits in classified areas for
  - Welding / torch cutting / grinding / open flame
  - Standing equipment e.g. tioga heaters, light plants, compressors, pump skids.
- Sr. Management endorsement is required for
  - Standing equipment operated in a classified area over one 12 hour work shift e.g. tioga heaters, light plants, compressors, pump skids.
  - Endorsement shall be annotated on back of permit in designated section.

Hot work permit delegation shall only occur in the absence of the issuing authority.

- Supervisor delegation shall be delegated upward
- Sr. Management delegation will be as outlined in the Approval Authority Guide

- The Issuing Authority may also require Hot Work Permits based on Facility Operating Guidelines above and beyond SA-38 requirements. Area Classification drawings and applicable industry standards will define the Classified Areas.

#### 1.15.5.6.1 Hot Work Permit Activities

A Hot Work Permit is required but not limited to the following activities:

1. Open flame, burning, grinding or welding, within 75 feet of a Classified Area,
2. The use of non-intrinsically safe electrical tools and instruments in a Classified Area,
3. Work on electrical circuits including the opening of explosion proof boxes or junction boxes in a Classified Area,
4. Activities that require work on energized electrical systems in Classified Areas. The following criteria apply:
  - a. The area shall be Gas Tested.
  - b. Person Doing Work shall follow safe work practice guidelines per NFPA 70E, and OSHA 29 CFR 1910 and/or 29 CFR 1926.
  - c. Certain cabinets containing control voltages and equipment may also contain exposed terminals that are at a higher potential. Jobs that require electrical rework or personnel exposure in such cabinets may require additional safeguards, including additional qualified persons present as need for job safety.
  - d. Only qualified persons may work on electrical circuits or equipment that have not been deenergized.
  - e. Two qualified persons may be required when working on electrical circuits or equipment.
5. The use of spark producing devices in a Classified Area.
6. Hot work on portable and mobile containers which contain or have contained flammable or combustible materials.
7. Impedance thawing.
8. Hot Taps, to be performed per guidelines in SA-38, and/or MR-48 and FG-78.

9. Heaters, cranes, and other equipment that may introduce an ignition source, operating within a Classified Area.

#### **1.15.5.6.2 Hot Work Permit Precautions**

The following precautions shall be taken before a Hot Work Permit is issued (if applicable):

1. Ensure compliance with SA-38, Requirement 1.19, "Welding and Flame Cutting," especially Section 1.19.6.4, has been met.
2. Ensure compliance with SA-38, Requirement 1.16, "Energy Isolation," has been met.
3. A qualified person (Alyeska or contractor) will Gas Test the area prior to the start of the work, and if necessary, continue to periodically Gas Test all affected work areas
4. A trained person has been assigned as the designated Fire Watch.
5. Fire and gas detection systems have been isolated or by-passed.
6. Fire blankets and catch basins are in place.
7. Appropriate fire extinguishing equipment is available at the work site.
8. Adequate ventilation has been established.
9. Sumps and drains have been checked and adequately covered within 35 feet of the work site.
10. Welding machines are grounded as close to the welding point as practical.

#### **1.15.5.7 Blinding and Variance Guidelines**

Alyeska's blinding requirements are provided in SA-38, Requirement 1.16, "Energy Isolation," and are consistent with the blinding requirements of the Alaska Safety Handbook with the exception that Alyeska does not require a variance for double block and bleed, including Hot Work Permits.

By Government regulation, variances are not permitted for a double block and bleed in lieu of blinding for cutting or welding on used drums, barrels, tanks, or other containers. Any pipelines or connections to the drum, tank, or vessel must be disconnected or blinded.

In cases of Hot Work on equipment which has been used exclusively in seawater, water service, or steam, and if there is no potential for explosive atmospheres or hydrocarbon entry into the system, a single block, as a minimum, is acceptable for isolation in lieu of blinding.

#### **1.15.5.8 Hot Work in Confined Spaces**

When arc welding is to be suspended (unattended for a period of 30 minutes or more), all electrodes must be removed from the holders and carefully located so that accidental contact cannot occur, and the machine must be disconnected from the power source or turned off.

When gas welding or burning/cutting, the torch valves must be closed and the gas supply to the torch positively shut off at some point outside the Confined Space whenever the torch is not being used for a substantial period of time (unattended for a period of 30 minutes or more). Where practical, the torch and hose must also be removed from the Confined Space.

When welding or burning/cutting is being performed in a Confined Space, the gas cylinders and welding machines must be left outside of the Confined Space.

After welding operations are completed, the welder must mark the hot metal or provide some other means of warning other workers.

Local exhaust and/or general ventilation must be adequate to keep the amount of toxic fumes, gases, or dust below maximum allowable concentrations or appropriate respiratory protection must be utilized.

#### 1.15.5.9 Hot Work on Berths 1, 3, 4, and 5 at VMT

The *International Safety Guide for Oil Tankers and Terminals* defines Hot Work In Uncontrolled Loading Areas as work involving sources of ignition or temperatures sufficiently high enough to cause the ignition of a flammable gas mixture. This includes any work requiring the use of welding, burning, or soldering equipment, blow torches, some power driven tools, portable electrical equipment that is not intrinsically safe or contained within an approved explosion-proof housing, sandblasting, or internal combustion engines. The USCG will issue an annual welding and Hot Work Permit to the Terminal in accordance with *33 CFR 154*, "Facilities Transferring Oil or Hazardous Material in Bulk." No further notifications to the USCG are required for work being performed on the berth relating to Hot Work. Specific rules are as follows:

1. Hot Work will not be performed on a berth with a tanker alongside during uncontrolled loading.
2. Hot Work will not be performed in the construction dock area when a tanker is alongside Berth 1 during transfer operations.
3. Hot Work will not be performed at the tug dock or in the immediate onshore area when a tanker is alongside Berth 3 during transfer operations.
4. Approved Hot Work may be permitted with a tanker alongside if all of the following conditions are met:
  - a. Hot Work is limited to the removal of explosion-proof housing in a Classified Area to set, adjust, or inspect electrical connections and limit switches.
  - b. Crude loading is vapor controlled. Hot Work will be immediately discontinued if tanker venting or any unusual conditions occur with the operation of the vapor control system.
  - c. Continuous Gas Testing during work.
  - d. Signs have been placed at the 100-foot mark to show clear delineation.

#### NOTE

Notifications to the USCG may be necessary for Hot Work on the berths.

#### 1.15.5.10 Confined Space Entry Permit, Form 0160

The Confined Space Entry Permit is used to authorize entry into Confined Spaces meeting one or more of the following characteristics:

1. Contains or has the potential to contain a hazardous atmosphere.
2. Contains a material that has the potential for engulfing an entrant.
3. Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross section.
4. Contains any other recognized serious safety or health hazards.

Examples of Confined Spaces that may meet the criteria identified above include, but are not limited to, process vessels, process towers, tanks, sumps, pits, sewers, compartments with a manhole, valve pits, well cellars, pipelines.

Authorization of work requires an appropriate Unit, Pipeline, or Hot Work Permit. In no circumstances will a Confined Space Entry Permit be issued without an appropriate Work Permit. All associated permits must be attached to the Confined Space Entry Permit on completion of work and retained for one year.

#### **1.15.5.10.1 General Considerations**

1. The Confined Space Entry Permit does not authorize work to begin. The Confined Space Entry Permit must be accompanied by an appropriate Unit, Pipeline, or Hot Work Permit.
2. When personnel entry into a Confined Space is required, job specific procedures shall be followed. The procedure will outline the draining, blinding, cleaning, inspection, and work to be performed. The detail of the procedure will be appropriate to the job. The procedure will be reviewed by all involved departments (including FSIH) before work begins.
3. Prior to entry, the contents and hazards of the Confined Space shall be identified. Whenever possible, tanks, vessels, and piping shall be cleaned by water washing, flushing, or steaming. Cleaning by hand should be limited to final cleanup unless no other cleaning process is feasible.
4. Prior to the entry, all potential sources of energy affecting the space shall be isolated in accordance with SA-38, Requirement 1.16, "Energy Isolation." Furthermore, vapor barriers are not an acceptable substitute for blinds.
5. All connecting lines to the vessel shall be physically disconnected and misaligned or blinded at a point as near to the space as possible.
6. Adequate ventilation shall be maintained in the Confined Space throughout the entry operation. All ventilation equipment shall be bonded and grounded. If mechanical ventilation is used, it must be located in such a manner that it will not introduce contaminants such as gas or toxic vapors. In addition, it should be placed in such a manner that it will not prevent egress from the space. This will be verified by the Alyeska or Contractor Safety Specialist, and monitored by the Attendant.
7. An area outside the Confined Space shall be made available for decontamination as necessary.
8. Retrieval Systems shall be used whenever an entrant enters a Confined Space, as covered by this section, unless the retrieval system would increase the overall risk of the entry or would not contribute to the rescue of the entrant. Alyeska or Contractor Safety Specialist will determine when retrieval systems are appropriate.
9. Any Hot Work in a location that may affect the Confined Space shall be approved by all parties who have authorized and signed the Confined Space Entry Permit. Any Hot Work performed within the boundaries of a Confined Space shall be approved and signed off by Alyeska or Contractor Safety Specialist and should be referenced to the Hot Work Section under the "Hot Work in a Confined Space" section. A Gas Test of the atmosphere where the Hot Work is to take place shall be performed by the Alyeska or Contractor Safety Specialist and documented on the Hot Work Permit.
10. Permit-Required Confined Space entry safety plans/procedures must be approved by the local supervisor, entry supervisor, and Field Safety representative and available at the entrance to the Permit-Required Confined Space.

11. The Entry Supervisor may add entrants to the Confined Space Entry Permit or Badge Board.
12. The Confined Space Entry Permit and associated written plans shall be kept for one year and reviewed annually for improvements in the Permit-required Confined Space Entry Program.

#### **1.15.5.11 Pipeline Work Permit, Form 3459**

The Pipeline Work Permit is used by Pump Station Maintenance Coordinators (MCs) to ensure that work being performed along the TAPS and Fuel Gas Line (FGL) Pipeline Right-of-Way (ROW) is performed safely and efficiently without damage or danger to personnel, property, or the environment. Pipeline Work Permits are also utilized for work activities outside the pipeline ROW such as River Training Structures, Oil Spill Containment Sites, airfields, and Operation Material Sites (OMS), and typically require additional agency permitting.

Along the ROW are fenced compounds that contain Remote Gate Valves (RGVs), Ledeen Operated Check Valves, Metering Facilities, Cathodic Protection Sites, and Main Line Refrigeration Units (MLRs). Unit, Hot, or Confined Space Entry Permits issued by the local Pump Station normally control any activities within these fenced areas.

The Maintenance Coordinator (MC) or designee has the authority and responsibility to control all activities in their area of responsibility along the pipeline ROW or off-ROW sites as indicated above by use of the Pipeline Work Permit or by verbal agreement with the Person Doing the Work, as appropriate.

In some cases, a line wide Pipeline Work Permit may be written by the Issuing Authority after coordination with the individual MCs responsible for each area along the pipeline. In this case, the Person Doing Work must notify the local MC in advance prior to commencing work in the MC's area, and interface with the MC to review details of the line wide Pipeline Work Permit prior to starting work. Upon completion of work in the local MC's area, the Person Doing Work notifies both the local MC and Issuing Authority. The Issuing Authority is responsible for permit closeout and notification to the individual MCs when the work associated with the line wide Pipeline Work Permit is complete.

The Pipeline Work Permit is appropriate for the following types of work:

1. Any new pipeline or pipeline modification work, to include Nondestructive Testing (NDT).
2. New construction adjacent to the pipeline.
3. Earthwork/excavation activities, mineral mining, hauling/stockpiling activities.
4. Cathodic Protection surveys, fuel gas line leak surveys.
5. Test station, monitor rod, fence, sign, gate installation, or repairs.
6. Bridge, above ground pipeline (support and insulation), transition and animal crossing maintenance, or repairs.
7. Routine workpad maintenance, river training structures, low water crossing, and culvert construction or repair.
8. Pigging activities, mainline valve DOT function tests, mainline valve winterization.
9. Work by third parties on the ROW.

#### NOTE

Other work permits as appropriate (Unit, Hot, or Confined Space Entry) shall apply to all locations that are covered by the Pipeline Work Permit.

#### 1.15.5.11.1 Pipeline Right-of-Way (ROW)

The pipeline ROW is described as the land within which Alyeska is authorized to install, operate, and maintain the pipeline. For Work Permit activities, this term is normally used to identify any work area within the TAPS and Fuel Gas Line ROW that is outside of the Pump Station and Valdez Terminal perimeter fences.

1. The width of the ROW measured from pipeline centerline is variable and dependent on the landowner, pipeline mode, facilities, and special burial modifications. ROW widths for the pipeline on private lands vary on a case-by-case basis. Typical ROW widths are described in *MR-48* and *FG-78*.
2. Work that will result in the disturbance of vegetation outside the existing workpad embankment even though the work site may be within the formal pipeline ROW requires written landowner approval.

#### 1.15.5.11.2 General Considerations

Reference *MR-48, Trans-Alaska Pipeline Maintenance and Repair Manual* or *FG-78, Operating, Maintenance & Emergency Plans for the Fuel Gas Pipeline*, for minimum approved requirements, guidelines, and methods to cover the majority of pipeline maintenance and repair situations.

### 1.15.6 Definitions

#### 1.15.6.1 NEC Class I Area

An area in which flammable gases or vapors are or may be present in the air, in quantities sufficient to produce explosive or ignitable mixtures.

#### 1.15.6.2 Hot Work In Berth Uncontrolled Loading Areas

Work involving sources of ignition or temperatures sufficiently high enough to cause the ignition of a flammable gas mixture. This includes any work requiring the use of welding, burning, or soldering equipment, blow torches, some power driven tools, portable electrical equipment that is not intrinsically safe or contained within an approved explosion-proof housing, sandblasting, or internal combustion engines. (As defined by the *International Safety Guide for Oil Tankers and Terminals*.)

#### 1.15.6.3 Work Permit

A control document that authorizes all work activities that must be controlled in a particular area. Specific federal and state regulations require written Work Permits for Permit-Required Confined Space Entry and for cutting, grinding, and welding operations. Alyeska has also elected to use Unit Work Permits (*Form 0161*), Hot Work Permits (*Form 0162*), and Pipeline Work Permits (*Form 3459*) to control other types of work as well.

### **1.15.7 Training**

N/A

### **1.15.8 Records**

Quality and Non-Quality records driven by this requirement in SA-38 are listed below.

For record retention requirements, see the *Records Retention Schedule* located under Resources\Records\Records Retention Schedule on the A-Net.

#### **1.15.8.1 Quality Records**

- *Form 0160, Confined Space Entry Permit* (including all associated work permits)

#### **1.15.8.2 Non-Quality Records**

- *Form 0144, Work Log*
- *Form 0161, Unit Work Permit*
- *Form 0162, Hot Work Permit*
- *Form 3459, Pipeline Work Permit*

**PROBABLE VIOLATION 6:  
Tank 190 Vent Fire**

**PHMSA POSITION**

**Pertinent Regulation:**

49 CFR §195.402 Procedures Manual for Operations, Maintenance and Emergencies

- (a) General. Each operator shall prepare and follow for each pipeline system a manual of written procedures for conducting normal operations and maintenance activities and handling abnormal operations and emergencies. This manual shall be reviewed at intervals not exceeding 15 months, but at least once each calendar year, and appropriate changes made as necessary to insure that the manual is effective. This manual shall be prepared before initial operations of a pipeline system commence, and appropriate parts shall be kept at locations where operations and maintenance activities are conducted.
- (c) Maintenance and normal operations. The manual required by paragraph (a) of this section must include procedures for the following to provide safety during maintenance and normal operations.
  - (3) Operating, maintaining, and repairing the pipeline system in accordance with each of the requirements of this subpart...
  - (c)(11) Minimizing the likelihood of accidental ignition of vapors in areas near facilities identified under paragraph (c)(4) of this section where the potential exists for the presence of flammable liquids or gases.

**Findings:**

Alyeska failed to follow its written procedures as required by §195.402(a) when it failed to isolate the work area inside the containment area of Tank 190 from flammable vapors before starting work. Alyeska is required by §195.402(c)(11) to have procedures for minimizing the likelihood of accidental ignition of vapors. Alyeska has three (3) separate written procedures that required it to isolate energy sources, including flammable vapors. These procedures include the SA-38 Hot Work Permit Procedures; the procedures in the Hot Work Permit for Tank 190 maintenance; and the Manual for Operations, Maintenance and Emergencies (OM-1). Isolation of the Tank 190 relief valves would have prevented crude oil from entering Tank 190, the release of crude oil vapors into the work area, and the January 6, 2006 fire.

Alyeska OM-1, Section 4.6.1 procedures treat all TAPS facilities as facilities located in areas that would require an immediate response under §195.402(c)(4).

**Proposed Civil Penalty:**

Regarding Item 6, the Compliance Officer has reviewed the circumstances and supporting documentation involved in the probable violation(s) and has recommended that Alyeska be preliminarily assessed a civil penalty in the amount of \$100,000.00.

**ALYESKA PIPELINE SERVICE COMPANY'S RESPONSE**

**Summary:**

Alyeska Pipeline Service Company (Alyeska) respectfully disagrees with PHMSA's finding that Alyeska failed to follow energy isolation procedures for the work area around Tank 190 on January 6, 2007. Alyeska requests that the finding be withdrawn, and PHMSA reconsider the proposed civil penalty.

**Discussion:**

There were no specific energy isolation procedures for tank farms at the time of the vent fire. There were no requirements to isolate the relief system prior to conducting work in the tank farms. Alyeska required the work to be done in compliance with SA-38 and the Hot Work Permit. OM-1 references that Alyeska must have procedures for safe isolation of jurisdictional equipment. Alyeska maintains these procedures in SA-38.

The procedure in place on January 6, 2007 was the requirement to follow SA-38, Work Permit System. This included, for work in the tank farm, taking a gas test to monitor for vapors. (See Exhibit 13). There was no requirement in Alyeska's procedures, in place on January 6, 2007, that required the operator to block in the relief valves. Alyeska does not regularly block in the relief valves for maintenance work because the function of those valves is to protect the mainline piping from over pressuring. The valves are designed to fail open.

A Hot Work Permit was issued on January 6, 2007 for the work in the tank farm. In the box marked Special Instructions, the permit requires: heater operation per SA-38 2.1; ½ hour fire watch; FRC PPE; EI Open breaker for 20T0 (MCC 4702 RJ2); lock and tag Danger; and Use DMM to verify no energy at J Box. (See Exhibit 14). This permit complied with the requirements of SA-38. Alyeska followed its written procedures for this work.

With regard to Finding 6, Alyeska respectfully requests that the finding be withdrawn. With regard to the proposed civil penalty, Alyeska requests that PHMSA reconsider the proposed civil penalty.

**SUPPORTING DOCUMENTATION**

Exhibit 13 - SA-38, Section 1.15, Work Permits, Ed. 5, Rev. 21, December 29, 2006

Exhibit 14 - Hot Work Permit H-010607-18, dated January 6, 2007

## 1.15 Work Permit System

### 1.15.1 Purpose

The purpose of the Work Permit System is to coordinate, authorize, and communicate work that must be controlled, in order to minimize the hazards associated with operating, maintaining, and modifying the Trans Alaska Pipeline System (TAPS).

### 1.15.2 Scope

Personnel who have not received the requisite training in the Work Permit System and proper orientation shall not be allowed to issue permits for such work at Alyeska facilities. All personnel who perform work that must be controlled, or who issue permits for such work at Alyeska facilities must become familiar with the Work Permit System outlined in this requirement. There may be additional procedures that have been adopted by local supervision.

### 1.15.3 References

- *FG-78, Operating, Maintenance & Emergency Plans for the Fuel Gas Pipeline*
- *MR-48, Trans-Alaska Pipeline Maintenance and Repair Manual*
- *SA-38, Corporate Safety Manual*
- SAF/075, "Work Permit Writing and Issuing"
- 29 CFR 1910, "Occupational Safety And Health Standards"
- 29 CFR 1926, "Safety And Health Standards For Construction"
- 33 CFR 154, "Facilities Transferring Oil Or Hazardous Material In Bulk"
- International Safety Guide for Oil Tankers and Terminals (ISGOTT)
- National Fire Protection Association (NFPA) 70E, "Standard for Electrical Safety Requirements for Employee Workplaces"

### 1.15.4 Titles and Responsibilities

Position titles may vary within operating areas. At times there may be more than one individual within a position category. When this occurs, responsibilities will be assigned to specific individuals and communicated to all affected parties prior to initiating work. It is everyone's responsibility to prevent an operation from being performed which has the potential to cause the area or equipment to become unsafe while the permit is in effect. Consideration should be given to simultaneous operations. For the purposes of this requirement, the following are example titles of positions and their defined responsibilities:

#### NOTES

1. The SERVS Support Contractor may administer all Work Permit activities germane to their activities at the SERVS base and warehouse complex.
2. The Maintenance Coordinators will issue and administer Pipeline Work Permits.

#### **1.15.4.1 Issuing Authority**

This title refers to the First-Line Supervisor, Area Operator, Lead Operator, Control Room Operator, Maintenance Coordinator, or SPOC who has issued the permit.

Responsibilities include but are not limited to:

1. Conduct detailed job discussions, assessment of hazards, and establish precautions needed to accomplish tasks safely.
2. Ensure that all necessary Gas Tests for explosive, flammable, toxic, or other hazardous conditions are conducted.
3. Ensure that all hollow spaces, cavities, or containers are tested and vented to permit the escape of air or gases prior to preheating, burning/cutting, or welding.
4. Ensure safe conditions for the permit and necessary tests are performed for flammable and/or other hazardous conditions immediately prior to the start of Hot Work, or when work is suspended or stopped for cause.
5. Inform Fire Watch of potential fire hazards.
6. Complete the permit questions and checklist to ensure compliance with all items specific to the work.
7. Assure that Energy Isolation is followed consistent with SA-38, 1.16, "Energy Isolation."
8. Notify all personnel and areas affected by the permit.
9. Notify local supervision, if required by them, that a permit has been requested.
10. Ensure that the Person Doing Work knows the location of the nearest communications equipment and applicable safety devices.
11. Sign as authorizing authority for Permits after ensuring that the permit is correctly filled out.
12. A copy of the Work Permit shall be posted in the Control Room or held in clearly marked holders at the place of issue.
13. Advise relief person of any outstanding permits.
14. Verify that all permit closeout sections have been completed.

#### **1.15.4.2 First-Line Supervisor**

This title refers to the Alyeska Supervisor responsible for all work which is permitted under their jurisdiction.

Responsibilities include but are not limited to:

1. Assure Issuing Authority has received appropriate Permit Training (SAF/075) and has thorough knowledge of the area in which work is being permitted.
2. Ensure that provisions of the Work Permit System are adhered to in their area of responsibility (such as reviewing permits, reviewing work in progress, conducting self-assessments, etc.).
3. Assist Issuing Authority through detailed job discussions, assessment of hazards, and establishment of precautions needed to accomplish tasks safely.
4. Approve requests (may be verbal) for when and where weekly Unit Work Permits may be issued.

5. Conduct Safety Stand-downs as required.
6. Communicate additional local controls as required.

#### 1.15.4.3 Area Operator

This title refers to the person responsible for the area in which the work is permitted.

Responsibilities include but are not limited to:

1. Acknowledge the permit and awareness of work to be performed by signing Work Permits. In the event the technician cannot sign the permit, technician may verbally acknowledge via radio or telephone. This proxy will be noted by the Issuing Authority who will mark the box "Verbally" on the permit endorsement block designated for the Area Operations Technician and print the Area Operator's name.
2. Perform or verify that all necessary Gas Tests for explosive, flammable, toxic, or other hazardous conditions are conducted.
3. Ensure/Verify combustible materials are covered or removed when cutting, grinding, or welding within a 35 foot area.
4. Perform Energy Isolation per SA-38, 1.16, "Energy Isolation."
5. Check availability and suitability of fire extinguishing equipment and/or other applicable safety equipment in the area.
6. Monitor the work, as appropriate, to ensure the conditions of the permit are not changing.
7. Inspect the work site to re-verify permit requirements after any interruption/emergency has occurred, prior to resuming work.
8. After work has been completed, at the discretion of the Area Operator, the permitted work area will be checked for safe conditions.
9. Advise the relief operator of any permits still in effect.

#### 1.15.4.4 Person Doing Work

This title refers to the person to whom the permit is issued.

**Note**

Permits will only be issued to personnel actually performing the permitted work. Endorsing multiple permits for multiple crews will not be allowed.

Responsibilities include but are not limited to:

1. Read and understand the conditions of the issued Work Permit before starting the job, and signify this understanding by signing the Work Permit.
2. Post the working copy of the permit at the work area or with the Person Doing Work if it cannot be posted at the job site.
3. Comply with Energy Isolation per SA-38, 1.16, "Energy Isolation."
4. Inspect the area to confirm safe working conditions. Ensure that the work crew knows location and operation of nearest safety and communication equipment such as telephone, fire alarm, emergency communication system, fire extinguisher, safety shower, first aid kit, etc., before starting work.

5. Be constantly aware of conditions in the immediate work area, and be ready to stop work if conditions change. Do not resume work without approval of the Issuing Authority.
6. Notify Issuing Authority when the job is suspended, completed, or when planned work or conditions change. Include such information as condition of site, any hazards, and scope of work completed.
7. Maintain radio contact with Issuing Authority or CRO/area operator as required.
8. Advise other workers of any special precautions or conditions pertaining to the job.
9. Appropriately mark the Closeout or Extension section of all issued Work Permits.
10. Clean up and secure the work area after completion of work each shift. At the end of the shift or upon completion of the work, whichever comes first, notify the Area Operator, return the permit to the Control Room or designated location, and complete the Closeout portion on the permit copy of record.

#### **1.15.4.5 Initiator/Requester**

This title refers to the person who initiates or requests the permit. This may or may not be the Person Doing Work.

#### **1.15.4.6 On-site Supervisor of Person(s) Performing the Work**

Responsibilities include but are not limited to:

1. Ensure that the necessary permit has been obtained before starting the job.
2. Assist operations/maintenance personnel through detailed job discussions and by helping to establish precautions needed to accomplish tasks safely.
3. Provide input to and help accomplish the safety requirements as outlined in the "special instructions" box of the permit.
4. Ensure that all endorsements have been made and that the Issuing Authority fully understands the job scope for which the permit was issued.
5. Monitor work for compliance to safety requirements.

#### **1.15.4.7 Alyeska or Contractor Safety Specialist**

It is recognized that not all work sites have full time Safety Department coverage, or that Safety Department availability may be minimal. When this is the case, Safety Department responsibilities, as required by the standards of this Safety Manual, may be delegated to a First Line Supervisor or other qualified person with documentation and concurrence.

When requested by Issuing Authority, the Alyeska or Contractor Safety Specialist shall provide an independent assessment of the work area and sign in the Special Instructions box of the permit for any work involving:

1. Burning, grinding, or welding (excluding buffing) on any process piping that has not been depressurized, blinded, or purged.
2. Piping used exclusively in seawater, water service, steam, and for which there is no potential for explosive atmospheres or hydrocarbon entry into the system are excluded from this requirement.

For Confined Spaces, the Alyeska or Contractor Safety Specialist shall:

1. Verify that the space has been properly prepared.
2. Test for oxygen content, flammability, toxic materials, and/or other hazards prior to entry.
3. After the permit is signed by the Issuing Authority, make the first entry into the enclosure, if necessary, to complete the safety evaluation.
4. Coordinate any special precautions and sign the Confined Space Entry Permit.
5. Endorse all Hot Work Permits that might affect the Confined Space Entry Permit, as requested by the Issuing Authority.
6. Participate in the identification of any restrictions that may be imposed on the permit.
7. Ensure the appropriate Alyeska procedures are followed and documented when re-classifying a confined space.
8. Determine whether or not a retrieval system or other emergency response equipment is required at the job site.
9. Assist operations personnel with preparation of Hot Work Permit in conjunction with Confined Space Entry Permit by inspecting job sites, conducting Gas Tests, helping to determine area classification, assigning Confined Space classifications, and reviewing special instructions on permits as needed.
10. Assist supervision in assessing the training of all responsible parties to ensure they can safely perform their work according to permit requirements.
11. Perform safety functions when requested for special projects outside normal routine work (e.g., tank entry, turnarounds, live tie-ins, etc.).
12. Assist in establishing special precautions when warranted by work activities.

#### **1.15.4.8 Fire Watch**

A Fire Watch shall be required, regardless of the NEC classification, whenever flame cutting, grinding, or welding activities are conducted in locations where a fire might develop or where any of the following conditions exist:

1. Appreciable amounts of combustible material (e.g., building materials) are closer than 35 feet away from the flame cutting, grinding, or welding work.
2. Appreciable amounts of combustibles are more than 35 feet away from the flame cutting, grinding, or welding work, but could be easily ignited by sparks.
3. Wall or floor openings within a 35 feet radius expose combustible material in adjacent areas, including concealed spaces in walls or floors.
4. Combustible materials are adjacent to the opposite side of metal partitions, walls, ceilings, or roofs and could possibly be ignited by conduction or radiation.

Fire Watches at Alyeska facilities shall have appropriate fire extinguishing equipment, a hand held two-way radio readily available, and be trained in the use of both. They shall be familiar with procedures and equipment for sounding an alarm in the event of a fire.

Fire Watches shall remain alert and watch for indications of fires in all exposed areas and shall extinguish fires when obviously within the capacity of the equipment available, and if possible, sound the alarm prior to attempting extinguishment.

A fire watch shall be maintained for AT LEAST ONE HALF HOUR after completion of flame cutting, grinding, or welding operations to detect and extinguish possible smoldering fires.

**Note**

Fire Watch requirements may apply for portable industrial heaters and other heat-producing equipment as per SA-38.

### 1.15.5 Work Permit Requirements

The Work Permit System shall apply to all work activities that must be controlled and is performed by Alyeska personnel, contractors, and sub-contractors at all work locations under Alyeska supervisory responsibility, including pipeline road crossings, Mainline Valve locations, pipeline underground cooling systems, vaults, etc.

1. When completing or initiating the Unit, Hot and Pipeline Work Permits, all fields of the permit must be addressed except as follows:
  - a. *Extended To* and *Extending Shift*, if there was no extension.
  - b. If a Gas Test was checked *No* or *N/A* then no Gas Test Results need be filled in.
  - c. *Check Boxes* not checked that refer to Page 2 need not be marked.
  - d. Optional boxes unless directed there by the permit.
  - e. The use of *N/A*, *No*, *None*, or a slash (/ or -) is acceptable to indicate that a response was considered.
2. For Excavations, any work of a civil nature, or activities that require lifting over the mainline pipe, the local MC should be consulted prior to issuing the permit.
3. For Confined Space Entry Permit, and Work Permits associated with the Confined Space Entry Permit, all fields must be completed.
4. For line-by-line instructions on using the forms of the Work Permit System, see training module SAF/075, which is available from Alyeska Training and Development or on the Alyeska A-Net.

#### 1.15.5.1 Time Limits

##### 1.15.5.1.1 Duration, Extension and Closeout of Permits

1. Duration

All permits should be issued to cover the period required to accomplish the tasks, subject to these limitations:

- a. Unit and Hot Work Permits are normally issued not to exceed one work shift (12 hours) although, with proper endorsement by incoming personnel, they may be extended through the next shift.
- b. Confined Space Entry Permits shall be issued for only one work shift (12 hours) and shall not be extended.
- c. Unit Work Permits may be issued for a maximum of one week as determined by supervision.

d. Pipeline Work Permits may be issued for the required time to complete a defined job task.

## 2. Extension

Permits will be in effect until job completion and may be extended past the work shift consistent with the following Work Permit Extension Requirements:

- a. Extensions may only be issued to original Persons Doing Work.
- b. A new Gas Test must be performed if required on original issuance.
- c. There is no change in work scope.
- d. Signatures by incoming Issuing Authority and Persons Doing work are required on all permit copies.

### Note

If work deviates from the permit as issued, a new permit must be issued.

## 3. Permit Closeout

- a. Permits should be returned to Issuing Authority as soon as work is complete or at end of shift, whichever comes first.
- b. The Person Doing Work will complete applicable Permit Closeout section.
- c. Post Work Comments should include such things as, can equipment be run, does oil need to be added, any precautions, work complete, etc.

### 1.15.5.2 Stop Work

It is the responsibility of all personnel working on Alyeska property or facilities to stop any work that may be unsafe to personnel, equipment, facilities or the environment.

If work is stopped for unsafe conditions, applicable permits shall be cancelled.

If work is stopped for tank venting, all work shall be suspended until the work area is deemed safe. The permit can then be used again and work resumed.

### 1.15.5.3 Facility Map

Each Alyeska location/facility which issues Work Permits must prepare a Facility Map which clearly identifies all United States Coast Guard (USCG) regulated areas (Valdez Marine Terminal and SERVS) and NEC-defined Class I areas.

This map will be used by all Work Permit Issuing Authorities as a guide to determine whether or not a Work Permit is mandated by regulation. Additional areas may be identified on the local Facility Map, as conditions or requirements change, which would also require a Work Permit before any work is to be authorized. Managerial discretion could also authorize this Facility Map to include:

1. Laydown areas where daily, weekly, or longer permits are authorized.
2. Approved "shop" areas where Work Permits are not normally required.
3. Other pertinent markings local management may desire, such as approved smoking areas.
4. Areas where PSM regulations apply.

5. In the absence of such a facility/location map, all areas will be considered to be controlled areas and appropriate Work Permits must be issued.
6. Area maps may be given to contractors to assist them in identifying areas that require Work Permit authorizations.

#### **1.15.5.4 Verbal Approval of Work Permits at Remote Locations on the Pipeline**

The procedures for verbal approvals are intended to enhance the ability to perform work in a timely manner.

When Work Permits at remote locations are issued and/or closed using verbal, telephone/radio, or faxed communication between the Issuing Authority and Person Doing Work, the following requirements must be met:

1. A completed and signed copy of the current Work Permit, in compliance with all sections of this requirement, must be kept by the Issuing Authority.
2. An additional copy of the Work Permit must be posted at the work site.
3. At the completion of the work, the Work Permit must be returned in a timely manner to the Issuing Authority. The copy of the Work Permit at the work site may be signed as closed, and faxed, delivered, or mailed to the Issuing Authority.

#### **1.15.5.5 Unit Work Permit, Form 0161**

The Unit Work Permit is used to authorize work activities that must be controlled but do not present any of the hazards normally associated with Hot Work in Classified Areas or Confined Spaces.

A Unit Work Permit is appropriate for the following types of work:

1. Activities that require work related to general maintenance.
2. Activities that will not introduce a source of ignition into NEC Class I areas.
3. Activities that require Hot Work in unclassified areas.
4. Activities that require work on energized electrical systems over 50 volts in unclassified areas. The following criteria apply:
  - a. Persons Doing Work shall follow safe work practice guidelines per NFPA 70E, and OSHA 29 CFR 1910 and/or 29 CFR 1926.
  - b. Certain cabinets containing control voltages and equipment may also contain exposed terminals that are at a higher potential. Jobs that require electrical rework or personnel exposure in such cabinets may require additional safeguards, including additional qualified persons present as needed for job safety.
  - c. Only qualified persons may work on electrical circuits or equipment that have not been deenergized.
  - d. Two qualified persons may be required when working on electrical circuits or equipment.

**Note**

Bench work in a shop which is deemed not to be hazardous does not typically require a Work Permit.

5. Excavations, to be performed per guidelines in 2.6, "Excavation Safety."
6. The use of Ionization Radiation Equipment, The following criteria will apply:
  - a. Positive communication must be established with Area Operator and the operations supervisor whenever radiographic equipment is used within a 500 yard radius of any facility having ultraviolet (UV) detection/fire suppression systems.
  - b. The radiography crew must submit a work plan to the operations supervisor, or designee, describing the area where the radiography equipment will be used, what is to be examined, the expected duration of the job, the Single Point of Contact (SPOC), which areas will be restricted, and any other information that is pertinent to the work.
    - 1) Radiation emitting devices must remain locked within the transporting vehicle while preparations for testing are made. The radiography crew must notify the Area Operator before each test is made, and again after each test is completed.
    - 2) Applicable warning signs must be posted around the work area to warn personnel of radiation hazards.
    - 3) UV detection/fire suppression systems in the affected work area must be bypassed or shielded when radiography is performed at Pump Stations (refer to Section 3.4, "Bypassed, Damaged, or Inoperable Safety Devices").
    - 4) Positive communication must be established with Area Operator and the operations supervisor whenever radiographic work is completed and UV/fire suppression systems must be returned to normal conditions as per the work plan.
7. Activities that require work in a Permit Required Confined Space Reclassified as Non-Permit Required Confined Space.
8. Pressure testing.
9. Cutting, grinding, welding in non-classified areas.

#### **1.15.5.6 Hot Work Permit, Form 0162**

The Hot Work Permit is used to authorize activities that require special controls to prevent fire or explosion. The Hot Work Standard minimizes the potential of fire or explosion in Classified Areas by requiring a Hot Work Permit. The Issuing Authority may require Hot Work Permits based on Facility Operating Guidelines. Area Classification drawings and applicable industry standards will define the Classified Areas.

##### **1.15.5.6.1 Hot Work Permit Activities**

A Hot Work Permit is required but not limited to the following activities:

1. Open flame, burning, grinding or welding, within 75 feet of a Classified Area,
2. The use of non-intrinsically safe electrical tools and instruments in a Classified Area,
3. Work on electrical circuits including the opening of explosion proof boxes or junction boxes in a Classified Area,
4. Activities that require work on energized electrical systems in Classified Areas. The following criteria apply:
  - a. The area shall be Gas Tested.

- b. Person Doing Work shall follow safe work practice guidelines per NFPA 70E, and OSHA 29 CFR 1910 and/or 29 CFR 1926.
  - c. Certain cabinets containing control voltages and equipment may also contain exposed terminals that are at a higher potential. Jobs that require electrical rework or personnel exposure in such cabinets may require additional safeguards, including additional qualified persons present as need for job safety.
  - d. Only qualified persons may work on electrical circuits or equipment that have not been deenergized.
  - e. Two qualified persons may be required when working on electrical circuits or equipment.
5. The use of spark producing devices in a Classified Area.
  6. Hot work on portable and mobile containers which contain or have contained flammable or combustible materials.
  7. Impedance thawing.
  8. Hot Taps, to be performed per guidelines in SA-38, and/or MR-48 and FG-78.
  9. Heaters, cranes, and other equipment that may introduce an ignition source, operating within a Classified Area.

#### **1.15.5.6.2 Hot Work Permit Precautions**

The following precautions shall be taken before a Hot Work Permit is issued (if applicable):

1. Ensure compliance with SA-38, 1.19, "Welding and Flame Cutting," especially Section 1.19.6.4, has been met.
2. Ensure compliance with SA-38, 1.16, "Energy Isolation," has been met.
3. A qualified person (Alyeska or contractor) will Gas Test the area prior to the start of the work, and if necessary, continue to periodically Gas Test all affected work areas
4. A trained person has been assigned as the designated Fire Watch.
5. Fire and gas detection systems have been isolated or by-passed.
6. Fire blankets and catch basins are in place.
7. Appropriate fire extinguishing equipment is available at the work site.
8. Adequate ventilation has been established.
9. Sumps and drains have been checked and adequately covered within 35 feet of the work site.
10. Welding machines are grounded as close to the welding point as practical.

#### **1.15.5.7 Blinding and Variance Guidelines**

Alyeska's blinding requirements are provided in SA-38, 1.16, "Energy Isolation," and are consistent with the blinding requirements of the Alaska Safety Handbook with the exception that Alyeska does not require a variance for double block and bleed, including Hot Work Permits.

By Government regulation, variances are not permitted for a double block and bleed in lieu of blinding for cutting or welding on used drums, barrels, tanks, or other containers. Any pipelines or connections to the drum, tank, or vessel must be disconnected or blinded.

In cases of Hot Work on equipment which has been used exclusively in seawater, water service, or steam, and if there is no potential for explosive atmospheres or hydrocarbon entry into the system, a single block, as a minimum, is acceptable for isolation in lieu of blinding.

#### **1.15.5.8 Hot Work in Confined Spaces**

When arc welding is to be suspended (unattended for a period of 30 minutes or more), all electrodes must be removed from the holders and carefully located so that accidental contact cannot occur, and the machine must be disconnected from the power source or turned off.

When gas welding or burning/cutting, the torch valves must be closed and the gas supply to the torch positively shut off at some point outside the Confined Space whenever the torch is not being used for a substantial period of time (unattended for a period of 30 minutes or more). Where practical, the torch and hose must also be removed from the Confined Space.

When welding or burning/cutting is being performed in a Confined Space, the gas cylinders and welding machines must be left outside of the Confined Space.

After welding operations are completed, the welder must mark the hot metal or provide some other means of warning other workers.

Local exhaust and/or general ventilation must be adequate to keep the amount of toxic fumes, gases, or dust below maximum allowable concentrations or appropriate respiratory protection must be utilized.

#### **1.15.5.9 Hot Work on Berths 1, 3, 4, and 5 at VMT**

The *International Safety Guide for Oil Tankers and Terminals* defines Hot Work In Uncontrolled Loading Areas as work involving sources of ignition or temperatures sufficiently high enough to cause the ignition of a flammable gas mixture. This includes any work requiring the use of welding, burning, or soldering equipment, blow torches, some power driven tools, portable electrical equipment that is not intrinsically safe or contained within an approved explosion-proof housing, sandblasting, or internal combustion engines. The USCG will issue an annual welding and Hot Work Permit to the Terminal in accordance with *33 CFR 154*, "Facilities Transferring Oil Or Hazardous Material In Bulk." No further notifications to the USCG are required for work being performed on the berth relating to Hot Work. Specific rules are as follows:

1. Hot Work will not be performed on a berth with a tanker alongside during uncontrolled loading.
2. Hot Work will not be performed in the construction dock area when a tanker is alongside Berth 1 during transfer operations.
3. Hot Work will not be performed at the tug dock or in the immediate onshore area when a tanker is alongside Berth 3 during transfer operations.
4. Approved Hot Work may be permitted with a tanker alongside if all of the following conditions are met:
  - a. Hot Work is limited to the removal of explosion-proof housing in a Classified Area to set, adjust, or inspect electrical connections and limit switches.
  - b. Crude loading is vapor controlled. Hot Work will be immediately discontinued if tanker venting or any unusual conditions occur with the operation of the vapor control system.
  - c. Continuous Gas Testing during work.

- d. Signs have been placed at the 100-foot mark to show clear delineation.

**Note**

Notifications to the USCG may be necessary for Hot Work on the berths.

#### **1.15.5.10 Confined Space Entry Permit, Form 0160**

The Confined Space Entry Permit is used to authorize entry into Confined Spaces meeting one or more of the following characteristics:

1. Contains or has the potential to contain a hazardous atmosphere.
2. Contains a material that has the potential for engulfing an entrant.
3. Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross section.
4. Contains any other recognized serious safety or health hazards.

Examples of Confined Spaces that may meet the criteria identified above include, but are not limited to, process vessels, process towers, tanks, sumps, pits, sewers, compartments with a manhole, valve pits, well cellars, pipelines.

Authorization of work requires an appropriate Unit, Pipeline, or Hot Work Permit. In no circumstances will a Confined Space Entry Permit be issued without an appropriate Work Permit. All associated permits must be attached to the Confined Space Entry Permit on completion of work and retained for one year.

##### **1.15.5.10.1 General Considerations**

1. The Confined Space Entry Permit does not authorize work to begin. The Confined Space Entry Permit must be accompanied by an appropriate Unit, Pipeline, or Hot Work Permit.
2. When personnel entry into a Confined Space is required, job specific procedures shall be followed. The procedure will outline the draining, blinding, cleaning, inspection, and work to be performed. The detail of the procedure will be appropriate to the job. The procedure will be reviewed by all involved departments (including FSIH) before work begins.
3. Prior to entry, the contents and hazards of the Confined Space shall be identified. Whenever possible, tanks, vessels, and piping shall be cleaned by water washing, flushing, or steaming. Cleaning by hand should be limited to final cleanup unless no other cleaning process is feasible.
4. Prior to the entry, all potential sources of energy affecting the space shall be isolated in accordance with SA-38, 1.16, "Energy Isolation." Furthermore, vapor barriers are not an acceptable substitute for blinds.
5. All connecting lines to the vessel shall be physically disconnected and misaligned or blinded at a point as near to the space as possible.
6. Adequate ventilation shall be maintained in the Confined Space throughout the entry operation. All ventilation equipment shall be bonded and grounded. If mechanical ventilation is used, it must be located in such a manner that it will not introduce contaminants such as gas or toxic vapors. In addition, it should be placed in such a manner that it will not prevent egress from the space. This will be verified by the Alyeska or Contractor Safety Specialist, and monitored by the Attendant.
7. An area outside the Confined Space shall be made available for decontamination as necessary.

8. Retrieval Systems shall be used whenever an entrant enters a Confined Space, as covered by this section, unless the retrieval system would increase the overall risk of the entry or would not contribute to the rescue of the entrant. Alyeska or Contractor Safety Specialist will determine when retrieval systems are appropriate.
9. Any Hot Work in a location that may affect the Confined Space shall be approved by all parties who have authorized and signed the Confined Space Entry Permit. Any Hot Work performed within the boundaries of a Confined Space shall be approved and signed off by Alyeska or Contractor Safety Specialist and should be referenced to the Hot Work Section under the "Hot Work in a Confined Space" section. A Gas Test of the atmosphere where the Hot Work is to take place shall be performed by the Alyeska or Contractor Safety Specialist and documented on the Hot Work Permit.
10. Permit-Required Confined Space entry safety plans/procedures must be approved by the local supervisor, entry supervisor, and Field Safety representative and available at the entrance to the Permit-Required Confined Space.
11. The Entry Supervisor may add entrants to the Confined Space Entry Permit or Badge Board.
12. The Confined Space Entry Permit and associated written plans shall be kept for one year and reviewed annually for improvements in the Permit-required Confined Space Entry Program.

#### **1.15.5.11 Pipeline Work Permit, Form 3459**

The Pipeline Work Permit is used by Pump Station Maintenance Coordinators (MCs) to ensure that work being performed along the TAPS and Fuel Gas Line (FGL) Pipeline Right-of-Way (ROW) is performed safely and efficiently without damage or danger to personnel, property, or the environment. Pipeline Work Permits are also utilized for work activities outside the pipeline ROW such as River Training Structures, Oil Spill Containment Sites, airfields, and Operation Material Sites (OMS), and typically require additional agency permitting.

Along the ROW are fenced compounds that contain Remote Gate Valves (RGVs), Ledeen Operated Check Valves, Metering Facilities, Cathodic Protection Sites, and Main Line Refrigeration Units (MLRs). Unit, Hot, or Confined Space Entry Permits issued by the local Pump Station normally control any activities within these fenced areas.

The Maintenance Coordinator (MC) or designee has the authority and responsibility to control all activities in their area of responsibility along the pipeline ROW or off-ROW sites as indicated above by use of the Pipeline Work Permit or by verbal agreement with the Person Doing the Work, as appropriate.

In some cases, a line wide Pipeline Work Permit may be written by the Issuing Authority after coordination with the individual MCs responsible for each area along the pipeline. In this case, the Person Doing Work must notify the local MC in advance prior to commencing work in the MC's area, and interface with the MC to review details of the line wide Pipeline Work Permit prior to starting work. Upon completion of work in the local MC's area, the Person Doing Work notifies both the local MC and Issuing Authority. The Issuing Authority is responsible for permit closeout and notification to the individual MCs when the work associated with the line wide Pipeline Work Permit is complete.

The Pipeline Work Permit is appropriate for the following types of work:

1. Any new pipeline or pipeline modification work, to include Nondestructive Testing (NDT).
2. New construction adjacent to the pipeline.
3. Earthwork/excavation activities, mineral mining, hauling/stockpiling activities.

4. Cathodic Protection surveys, fuel gas line leak surveys.
5. Test station, monitor rod, fence, sign, gate installation, or repairs.
6. Bridge, above ground pipeline (support and insulation), transition and animal crossing maintenance, or repairs.
7. Routine workpad maintenance, river training structures, low water crossing, and culvert construction or repair.
8. Pigging activities, mainline valve DOT function tests, mainline valve winterization.
9. Work by third parties on the ROW.

**Note**

Other work permits as appropriate (Unit, Hot, or Confined Space Entry) shall apply to all locations that are covered by the Pipeline Work Permit.

**1.15.5.11.1 Pipeline Right-of-Way (ROW)**

The pipeline ROW is described as the land within which Alyeska is authorized to install, operate, and maintain the pipeline. For Work Permit activities, this term is normally used to identify any work area within the TAPS and Fuel Gas Line ROW that is outside of the Pump Station and Valdez Terminal perimeter fences.

1. The width of the ROW measured from pipeline centerline is variable and dependent on the landowner, pipeline mode, facilities, and special burial modifications. ROW widths for the pipeline on private lands vary on a case-by-case basis. Typical ROW widths are described in *MR-48* and *FG-78*.
2. Work that will result in the disturbance of vegetation outside the existing workpad embankment even though the work site may be within the formal pipeline ROW requires written landowner approval.

**1.15.5.11.2 General Considerations**

Reference *MR-48, Trans-Alaska Pipeline Maintenance and Repair Manual* or *FG-78, Operating, Maintenance & Emergency Plans for the Fuel Gas Pipeline*, for minimum approved requirements, guidelines, and methods to cover the majority of pipeline maintenance and repair situations.

**1.15.6 Definitions**

**1.15.6.1 NEC Class I Area**

An area in which flammable gases or vapors are or may be present in the air, in quantities sufficient to produce explosive or ignitable mixtures.

**1.15.6.2 Hot Work In Berth Uncontrolled Loading Areas**

Work involving sources of ignition or temperatures sufficiently high enough to cause the ignition of a flammable gas mixture. This includes any work requiring the use of welding, burning, or soldering equipment, blow torches, some power driven tools, portable electrical equipment that is

not intrinsically safe or contained within an approved explosion-proof housing, sandblasting, or internal combustion engines. (As defined by the *International Safety Guide for Oil Tankers and Terminals*.)

### **1.15.6.3 Work Permit**

A control document that authorizes all work activities that must be controlled in a particular area. Specific federal and state regulations require written Work Permits for Permit-Required Confined Space Entry and for cutting, grinding, and welding operations. Alyeska has also elected to use Unit Work Permits (*Form 0161*), Hot Work Permits (*Form 0162*), and Pipeline Work Permits (*Form 3459*) to control other types of work as well.

### **1.15.7 Training**

N/A

### **1.15.8 Records**

Quality and Non-Quality records driven by this requirement in SA-38 are listed below.

For record retention requirements, see the *Records Retention Schedule* located under Resources\Records\Records Retention Schedule on the A-Net.

#### **1.15.8.1 Quality Records**

- *Form 0160, Confined Space Entry Permit* (including all associated work permits)

#### **1.15.8.2 Non-Quality Records**

- *Form 0144, Work Log*
- *Form 0161, Unit Work Permit*
- *Form 0162, Hot Work Permit*
- *Form 3459, Pipeline Work Permit*



# CONFINED SPACE ENTRY PERMIT

|   |   |   |   |
|---|---|---|---|
| <b>C-</b>   |   |   |   |
| THIS PERMIT IS FOR ENTRY ONLY. IF WORK IS TO BE PERFORMED, A UNIT, HOT, OR PIPELINE WORK PERMIT MUST BE ATTACHED.   |   |   |   |
| If this permit requires entry into area subject to vapor releases, the person doing the entry MUST contact the Control Room for permission to enter the area and have continuous radio contact with the Control Room while in the area. This permit may be cancelled by anyone at any time. |   |   |   |
| <b>RETURN THIS PERMIT TO ISSUING AUTHORITY WHEN WORK IS COMPLETE, OR BY THE END OF THE SHIFT, WHICHEVER COMES FIRST.</b>  |   |   |   |
| Permit Initiator/Company:   |   | Entry Supervisor:   |   |
| Date:   |   | Control/MC No.:   |   |
| Confined Space Location/Identification:   |   | Confined Space Description:   |   |
| Work Description:   |   | Entrants Listed On: <input type="checkbox"/> Badge Board <input type="checkbox"/> Permit page 2 |   |
| Attendant(s):   |   | List the Hazards of the Confined Space and those that may be created by the work:               |   |
| <b>ACCEPTABLE ENTRY CONDITIONS OF INTERNAL/EXTERNAL HAZARDS (PLEASE CHECK APPROPRIATE BOXES)</b>  |   |   |   |
| Area Posted/Barricaded  | <input type="checkbox"/> Yes <input type="checkbox"/> N/A           | Purging Complete  | <input type="checkbox"/> Yes <input type="checkbox"/> N/A                             |
| Pressure Relieved   | <input type="checkbox"/> Yes <input type="checkbox"/> N/A           | MSDSs On Site   | <input type="checkbox"/> Yes <input type="checkbox"/> N/A                             |
| Piping Isolated   | <input type="checkbox"/> Yes <input type="checkbox"/> N/A           | Ventilation Operating   | <input type="checkbox"/> Yes <input type="checkbox"/> N/A                             |
| Electrical Isolation  | <input type="checkbox"/> Yes <input type="checkbox"/> N/A           | Other   | <input type="checkbox"/> Yes <input type="checkbox"/> N/A                             |
| Blinding Done   | <input type="checkbox"/> Yes <input type="checkbox"/> N/A           | Safe Access/Egress  | <input type="checkbox"/> Yes <input type="checkbox"/> N/A                             |
| Rotating Equipment Disconnected   | <input type="checkbox"/> Yes <input type="checkbox"/> N/A           | Safety Plans/Procedures/Variations reviewed and at the work site?                               | <input type="checkbox"/> Yes <input type="checkbox"/> N/A                             |
| Affected areas, e.g., OCC, Rescue Team notified   | <input type="checkbox"/> Yes <input type="checkbox"/> N/A           | Will work being done in Confined Space introduce additional hazards?                            | <input type="checkbox"/> Yes <input type="checkbox"/> N/A                             |
| List associated Work Permits:   | <input type="checkbox"/> Yes <input type="checkbox"/> N/A           | If Yes, will Acceptable Entry Conditions mitigate the hazards?                                  | <input type="checkbox"/> Yes <input type="checkbox"/> N/A                             |
| Is Continuous Gas Test equipment prepared?  | <input type="checkbox"/> Yes <input type="checkbox"/> N/A           |   |   |
| Atmospheric Limits:   | % O <sub>2</sub> :  | % LEL:  | H <sub>2</sub> S ppm:   |
| CO ppm:   | THC ppm:  | Other:  |   |
| Initial Test Results:   | % O <sub>2</sub> :  | % LEL:  | H <sub>2</sub> S ppm:   |
| CO ppm:   | THC ppm:  | Other:  | Time:   |
| Tester:   |   |   |   |
| Initial Gas Detection Equipment:  | Initial Gas Tester:   | Verbal <input type="checkbox"/>   | Recording Frequency:  |
| Attendant Communication w/Entrants:   | <input type="checkbox"/> Direct                                     | <input type="checkbox"/> Radio Channel  | <input type="checkbox"/> Air Horns <input type="checkbox"/> Specified in Safety Plan  |
| Equipment Requirements:   | <input checked="" type="checkbox"/> PPE as specified in Safety Plan | <input type="checkbox"/> Non-Entry Retrieval System   | <input type="checkbox"/> Fall Protection <input type="checkbox"/> As listed on page 2 |
| Rescue Contact Person or Team:  | Contact Method:   |   |   |
| SPECIAL INSTRUCTIONS:   | PERMIT AUTHORIZATIONS   |   | Time  |
|   | Area Operator:  |   | Date  |
|   | Safety Rep:   |   |   |
|   | Entry Supervisor:   |   |   |
| Issuing Authority:  |   |   |   |
| <b>PERMIT CLOSEOUT OR CANCELLATION</b>  |   |   |   |
| 1. Has the work Area and/or Equipment been cleaned up?  |   |   | Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/> |
| 2. Has the Area Operator been notified?   |   |   | Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/> |
| 3. List Problems Encountered:   |   |   |   |
| 4. Entry Supervisor:  |   | Time:   | Date:   |
| <input type="checkbox"/> Permit Canceled  | Time:   | Initials:   | Reasons:  |
| 5. Have other affected areas, e.g. OCC, been notified of status of this permit?   |   |   | Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/> |
| 6. All Isolated, By-Passed, or Shutdown systems returned to normal?   |   |   | Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/> |
| 7. Issuing Authority:   |   | Time:   | Date:   |

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Figure 6. Form 0160, Confined Space Entry Permit (Page 1)





# UNIT WORK PERMIT

|  |  |                    |  |                       |   |   |                          |                          |                          |                                   |  |  |  |  |
|--|--|--------------------|--|-----------------------|---|---|--------------------------|--------------------------|--------------------------|-----------------------------------|--|--|--|--|
| <b>U-</b>  |  |                    |  |                       |   |   |                          |                          |                          |                                   |  |  |  |  |
| <p>If this work requires entry into area subject to vapor releases, the person doing the work <b>MUST</b> contact the Issuing Authority for permission to enter the area and have continuous radio contact with the Issuing Authority while in the area. This permit may be cancelled by anyone at any time.<br/> <b>RETURN THIS PERMIT TO ISSUING AUTHORITY WHEN WORK IS COMPLETE, OR BY THE END OF THE SHIFT, WHICHEVER COMES FIRST.</b></p> |  |                    |  |                       |   |   |                          |                          |                          |                                   |  |  |  |  |
| Permit Initiator/Company:  |  |                    | Person Doing Work:   |                       |   | Date:                                     |                          |                          |                          |                                   |  |  |  |  |
| Specific Location/Equipment:   |  |                    | Phone/Radio/Pager #:   |                       | Estimated # of Workers:                                     |   | Control/MC No.:          |                          |                          |                                   |  |  |  |  |
| Work Description:  |  |                    |  |                       |   |   | Time Start:              |                          |                          |                                   |  |  |  |  |
|  |  |                    |  |                       |   |   | Time End:                |                          |                          |                                   |  |  |  |  |
| Procedure #:   |  |                    |  |                       | Work Order #:   |   |                          |                          |                          |                                   |  |  |  |  |
| <b>UNIT WORK PERMIT ITEMS TO CONSIDER (Checked boxes must have associated review on page 2)</b>  |  |                    |  |                       |   |   |                          |                          |                          |                                   |  |  |  |  |
| <input type="checkbox"/> Non-Permit Required Confined Space Entry  |  |                    | <input type="checkbox"/> Alternate Procedure Required Confined Space Entry     |                       |   | <input type="checkbox"/> Excavation       |                          |                          |                          |                                   |  |  |  |  |
| <input type="checkbox"/> Cutting, Grinding, Welding in Non-Classified Areas  |  |                    | <input type="checkbox"/> Energized Electrical Circuits in Non-Classified Areas |                       |   | <input type="checkbox"/> Energy Isolation |                          |                          |                          |                                   |  |  |  |  |
| <input type="checkbox"/> Pressure Testing  |  |                    | <input type="checkbox"/> Radiography   |                       |   |   |                          |                          |                          |                                   |  |  |  |  |
| <b>PLEASE CHECK APPROPRIATE RESPONSE</b>   |  |                    |  |                       |   |   | Yes                      | No                       | N/A                      |                                   |  |  |  |  |
| 1. Have affected personnel been briefed on job safety and requirements and on back of permit?  |  |                    |  |                       |   |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                                   |  |  |  |  |
| 2. Is this work affected by, or does this work affect, other work or processes? If Yes, describe below.  |  |                    |  |                       |   |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                                   |  |  |  |  |
| 3. Have fire detection, gas systems, and/or suppression systems been isolated/By-passed? If Yes, describe below.   |  |                    |  |                       |   |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                                   |  |  |  |  |
| 4. Could work cause Remote Alarms? If Yes, describe below.   |  |                    |  |                       |   |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                                   |  |  |  |  |
| 5. Is equipment monitored or controlled by OCC being taken out of service? If Yes, time OCC notified:  |  |                    |  |                       |   |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                                   |  |  |  |  |
| 6. Have Shutdowns been disabled? If Yes, describe below  |  |                    |  |                       |   |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                                   |  |  |  |  |
| 7. Is Energy Isolation/Lockout necessary? If Yes, Tag or Mastercard Number:  |  |                    |  |                       |   |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                                   |  |  |  |  |
| 8. Is Gas Test Required?   |  |                    |  |                       |   |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                                   |  |  |  |  |
| 9. Is Continuous Gas Test required?  |  |                    |  |                       |   |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                                   |  |  |  |  |
| Initial Gas Test   |  | % O <sub>2</sub> : | % LEL:   | H <sub>2</sub> S ppm: | CO ppm:   | THC ppm:                                  | Other:                   | Time:                    | Tester:                  |                                   |  |  |  |  |
| Extended/Retest Gas Test   |  | % O <sub>2</sub> : | % LEL:   | H <sub>2</sub> S ppm: | CO ppm:   | THC ppm:                                  | Other:                   | Time:                    | Tester:                  |                                   |  |  |  |  |
| SPECIAL INSTRUCTIONS:  |  |                    |  |                       | <b>PERMIT AUTHORIZATIONS</b>                                |   |                          |                          |                          |                                   |  |  |  |  |
|  |  |                    |  |                       | INITIATING SHIFT Signature (Badge # if required)            |   |                          |                          |                          |                                   |  |  |  |  |
|  |  |                    |  |                       | Area Operator:  |   |                          |                          |                          | <input type="checkbox"/> Verbally |  |  |  |  |
|  |  |                    |  |                       | Person Doing the Work:                                      |   |                          |                          |                          |                                   |  |  |  |  |
|  |  |                    |  |                       | Issuing Authority:  |   |                          |                          |                          |                                   |  |  |  |  |
|  |  |                    |  |                       | EXTENDING SHIFT (See page 2, Permit Extension Requirements) |   |                          |                          |                          |                                   |  |  |  |  |
| Area Operator:   |  |                    |  |                       | <input type="checkbox"/> Verbally                           |   |                          |                          |                          |                                   |  |  |  |  |
| Person Doing the Work:   |  |                    |  |                       |   |   |                          |                          |                          |                                   |  |  |  |  |
| Issuing Authority:   |  |                    |  |                       |   |   |                          |                          |                          |                                   |  |  |  |  |
| <b>PERMIT CLOSEOUT</b>   |  |                    |  |                       |   |   | Yes                      | No                       | N/A                      |                                   |  |  |  |  |
| 1. Has the work Area and/or Equipment been cleaned up?   |  |                    |  |                       |   |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                                   |  |  |  |  |
| 2. Has the Area Operator been notified?  |  |                    |  |                       |   |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                                   |  |  |  |  |
| 3. Post Work Comments:   |  |                    |  |                       |   |   |                          |                          |                          |                                   |  |  |  |  |
| 4. Person Doing The Work:  |  |                    |  |                       |   |   | Time:                    | Date:                    |                          |                                   |  |  |  |  |
| 5. Have other affected areas, e.g. OCC, been notified of status of this permit?  |  |                    |  |                       |   |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                                   |  |  |  |  |
| 6. All Isolated, By-Passed, or Shutdown systems returned to normal? If not, Have EIT or EOS logs been updated?   |  |                    |  |                       |   |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                                   |  |  |  |  |
| 7. Area Operator/Control Room/SPOC/Issuing Authority or Delegate:  |  |                    |  |                       |   |   | Time:                    | Date:                    |                          |                                   |  |  |  |  |

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Figure 7. Form 0161, Unit Work Permit (Page 1)



# UNIT WORK PERMIT

Any Individual may cancel this work permit at any time if they consider conditions or work methods to be unsafe. Anyone canceling a work permit must: a) Inform the person doing the work; b) Remove the site copy of the permit; and c) Return it to the Issuing Authority/SPOC, giving reasons for their actions.

|   | YES   | N/A                                | Unit Work Permit Items To Consider  | U-   |
|---|---|------------------------------------|---|--|
| N.P.R.C.S.E.*   | <input type="checkbox"/>  | <input type="checkbox"/>           | Has a reclassification been certified & signed?   | <input type="checkbox"/> See attached form <input type="checkbox"/> See Special Instructions |
| Cutting, Grinding, Welding in Non-Classified Areas  | <input type="checkbox"/>  | <input type="checkbox"/>           | Fire Detection/Suppression systems need to be bypassed?   |  |
|   | <input type="checkbox"/>  | <input type="checkbox"/>           | Fire extinguishers present and in required location?  |  |
|   | <input type="checkbox"/>  | <input type="checkbox"/>           | Combustible materials removed/covered within 35'?   |  |
|   | <input type="checkbox"/>  | <input type="checkbox"/>           | Sumps/drains checked and covered?   |  |
|   | <input type="checkbox"/>  | <input type="checkbox"/>           | Welding screens required?   |  |
|   | <input type="checkbox"/>  | <input type="checkbox"/>           | Proper eye protection?  |  |
|   | <input type="checkbox"/>  | <input type="checkbox"/>           | Is a welding procedure required?  |  |
| Pressure Testing  | <input type="checkbox"/>  | <input type="checkbox"/>           | Area posted?  |  |
|   | <input type="checkbox"/>  | <input type="checkbox"/>           | Testing procedure in place?   |  |
|   | <input type="checkbox"/>  | <input type="checkbox"/>           | Notification of personnel in test area?   |  |
|   | <input type="checkbox"/>  | <input type="checkbox"/>           | Spill response discussed?   |  |
| A.P.R.C.S.E.**  | <input type="checkbox"/>  | <input type="checkbox"/>           | Is the procedure available? If Yes, Procedure #:  |  |
|   | <input type="checkbox"/>  | <input type="checkbox"/>           | Have the safety requirements of procedure been reviewed and met, including Gas Test?  |  |
| Energized Electrical Circuits in Non-Classified Areas   | <input type="checkbox"/>  | <input type="checkbox"/>           | Visual inspection only?   |  |
|   | <input type="checkbox"/>  | <input type="checkbox"/>           | Testing/Troubleshooting?  |  |
|   | <input type="checkbox"/>  | <input type="checkbox"/>           | Removal/Replacement/Re-work required?   |  |
|   | <input type="checkbox"/>  | <input type="checkbox"/>           | Are safe work practices in place per SA-38?   |  |
| Radiography   | <input type="checkbox"/>  | <input type="checkbox"/>           | Warning signs/lights/ropes?   |  |
|   | <input type="checkbox"/>  | <input type="checkbox"/>           | Safe operating limits delineated?   |  |
|   | <input type="checkbox"/>  | <input type="checkbox"/>           | UV/detection/suppression systems by-passed if necessary?  |  |
|   | <input type="checkbox"/>  | <input type="checkbox"/>           | Notification of personnel in test area?   |  |
| Excavation  | <input type="checkbox"/>  | <input type="checkbox"/>           | Has underground electrical, piping, etc. been identified and marked?  |  |
|   | <input type="checkbox"/>  | <input type="checkbox"/>           | Excavation Plan attached?   |  |
|   | <input type="checkbox"/>  | <input type="checkbox"/>           | Has MC been advised of work and reviewed requirements?  |  |
|   | <input type="checkbox"/>  | <input type="checkbox"/>           | Where applicable, has competent person reviewed plan and inspected excavation?  |  |
|   | <input type="checkbox"/>  | <input type="checkbox"/>           | When deeper than four feet and personnel entry required, has air testing been performed?  |  |
|   | <input type="checkbox"/>  | <input type="checkbox"/>           | Excavation sides treated to prevent cave-in?  |  |
| Energy Isolation  | <input type="checkbox"/>  | <input type="checkbox"/>           | Single Source Energy Isolation? (List Tag Number on Line 7 of opening section)  |  |
|   | <input type="checkbox"/>  | <input type="checkbox"/>           | Standard/Mastercard Energy Isolation? (List Tag Numbers/Mastercard Number on Line 7 of opening section)   |  |
|   | <input type="checkbox"/>  | <input type="checkbox"/>           | Isolation device(s) <input type="checkbox"/> Breakers <input type="checkbox"/> Valve(s) <input type="checkbox"/> Other Listed with: <input type="checkbox"/> Special Instructions <input type="checkbox"/> Mastercard |  |
|   | <input type="checkbox"/>  | <input type="checkbox"/>           | Method of Isolation listed <input type="checkbox"/> In SOP/SMP <input type="checkbox"/> Document In or with: <input type="checkbox"/> Special Instructions <input type="checkbox"/> Mastercard                        |  |
|   | <input type="checkbox"/>  | <input type="checkbox"/>           | Verified by Method <input type="checkbox"/> VOM <input type="checkbox"/> Gauge <input type="checkbox"/> Other Listed with: <input type="checkbox"/> Special Instructions <input type="checkbox"/> Mastercard          |  |
| PERMIT EXTENSION REQUIREMENTS   | <input type="checkbox"/>  | <input type="checkbox"/>           | Contingency Plan ID'd <input type="checkbox"/> In SOP/SMP <input type="checkbox"/> Document In or with: <input type="checkbox"/> Special Instructions <input type="checkbox"/> Mastercard                             |  |
|   | 1. Extension will only be issued to the original <i>Person Doing Work</i> . |                                    | 2. No change in work scope.   |  |
| 3. Extension to be signed by incoming <i>Issuing Authority</i> and <i>Person Doing Work</i> . |   | 4. New Gas Test will be performed. |   |  |
| Designated Worker   | Signature   |                                    | Time  | Date   |
| <input type="checkbox"/>  |   |                                    |   |  |

\*Non-Permit Required Confined Space Entry      \*\*Alternate Procedure Permit Required Confined Space Entry

Close Out Permit With Issuing Authority When Work is Complete

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Figure 7. Form 0161, Unit Work Permit (Page 2)



# HOT WORK PERMIT

**H-**

For work that uses or generates an ignition source or work on energized electrical circuits in Classified Areas. This permit is automatically suspended in the event of a spill of hydrocarbons in the vicinity, or the sounding of the Emergency Alarm until All Clear is announced. This permit may be cancelled by anyone. RETURN THIS PERMIT TO ISSUING AUTHORITY WHEN WORK IS COMPLETE, OR BY THE END OF THE SHIFT, WHICHEVER COMES FIRST.

|                              |                      |                         |
|------------------------------|----------------------|-------------------------|
| Permit Initiator/Company:    | Person Doing Work:   | Date:                   |
| Specific Location/Equipment: | Phone/Radio/Pager #: | Estimated # of Workers: |
| Work Description:            | Control/MC No.:      | Time Start:             |
|                              |                      | Time End:               |

|              |               |
|--------------|---------------|
| Procedure #: | Work Order #: |
|--------------|---------------|

**HOT WORK PERMIT ITEMS TO CONSIDER (Checked boxes must have associated review on page 2)**

|   |  |   |
|---|--|---|
| <input type="checkbox"/> Cutting, Grinding, Welding in Classified Areas       | <input type="checkbox"/> Energized Electrical Circuits in Classified Areas | <input type="checkbox"/> Hot Tap          |
| <input type="checkbox"/> Non-Intrinsically Safe Equipment in Classified Areas | <input type="checkbox"/> Heaters and Other Equipment                       | <input type="checkbox"/> Energy Isolation |

**PLEASE CHECK APPROPRIATE RESPONSE**

|  | Yes                      | No                       | N/A                      |
|--|--------------------------|--------------------------|--------------------------|
| 1. Have affected personnel been briefed on job safety and requirements and on back of permit?                    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Is this work affected by, or does this work affect, other work or processes? If Yes, describe below.          | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Have fire detection, gas systems, and/or suppression systems been Isolated/By-passed? If Yes, describe below. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Could work cause Remote Alarms? If Yes, describe below.   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Is equipment monitored or controlled by OCC being taken out of service? If Yes, time OCC notified:            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. Have Shutdowns been disabled? If Yes, describe below  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. Is Energy Isolation/Lockout necessary? If Yes, Tag or Mastercard Number:                                      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. Has designated fire watch been assigned, with appropriate equipment? List name(s):                            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 9. Is Gas Test Required?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 10. Is Continuous Gas Test required?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

|                                 |                    |        |                       |         |          |        |       |         |
|---------------------------------|--------------------|--------|-----------------------|---------|----------|--------|-------|---------|
| <b>Initial Gas Test</b>         | % O <sub>2</sub> : | % LEL: | H <sub>2</sub> S ppm: | CO ppm: | THC ppm: | Other: | Time: | Tester: |
| <b>Extended/Retest Gas Test</b> | % O <sub>2</sub> : | % LEL: | H <sub>2</sub> S ppm: | CO ppm: | THC ppm: | Other: | Time: | Tester: |

|                              |  |                                   |
|------------------------------|--|-----------------------------------|
| <b>SPECIAL INSTRUCTIONS:</b> | <b>PERMIT AUTHORIZATIONS</b>                                       |                                   |
|                              | <b>INITIATING SHIFT Signature (Badge # if required)</b>            |                                   |
|                              | Area Operator:   | <input type="checkbox"/> Verbally |
|                              | Person Doing the Work:   |                                   |
|                              | Issuing Authority:   |                                   |
|                              | <b>EXTENDING SHIFT (See page 2, Permit Extension Requirements)</b> |                                   |
|                              | Area Operator:   | <input type="checkbox"/> Verbally |
|                              | Person Doing the Work:   |                                   |
|                              | Issuing Authority:   |                                   |

**PERMIT CLOSEOUT**

|  | Yes                      | No                       | N/A                      |
|--|--------------------------|--------------------------|--------------------------|
| 1. Has the work Area and/or Equipment been cleaned up?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Has the Area Operator been notified?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Post Work Comments:   |                          |                          |                          |
| 4. Person Doing The Work:  | Time:                    | Date:                    |                          |
| 5. Have other affected areas, e.g. OCC, been notified of status of this permit?                                | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. All Isolated, By-Passed, or Shutdown systems returned to normal? If not, Have EIT or EOS logs been updated? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. Area Operator/Control Room/SPOC/Issuing Authority or Delegate:  | Time:                    | Date:                    |                          |

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Figure 8. Form 0162, Hot Work Permit (Page 1)



# HOT WORK PERMIT

Any individual may cancel this work permit at any time if they consider conditions or work methods to be unsafe. Anyone Canceling a work permit must: a) Inform the person doing the work; b) Remove the site copy of the permit; and c) Return it to the Issuing Authority/SPOC, giving reasons for their actions.

|  | YES  | N/A                      | Hot Work Permit Items To Consider   |
|--|--|--------------------------|---|
| Cutting, Grinding, Welding in Classified Areas       | <input type="checkbox"/>   | <input type="checkbox"/> | Fire extinguishers present and in required location?  |
|  | <input type="checkbox"/>   | <input type="checkbox"/> | Reviewed SA-38, Requirement 1.19, Welding and Flame Cutting, especially 1.19.6.4, Fire Prevention and Protection?   |
|  | <input type="checkbox"/>   | <input type="checkbox"/> | Sumps/drains checked and covered within 35'?  |
|  | <input type="checkbox"/>   | <input type="checkbox"/> | Welding screens required?   |
|  | <input type="checkbox"/>   | <input type="checkbox"/> | Proper eye protection?  |
|  | <input type="checkbox"/>   | <input type="checkbox"/> | Is a welding procedure required?  |
| Non-Intrinsically Safe Equipment in Classified Areas | <input type="checkbox"/>   | <input type="checkbox"/> | Power tools, cameras, test equipment, vehicles?   |
|  | <input type="checkbox"/>   | <input type="checkbox"/> | Fire Detection/Suppression systems need to be bypassed?   |
| Energized Electrical Circuits in Classified Areas    | <input type="checkbox"/>   | <input type="checkbox"/> | Fire Detection/Suppression systems need to be bypassed?   |
|  | <input type="checkbox"/>   | <input type="checkbox"/> | Visual inspection only?   |
|  | <input type="checkbox"/>   | <input type="checkbox"/> | Testing/Troubleshooting?  |
|  | <input type="checkbox"/>   | <input type="checkbox"/> | Removal/Replacement/Re-work required?   |
| Heaters and Other Equipment                          | <input type="checkbox"/>   | <input type="checkbox"/> | Are safe work practices in place per SA-38?   |
|  | <input type="checkbox"/>   | <input type="checkbox"/> | Are heaters and equipment monitoring requirements specified?  |
|  | <input type="checkbox"/>   | <input type="checkbox"/> | Fire extinguishers present and in required locations?   |
|  | <input type="checkbox"/>   | <input type="checkbox"/> | Have Bonding and Grounding requirements been met?   |
| Hot Tap  | <input type="checkbox"/>   | <input type="checkbox"/> | Proper clearance from equipment (cable trays, piping, fuel tanks, etc.)?  |
|  | <input type="checkbox"/>   | <input type="checkbox"/> | Is Hot Tap procedure in place?  |
|  | <input type="checkbox"/>   | <input type="checkbox"/> | Flow level requirements met?  |
|  | <input type="checkbox"/>   | <input type="checkbox"/> | Pressure requirements met?  |
| Energy Isolation                                     | <input type="checkbox"/>   | <input type="checkbox"/> | Is line clearly surveyed/marked for hot tapping?  |
|  | <input type="checkbox"/>   | <input type="checkbox"/> | Reviewed Cutting, Grinding, Welding in Classified Areas checklist?  |
|  | <input type="checkbox"/>   | <input type="checkbox"/> | Single Source Energy Isolation? (List Tag Number on Line 7 of opening section)  |
|  | <input type="checkbox"/>   | <input type="checkbox"/> | Standard/Mastercard Energy Isolation? (List Tag Numbers/Mastercard Number on Line 7 of opening section)   |
|  | <input type="checkbox"/>   | <input type="checkbox"/> | Isolation device(s) <input type="checkbox"/> Breakers <input type="checkbox"/> Valve(s) <input type="checkbox"/> Other Listed with: <input type="checkbox"/> Special Instructions <input type="checkbox"/> Mastercard |
|  | <input type="checkbox"/>   | <input type="checkbox"/> | Method of Isolation listed <input type="checkbox"/> In SOP/SMP <input type="checkbox"/> Document In or with: <input type="checkbox"/> Special Instructions <input type="checkbox"/> Mastercard                        |
| PERMIT EXTENSION REQUIREMENTS                        | <input type="checkbox"/>   | <input type="checkbox"/> | Verified by Method <input type="checkbox"/> VOM <input type="checkbox"/> Gauge <input type="checkbox"/> Other Listed with: <input type="checkbox"/> Special Instructions <input type="checkbox"/> Mastercard          |
|  | <input type="checkbox"/>   | <input type="checkbox"/> | Contingency Plan ID'd <input type="checkbox"/> In SOP/SMP <input type="checkbox"/> Document In or with: <input type="checkbox"/> Special Instructions <input type="checkbox"/> Mastercard                             |
|  | 1. Extension will only be issued to the original Person Doing Work.            |                          | 2. No change in work scope.   |
|  | 3. Extension to be signed by incoming Issuing Authority and Person Doing Work. |                          | 4. New Gas Test will be performed.  |
| Designated Worker                                    | Signature  |                          | Time  |
| <input type="checkbox"/>                             |  |                          |   |

**Close Out Permit With Issuing Authority When Work Is Complete!**

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**Figure 8. Form 0162, Hot Work Permit (Page 2)**



# PIPELINE WORK PERMIT

| PS-   |  |                    |  |   |                      |   |                          |                          |                          |
|---|--|--------------------|--|---|----------------------|---|--------------------------|--------------------------|--------------------------|
| Due to Security concerns, access roads and gates shall be closed and locked. Report any suspicious activity to Security and local Maintenance Coordinator. This permit may be cancelled by anyone at any time.                                |  |                    |  |   |                      |   |                          |                          |                          |
| <b>RETURN THIS PERMIT TO ISSUING AUTHORITY WHEN WORK IS COMPLETE, OR BY THE PERMIT COMPLETION DATE.</b>   |  |                    |  |   |                      |   |                          |                          |                          |
| Permit Initiator/Company:   |  |                    |  | Person Doing Work:  |                      |   | Date:                    |                          |                          |
| Specific Location:  |  |                    |  |   | Phone/Radio/Pager #: |   | Estimated # of Workers:  |                          |                          |
| Effective From Time:  |  | Date:              |  | Effective to Time:  |                      | Date:   |                          | Extended to Time: Date:  |                          |
| Work Description:   |  |                    |  |   |                      |   |                          |                          |                          |
| Procedure #:  |  |                    |  | Work Order #:   |                      |   |                          |                          |                          |
| <b>PIPELINE WORK PERMIT ITEMS TO CONSIDER (Checked boxes must have associated review on page 2)</b>   |  |                    |  |   |                      |   |                          |                          |                          |
| <input type="checkbox"/> Confined Space Entry   |  |                    | <input type="checkbox"/> Utility Locate Required |   |                      | <input checked="" type="checkbox"/> Radiography and/or Pressure Testing       |                          |                          |                          |
| <input type="checkbox"/> Cutting, Grinding, Welding in Non-Classified Areas   |  |                    | <input type="checkbox"/> Required Agency Permits |   |                      | <input type="checkbox"/> MC/Alyeska Representative Required On Site           |                          |                          |                          |
| <input type="checkbox"/> Mining and/or Mineral Materials Required   |  |                    | <input type="checkbox"/> Excavation              |   |                      | <input type="checkbox"/> Notification to OCC, U/S, D/S Pump Stations Required |                          |                          |                          |
| <b>PLEASE CHECK APPROPRIATE RESPONSE</b>  |  |                    |  |   |                      |   |                          |                          |                          |
|   |  |                    |  |   |                      |   | Yes                      | No                       | N/A                      |
| 1. Have affected personnel been briefed on job safety and requirements and on back of permit?   |  |                    |  |   |                      |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Is this work affected by, or does this work affect, other work or processes? If Yes, describe below  |  |                    |  |   |                      |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Is Energy Isolation/Lockout necessary? If Yes, Tag or Mastercard Number:   |  |                    |  |   |                      |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Has Person Doing Work been informed of the need to avoid damage to all survey monuments/markers? Immediately report any damage (pre-existing or otherwise) to the local MC.  |  |                    |  |   |                      |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Are Other Work Permits required? If Yes, list:   |  |                    |  |   |                      |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. Have Environmental Hazards been identified and mitigated (e.g., Avalanche, Mudslide, Slope Instability, Cut Bank)?   |  |                    |  |   |                      |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. Does the work require brush cutting? If Yes, refer to SA-38, Brush Cutting, and MR-48, Workpad and Access Roads.   |  |                    |  |   |                      |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. Will the work require excavation dewatering? If Yes, refer to ED-108, Excavation Dewatering (complete Form 3556).  |  |                    |  |   |                      |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 9. Will the work be over or near water? If Yes, refer to SA-38, Personal Flotation Devices, for requirements.   |  |                    |  |   |                      |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 10. Will the work require the use of an All Terrain Vehicle (ATV)? If Yes, refer to SA-38, All Terrain Vehicles, for requirements.  |  |                    |  |   |                      |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 11. Will the work require secondary containment dewatering (i.e., Mainline Vaults, Fuel Gas Line Manhole)? If Yes, refer to EN-43-004, Wastewater Discharges (complete Form 3729, Secondary Containment Water Discharge Report).              |  |                    |  |   |                      |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 12. Will in-stream/bank work be required at a Pipeline, Access, or Workpad Bridge? If Yes, contact Environment or Lands Dept for permits. Contact Systems Integrity if the posted weight limit on Access or Workpad Bridge could be exceeded. |  |                    |  |   |                      |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 13. Is Gas Test Required?   |  |                    |  |   |                      |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 14. Is Continuous Gas Test required?  |  |                    |  |   |                      |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Initial Gas Test  |  | % O <sub>2</sub> : | % LEL:   | H <sub>2</sub> S ppm:                                       | CO ppm:              | THC ppm:  | Other:                   | Time:                    | Tester:                  |
| Extended/Retest Gas Test  |  | % O <sub>2</sub> : | % LEL:   | H <sub>2</sub> S ppm:                                       | CO ppm:              | THC ppm:  | Other:                   | Time:                    | Tester:                  |
| SPECIAL INSTRUCTIONS:   |  |                    |  |   |                      | <b>PERMIT AUTHORIZATIONS</b>  |                          |                          |                          |
|   |  |                    |  |   |                      | INITIATING SHIFT Signature (Badge # if required)                              |                          |                          |                          |
|   |  |                    |  |   |                      | Person Doing the Work: <input type="checkbox"/> Verbally                      |                          |                          |                          |
|   |  |                    |  |   |                      | Issuing Authority:  |                          |                          |                          |
|   |  |                    |  | EXTENDING SHIFT (See page 2, Permit Extension Requirements) |                      |   |                          |                          |                          |
|   |  |                    |  | Person Doing the Work: <input type="checkbox"/> Verbally    |                      |   |                          |                          |                          |
|   |  |                    |  | Issuing Authority:  |                      |   |                          |                          |                          |
| <b>PERMIT CLOSEOUT</b>  |  |                    |  |   |                      |   |                          |                          |                          |
| 1. Has the work Area and/or Equipment been cleaned up?  |  |                    |  |   |                      |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Isolated/By-passed Shutdown systems returned to normal?  |  |                    |  |   |                      |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Have other affected areas, e.g., OCC, been notified of status of this permit?  |  |                    |  |   |                      |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Post Work Comments:  |  |                    |  |   |                      |   |                          |                          |                          |
| 5. Person Doing The Work:   |  |                    |  |   |                      |   | Time:                    | Date:                    |                          |
| 6. Issuing Authority:   |  |                    |  |   |                      |   | Time:                    | Date:                    |                          |

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Figure 9. Form 3459, Pipeline Work Permit (Page 1)



# PIPELINE WORK PERMIT

Any individual may cancel this work permit at any time if they consider conditions or work methods to be unsafe. Anyone canceling a work permit must: a) Inform the person doing the work; b) Remove the site copy of the permit; and c) Return it to the Issuing Authority/SPOC, giving reasons for their actions.

|  | YES                      | N/A   | Pipeline Work Permit Items To Consider   | PS-                         |                                 |                          |   |
|--|--------------------------|---|--|-----------------------------|---------------------------------|--------------------------|---|
| Confined Space Entry   | <input type="checkbox"/> | <input type="checkbox"/>  | Has a reclassification been certified & signed for Non-Permit Required Confined Space? (see attached form)   |                             |                                 |                          |   |
|  | <input type="checkbox"/> | <input type="checkbox"/>  | Does work require Permit-Required Confined Space (PRCS) or PRCS Using Alternate Entry Procedures? If Yes, obtain Confined Space Entry Permit.  |                             |                                 |                          |   |
|  | <input type="checkbox"/> | <input type="checkbox"/>  | Have the affected employees been trained in compliance with 29 CFR 1910.146?   |                             |                                 |                          |   |
| Cutting, Grinding, Welding in Non-Classified Areas   | <input type="checkbox"/> | <input type="checkbox"/>  | Fire extinguishers present and in required location?   |                             |                                 |                          |   |
|  | <input type="checkbox"/> | <input type="checkbox"/>  | Combustible materials removed/covered within 35'?  |                             |                                 |                          |   |
|  | <input type="checkbox"/> | <input type="checkbox"/>  | Proper eye protection and other Personal Protective Equipment addressed?   |                             |                                 |                          |   |
|  | <input type="checkbox"/> | <input type="checkbox"/>  | Is a welding procedure required?   |                             |                                 |                          |   |
| Mining and/or Mineral Materials Required   | <input type="checkbox"/> | <input type="checkbox"/>  | Will mined materials be hauled from an Operations Material Site? If Yes, complete Form 10164, Daily Mineral Material Hauling Voucher.  |                             |                                 |                          |   |
|  | <input type="checkbox"/> | <input type="checkbox"/>  | Will blasting be required? If Yes, refer to Master Specification C-415, Blasting Restrictions Near the Trans-Alaska Pipeline System.   |                             |                                 |                          |   |
| Utility Locate Required (refer to MR-48, Pre-Excavation Activities, or FG-78, Excavation Safety)   | <input type="checkbox"/> | <input type="checkbox"/>  | Is work performed in the vicinity of the fiber optics cable (FOC)? If Yes, contact GCI, 1-888-560-2022 for locate.   |                             |                                 |                          |   |
|  | <input type="checkbox"/> | <input type="checkbox"/>  | Is work performed in the vicinity of cathodic protection systems? If Yes, contact Systems Integrity and complete Form 2353, Rectifier Service Record, to document any maintenance, repairs, or other service interruptions.<br>NOTE: If excavation is in the direct influence of Enhanced Cathodic Protection, care should be taken to ensure that the rectifier(s) are shut off and tagged out until such time as the excavation is closed.   |                             |                                 |                          |   |
|  | <input type="checkbox"/> | <input type="checkbox"/>  | Is third party Utility Locate required?  |                             |                                 |                          |   |
| Required Agency Permits  | <input type="checkbox"/> | <input type="checkbox"/>  | Is a copy of the agency permit posted at job site as required by issuing agency?   |                             |                                 |                          |   |
|  | <input type="checkbox"/> | <input type="checkbox"/>  | Has 3-day notification been made to ADF&G for maintenance work on low water crossings/culverts in fish streams?  |                             |                                 |                          |   |
| Excavation (refer to SA-38, Excavation Safety, or FG-78, Excavation Safety)  | <input type="checkbox"/> | <input type="checkbox"/>  | Is the excavation over 4 feet in depth? If Yes, attach Form 2268, Excavation Plan, completed by a Competent Person.  |                             |                                 |                          |   |
|  | <input type="checkbox"/> | <input type="checkbox"/>  | Where applicable, has competent person reviewed plan and inspected excavation?   |                             |                                 |                          |   |
|  | <input type="checkbox"/> | <input type="checkbox"/>  | When deeper than four feet and personnel entry required, has air testing been performed?   |                             |                                 |                          |   |
|  | <input type="checkbox"/> | <input type="checkbox"/>  | Is a survey required?  |                             |                                 |                          |   |
|  | <input type="checkbox"/> | <input type="checkbox"/>  | Surveyors required on-site?  |                             |                                 |                          |   |
| Radiography  | <input type="checkbox"/> | <input type="checkbox"/>  | Warning signs/lights/ropes?  | Pressure Testing<br>YES N/A |                                 |                          |   |
|  | <input type="checkbox"/> | <input type="checkbox"/>  | Safe operating limits delineated?  |                             | <input type="checkbox"/>        | <input type="checkbox"/> | Is the area posted?                     |
|  | <input type="checkbox"/> | <input type="checkbox"/>  | UV/detection/suppression systems by-passed if necessary?   |                             | <input type="checkbox"/>        | <input type="checkbox"/> | Is the Testing Procedure in place?      |
|  | <input type="checkbox"/> | <input type="checkbox"/>  | Notification of personnel in test area?  |                             | <input type="checkbox"/>        | <input type="checkbox"/> | Notification of personnel in test area? |
| MC/Alyeska Representative Required On Site   | <input type="checkbox"/> | <input type="checkbox"/>  | Is a Mainline Valve movement required? If Yes, Maintenance Coordinator or designee required on site.   |                             |                                 |                          |   |
|  | <input type="checkbox"/> | <input type="checkbox"/>  | Is On-Site Construction Management required per MR-48? If Yes, Maintenance Coordinator or designee, Project, or Baseline Superintendent is required on site.   |                             |                                 |                          |   |
|  | <input type="checkbox"/> | <input type="checkbox"/>  | Are tapping or stopple plugging/retracting operations being performed? If Yes, Alyeska Rep is required on site.  |                             |                                 |                          |   |
| Notification to OCC, U/S, D/S Pump Stations Required   | <input type="checkbox"/> | <input type="checkbox"/>  | Does the work require Priority 1 Work or Mainline Valve movement? If Yes, notify OCC, Upstream and Downstream pump stations prior to and after completion of work.   |                             |                                 |                          |   |
| PERMIT EXTENSION REQUIREMENTS  | 1.                       | Extension will only be issued to the original Person Doing Work.            |  | 2.                          | No change in work scope.        |                          |   |
|  | 3.                       | Extension to be signed by incoming Issuing Authority and Person Doing Work. |  | 4.                          | New Gas Test will be performed. |                          |   |
|  | <b>RULES</b>             |   |  |                             |                                 |                          |   |
|  | <b>GUIDELINES</b>        |   |  |                             |                                 |                          |   |
| <p>Rules are designed to protect personnel, the environment, the pipeline and equipment.</p> <p>Maintain 15' travel distance from VSMs when snow conceals the driveline. If a vehicle or equipment leaves the workpad, notify the MC if recovery action is over undisturbed ground.</p> <p>Do not back up toward the above or below ground pipe.</p> <p>If 18" of clearance cannot be maintained when working around the above ground pipe or support assemblies, use of a spotter is required.</p> <p>Never drive onto or over B/G animal crossings without Engineering approval.</p> <p>Notify the MC of any accidents, incidents, or spills as soon as possible.</p> <p>Driving around gates or headache bars is prohibited except for off-road reconnaissance vehicles with a Winter Only Off-ROW Access Permit.</p> |                          |   | <p>Guidelines are aids in the safe and productive use of the workpad.</p> <p>Workpad travel speed should not exceed 25 MPH; conditions may require further speed reduction (i.e. LWCs, bridges, and auferis).</p> <p>Check ice thickness if water depth is unknown at low water crossings.</p> <p>Travel across Transverse levees (water bars) in the driveline; otherwise damage may result from high-centering vehicle or equipment.</p> <p>Winter reconnaissance vehicles may drive around workpad blockpoints while the Winter Only Off-ROW Access Permit (maximum ¼ mile from pipeline) is in effect. Caution should be taken if crossing heavily armored blockpoints.</p> <p>Driveline or track damage may occur when Tuckers are moved after breaking through ice and the tracks become hooked under the ice shell.</p> |                             |                                 |                          |   |
| <b>Close Out Permit With Issuing Authority When Work is Complete!</b>  |                          |   |  |                             |                                 |                          |   |

3459 Rev. 5 (2/04)

Figure 9. Form 3459, Pipeline Work Permit (Page 2)



# HOT WORK PERMIT

H- 010607-18

For work that uses or generates an ignition source or work on energized electrical circuits in Classified Areas. This permit is automatically suspended in the event of a spill of hydrocarbons in the vicinity, or the sounding of the Emergency Alarm until *All Clear* is announced. This permit may be cancelled by anyone.  
**RETURN THIS PERMIT TO ISSUING AUTHORITY WHEN WORK IS COMPLETE, OR BY THE END OF THE SHIFT, WHICHEVER COMES FIRST.**

|   |                                    |                              |
|---|------------------------------------|------------------------------|
| Permit Initiator/Company:<br>NWTS   | Person Doing Work:<br>Lyll Brasier | Date:<br>010607              |
| Specific Location/Equipment:<br>Tank Farm 20T0 Limitorque Switch Box  | Phone/Radio/Pager #:<br>UHF Ch 2   | Estimated # of Workers:<br>2 |
| Work Description: Open J Box, reterminate limitorque wires to change operating parameters, Tioga Heater operation, adjust inclement weather enclosure around 20T0, use power tools, vehicle entry |                                    | Control/MC No.:<br>18        |
|   |                                    | Time Start:<br>1000          |
|   |                                    | Time End:<br>1745            |

Procedure #: **SA-38 2.1**      Work Order #: **S020**

**HOT WORK PERMIT ITEMS TO CONSIDER (Checked boxes must have associated review on page 2)**

|  |  |   |
|--|--|---|
| <input type="checkbox"/> Cutting, Grinding, Welding in Classified Areas                  | <input type="checkbox"/> Energized Electrical Circuits in Classified Areas | <input type="checkbox"/> Hot Tap          |
| <input checked="" type="checkbox"/> Non-Intrinsically Safe Equipment in Classified Areas | <input checked="" type="checkbox"/> Heaters and Other Equipment            | <input type="checkbox"/> Energy Isolation |

**PLEASE CHECK APPROPRIATE RESPONSE**

|  | Yes                                 | No                                  | N/A                      |
|--|-------------------------------------|-------------------------------------|--------------------------|
| 1. Have affected personnel been briefed on job safety and requirements and on back of permit?                    | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> |
| 2. Is this work affected by, or does this work affect, other work or processes? If Yes, describe below           | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Have fire detection, gas systems, and/or suppression systems been isolated/By-passed? If Yes, describe below. | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 4. Could work cause Remote Alarms? If Yes, describe below.   | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 5. Is equipment monitored or controlled by OCC being taken out of service? If Yes, time OCC notified:            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 6. Have Shutdowns been disabled? If Yes, describe below  | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 7. Is Energy Isolation/Lockout necessary? If Yes, Tag or Mastercard Number: <b>44166 D</b>                       | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> |
| 8. Has designated fire watch been assigned, with appropriate equipment? List name(s): <b>Lyll Brasier</b>        | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> |
| 9. Is Gas Test Required?   | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> |
| 10. Is Continuous Gas Test required?   | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

|                          |                                |                 |                                |                  |                   |                 |                   |                    |
|--------------------------|--------------------------------|-----------------|--------------------------------|------------------|-------------------|-----------------|-------------------|--------------------|
| Initial Gas Test         | % O <sub>2</sub> : <b>20.8</b> | % LEL: <b>0</b> | H <sub>2</sub> S ppm: <b>X</b> | CO ppm: <b>X</b> | THC ppm: <b>X</b> | Other: <b>X</b> | Time: <b>0830</b> | Tester: <b>JRB</b> |
| Extended/Retest Gas Test | % O <sub>2</sub> :             | % LEL:          | H <sub>2</sub> S ppm:          | CO ppm:          | THC ppm:          | Other:          | Time:             | Tester:            |

**SPECIAL INSTRUCTIONS:**  
 Heater operation per SA-38 2.1  
 1/2 hour fire watch  
 FRC PPE  
 EI Open breaker for 20T0 (MCC 4702 RJ2), lock and tag Danger  
 Use DMM to verify no energy at J Box

**PERMIT AUTHORIZATIONS**

INITIATING SHIFT Signature (Badge # if required)  
 Area Operator: **WE Hawk**       Verbally  
 Person Doing the Work:  
**Lyll Brasier**      **Lyll Brasier**  
 Issuing Authority: **JW Musgrove**      **Bob Bandy**

EXTENDING SHIFT (See page 2, Permit Extension Requirements)  
 Area Operator:       Verbally  
 Person Doing the Work:  
 Issuing Authority:

**PERMIT CLOSEOUT**

|  | Yes                                 | No                                  | N/A                      |
|--|-------------------------------------|-------------------------------------|--------------------------|
| 1. Has the work Area and/or Equipment been cleaned up? | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Has the Area Operator been notified?                | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> |

3. Post Work Comments: **Reissue**

Person Doing The Work: **Lyll Brasier**      Time: **1800**      Date: **1/06/07**

5. Have other affected areas, e.g. OCC, been notified of status of this permit?                 

6. All Isolated, By-Passed, or Shutdown systems returned to normal? If not, Have EIT or EOS logs been updated?                 

7. Area Operator/Control Room/SPOC/Issuing Authority or Delegate: **JW Musgrove**      Time: **1800**      Date: **1.6.7**



# HOT WORK PERMIT

Any individual may cancel this work permit at any time if they consider conditions or work methods to be unsafe. Anyone Canceling a work permit must: a) Inform the person doing the work; b) Remove the site copy of the permit; and c) Return it to the Issuing Authority/SPOC, giving reasons for their actions.

|   | YES  | N/A                                 | Hot Work Permit Items To Consider   | H- 010607-18                       |
|---|--|-------------------------------------|---|------------------------------------|
| Cutting, Grinding, Welding in Classified Areas        | <input type="checkbox"/>   | <input type="checkbox"/>            | Fire extinguishers present and in required location?  |                                    |
|   | <input type="checkbox"/>   | <input type="checkbox"/>            | Reviewed SA-38, Requirement 1.19, Welding and Flame Cutting, especially 1.19.6.4, Fire Prevention and Protection?   |                                    |
|   | <input type="checkbox"/>   | <input type="checkbox"/>            | Sumps/drains checked and covered within 35'?  |                                    |
|   | <input type="checkbox"/>   | <input type="checkbox"/>            | Welding screens required?   |                                    |
|   | <input type="checkbox"/>   | <input type="checkbox"/>            | Proper eye protection?  |                                    |
|   | <input type="checkbox"/>   | <input type="checkbox"/>            | Is a welding procedure required?  |                                    |
| Non-Intrinsically Safe Equipment in Classified Areas* | <input checked="" type="checkbox"/>  | <input type="checkbox"/>            | Power tools, cameras, test equipment, vehicles?   |                                    |
|   | <input type="checkbox"/>   | <input checked="" type="checkbox"/> | Fire Detection/Suppression systems need to be bypassed?   |                                    |
| Energized Electrical Circuits in Classified Areas     | <input type="checkbox"/>   | <input type="checkbox"/>            | Fire Detection/Suppression systems need to be bypassed?   |                                    |
|   | <input type="checkbox"/>   | <input type="checkbox"/>            | Visual inspection only?   |                                    |
|   | <input type="checkbox"/>   | <input type="checkbox"/>            | Testing/Troubleshooting?  |                                    |
|   | <input type="checkbox"/>   | <input type="checkbox"/>            | Removal/Replacement/Re-work required?   |                                    |
|   | <input type="checkbox"/>   | <input type="checkbox"/>            | Are safe work practices in place per SA-38?   |                                    |
| Heaters and Other Equipment                           | <input checked="" type="checkbox"/>  | <input type="checkbox"/>            | Are heaters and equipment monitoring requirements specified?  |                                    |
|   | <input checked="" type="checkbox"/>  | <input type="checkbox"/>            | Fire extinguishers present and in required locations?   |                                    |
|   | <input checked="" type="checkbox"/>  | <input type="checkbox"/>            | Have Bonding and Grounding requirements been met?   |                                    |
|   | <input checked="" type="checkbox"/>  | <input type="checkbox"/>            | Proper clearance from equipment (cable trays, piping, fuel tanks, etc.)?  |                                    |
| Hot Tap   | <input type="checkbox"/>   | <input type="checkbox"/>            | Is Hot Tap procedure in place?  |                                    |
|   | <input type="checkbox"/>   | <input type="checkbox"/>            | Flow level requirements met?  |                                    |
|   | <input type="checkbox"/>   | <input type="checkbox"/>            | Pressure requirements met?  |                                    |
|   | <input type="checkbox"/>   | <input type="checkbox"/>            | Is line clearly surveyed/marked for hot tapping?  |                                    |
|   | <input type="checkbox"/>   | <input type="checkbox"/>            | Reviewed <i>Cutting, Grinding, Welding in Classified Areas</i> checklist?   |                                    |
| Energy Isolation                                      | <input checked="" type="checkbox"/>  | <input type="checkbox"/>            | Single Source Energy Isolation? (List Tag Number on Line 7 of opening section)  |                                    |
|   | <input type="checkbox"/>   | <input checked="" type="checkbox"/> | Standard/Mastercard Energy Isolation? (List Tag Numbers/Mastercard Number on Line 7 of opening section)   |                                    |
|   | <input checked="" type="checkbox"/>  | <input type="checkbox"/>            | Isolation device(s) <input checked="" type="checkbox"/> Breakers <input type="checkbox"/> Valve(s) <input type="checkbox"/> Other Listed with: <input checked="" type="checkbox"/> Special Instructions <input type="checkbox"/> Mastercard |                                    |
|   | <input checked="" type="checkbox"/>  | <input type="checkbox"/>            | Method of Isolation listed <input type="checkbox"/> In SOP/SMP <input type="checkbox"/> Document In or with: <input checked="" type="checkbox"/> Special Instructions <input type="checkbox"/> Mastercard                                   |                                    |
|   | <input checked="" type="checkbox"/>  | <input type="checkbox"/>            | Verified by Method <input checked="" type="checkbox"/> VOM <input type="checkbox"/> Gauge <input type="checkbox"/> Other Listed with: <input type="checkbox"/> Special Instructions <input type="checkbox"/> Mastercard                     |                                    |
|   | <input type="checkbox"/>   | <input checked="" type="checkbox"/> | Contingency Plan ID'd <input type="checkbox"/> In SOP/SMP <input type="checkbox"/> Document In or with: <input type="checkbox"/> Special Instructions <input type="checkbox"/> Mastercard   |                                    |
| PERMIT EXTENSION REQUIREMENTS                         | 1. Extension will only be issued to the original <i>Person Doing Work</i> .            |                                     |   | 2. No change in work scope.        |
|   | 3. Extension to be signed by incoming <i>Issuing Authority and Person Doing Work</i> . |                                     |   | 4. New Gas Test will be performed. |
| Designated Worker                                     | Signature  |                                     |   | Time                               |
| <input type="checkbox"/>                              |  |                                     |   |                                    |

**Close Out Permit With Issuing Authority When Work Is Complete!**

**PROBABLE VIOLATION 7:  
Tank 190 Vent Fire**

**PHMSA POSITION**

**Pertinent Regulation:**

49 CFR §195.402 Procedures Manual for Operations, Maintenance and Emergencies

- (a) General. Each operator shall prepare and follow for each pipeline system a manual of written procedures for conducting normal operations and maintenance activities and handling abnormal operations and emergencies. This manual shall be reviewed at intervals not exceeding 15 months, but at least once each calendar year, and appropriate changes made as necessary to insure that the manual is effective. This manual shall be prepared before initial operations of a pipeline system commence, and appropriate parts shall be kept at locations where operations and maintenance activities are conducted.
- (c) Maintenance and normal operations. The manual required by paragraph (a) of this section must include procedures for the following to provide safety during maintenance and normal operations.
- (3) Operating, maintaining, and repairing the pipeline system in accordance with each of the requirements of this subpart.

**Findings:**

Alyeska's Hot Work Permit procedures SA-38 1.15, as referenced in OM-1, are grossly deficient because:

The permit procedures do not adequately address ignition sources. The permit allowed two ignition sources, an industrial heater and a running vehicle, to be within the break out tank area in areas near facilities where the potential exists for the presence of flammable liquids, vapors and gases.

The permit process does not adequately identify hazard recognition and risk mitigation. The permit did not address controlling flammable vapors from an unexpected relief event. Item No. 7 in the permit states that, "Energy Isolation is necessary," yet Alyeska did not isolate pressure energy from the work in the break out tank area.

The permit process does not address the serious risks associated with conducting simultaneous operations and maintenance activities on the TAPS system. As relevant to the January 6, 2007 fire at PS9, the permit process fails to address the risk of conducting maintenance inside a break out tank area while performing activities related to Strategic Reconfiguration, where there is likelihood of an unexpected pipeline shutdown and relief event. It appears that there is inadequate communication among different parts of Alyeska regarding such activities.

**Proposed Civil Penalty:**

Regarding Item 7, the Compliance Officer has reviewed the circumstances and supporting documentation involved in the probable violation(s) and has recommended that Alyeska be preliminarily assessed a civil penalty in the amount of \$42,000.00.

**Proposed Compliance Order:**

In regard to Item Number 7 of the Notice pertaining to Alyeska's deficient Hot Work procedures, Alyeska shall modify its permitting process to identify necessary hazard recognition and risk mitigation, including, but not limited to, identification of any necessary energy isolation. Alyeska shall also conduct a study of the risks associated with conducting simultaneous operations and maintenance activities on the TAPS system, including, but not limited to, conducting maintenance inside a break out tank area while performing activities related to Strategic Reconfiguration. This study shall analyze the risks that can result from the interface of multiple activities on TAPS. Alyeska shall then add or modify its procedures as necessary to address such risks. Such new or modified procedures shall include mechanisms for communicating and integrating information among the various components of Alyeska to reduce or eliminate such risks. Within sixty (60) days of receipt of the Final Order Alyeska shall conduct the study and develop and submit the procedures, including any new or modified procedures resulting from the study required above, to the Director for approval. Within sixty (60) days of approval or modification of the procedures by the Director, Alyeska shall implement the procedures.

**ALYESKA PIPELINE SERVICE COMPANY'S RESPONSE**

**Summary:**

Alyeska Pipeline Service Company (Alyeska) respectfully disagrees with PHMSA's finding that Alyeska's Hot Work Permit procedures in SA-38 1.15 were grossly deficient by allowing ignition sources within the breakout area of Tank 190, not adequately identifying potential flammable vapors, and not addressing simultaneous operations and maintenance activities on the TAPS system. Alyeska requests that the finding and the proposed compliance order be withdrawn, and PHMSA reconsider the proposed civil penalty.

**Discussion:**

Alyeska's Hot Work Permit procedures are sufficient to comply with §195.402(c). The purpose of the Hot Work Permit procedures in Alyeska's SA-38 is to address potential hazards while working in a Class I area as defined by the National Electrical Code (NEC) where there is a potential of flammable gases or vapors. Alyeska's Hot Work Permit procedures in SA-38, Section 1.15, were developed to evaluate and document control measures for potential fire and explosion hazards before beginning work in a Class I area. Heaters and other equipment (ignition sources), energy isolation or lockout, and other affected operations were addressed by the permit system in place on January 6, 2007 at the time of the vent fire. (See Exhibits 15 and 16).

However, as found in the root cause incident investigation, the employee who placed the heater in the tank breakout area was not following Alyeska's written procedures for the hot work permit and portable industrial heaters requirements respectively in SA-38 Section 1.15, Work Permits, and Section 2.1, Portable Industrial Heaters.

Alyeska strives to continually improve its processes to increase safety and reduce the possibility of human error. In response to the root cause incident investigation, Alyeska created a work team with representative from process engineering, fire and safety, operations, maintenance, and compliance to perform process hazard analyses on tank farms, sumps, vents and drains. This team was responsible for identifying the risks and means of mitigation those process hazards and developing a training program to educate the workforce on these risks. (See Exhibit 17). As of February 20, 2008 the team has conducted Process Safety training for over 300 engineering, operations and maintenance people who work on the TAPS.

In addition, Alyeska has revised its access control operations procedures for the pipeline and Valdez tank farms. These procedures were revised to control personnel access, restrict vehicle and standing equipment use, require hot work permits, and isolate crude oil relief events into the tanks while maintenance and operations are being conducted in the tank farms. (See Exhibits 18 through 21)

With regard to Finding 7, Alyeska respectfully requests that the finding be withdrawn because Alyeska's procedures comply with §195.402 requirements. Alyeska requests that the proposed compliance order be withdrawn as Alyeska has already completed the requirements in the proposed order. With regard to the proposed civil penalty, Alyeska requests that PHMSA reconsider the proposed civil penalty.

#### **SUPPORTING DOCUMENTATION**

Exhibit 15 – SA-38, Section 1.15 Work Permits, Ed. 5, Rev. 21, Dec. 21, 2006

Exhibit 16 – SA-38, Section 2.1 Portable Industrial Heaters, Ed. 5, Rev. 21, Dec. 21, 2006

Exhibit 17 – PS9 Tank Vent Fire Root Cause Investigation, pp. 1-2

Exhibit 18 – N-1 00 13 Pump Station Tank Farm Access Control Operating Procedure

Exhibit 19 – BWT-1 20 Restriction of BWT Tank Farm Access Operating Procedure

Exhibit 20 – BWT-1 22 90s Tank Farm Control Operating Procedure

Exhibit 21 – OMS-3 14 East and West Tank Farm Access Control Operating Procedure

## 1.15 Work Permit System

### 1.15.1 Purpose

The purpose of the Work Permit System is to coordinate, authorize, and communicate work that must be controlled, in order to minimize the hazards associated with operating, maintaining, and modifying the Trans Alaska Pipeline System (TAPS).

### 1.15.2 Scope

Personnel who have not received the requisite training in the Work Permit System and proper orientation shall not be allowed to issue permits for such work at Alyeska facilities. All personnel who perform work that must be controlled, or who issue permits for such work at Alyeska facilities must become familiar with the Work Permit System outlined in this requirement. There may be additional procedures that have been adopted by local supervision.

### 1.15.3 References

- *FG-78, Operating, Maintenance & Emergency Plans for the Fuel Gas Pipeline*
- *MR-48, Trans-Alaska Pipeline Maintenance and Repair Manual*
- *SA-38, Corporate Safety Manual*
- SAF/075, "Work Permit Writing and Issuing"
- *29 CFR 1910, "Occupational Safety And Health Standards"*
- *29 CFR 1926, "Safety And Health Standards For Construction"*
- *33 CFR 154, "Facilities Transferring Oil Or Hazardous Material In Bulk"*
- International Safety Guide for Oil Tankers and Terminals (ISGOTT)
- National Fire Protection Association (NFPA) 70E, "Standard for Electrical Safety Requirements for Employee Workplaces"

### 1.15.4 Titles and Responsibilities

Position titles may vary within operating areas. At times there may be more than one individual within a position category. When this occurs, responsibilities will be assigned to specific individuals and communicated to all affected parties prior to initiating work. It is everyone's responsibility to prevent an operation from being performed which has the potential to cause the area or equipment to become unsafe while the permit is in effect. Consideration should be given to simultaneous operations. For the purposes of this requirement, the following are example titles of positions and their defined responsibilities:

#### NOTES

1. The SERVS Support Contractor may administer all Work Permit activities germane to their activities at the SERVS base and warehouse complex.
2. The Maintenance Coordinators will issue and administer Pipeline Work Permits.

#### **1.15.4.1 Issuing Authority**

This title refers to the First-Line Supervisor, Area Operator, Lead Operator, Control Room Operator, Maintenance Coordinator, or SPOC who has issued the permit.

Responsibilities include but are not limited to:

1. Conduct detailed job discussions, assessment of hazards, and establish precautions needed to accomplish tasks safely.
2. Ensure that all necessary Gas Tests for explosive, flammable, toxic, or other hazardous conditions are conducted.
3. Ensure that all hollow spaces, cavities, or containers are tested and vented to permit the escape of air or gases prior to preheating, burning/cutting, or welding.
4. Ensure safe conditions for the permit and necessary tests are performed for flammable and/or other hazardous conditions immediately prior to the start of Hot Work, or when work is suspended or stopped for cause.
5. Inform Fire Watch of potential fire hazards.
6. Complete the permit questions and checklist to ensure compliance with all items specific to the work.
7. Assure that Energy Isolation is followed consistent with SA-38, 1.16, "Energy Isolation."
8. Notify all personnel and areas affected by the permit.
9. Notify local supervision, if required by them, that a permit has been requested.
10. Ensure that the Person Doing Work knows the location of the nearest communications equipment and applicable safety devices.
11. Sign as authorizing authority for Permits after ensuring that the permit is correctly filled out.
12. A copy of the Work Permit shall be posted in the Control Room or held in clearly marked holders at the place of issue.
13. Advise relief person of any outstanding permits.
14. Verify that all permit closeout sections have been completed.

#### **1.15.4.2 First-Line Supervisor**

This title refers to the Alyeska Supervisor responsible for all work which is permitted under their jurisdiction.

Responsibilities include but are not limited to:

1. Assure Issuing Authority has received appropriate Permit Training (SAF/075) and has thorough knowledge of the area in which work is being permitted.
2. Ensure that provisions of the Work Permit System are adhered to in their area of responsibility (such as reviewing permits, reviewing work in progress, conducting self-assessments, etc.).
3. Assist Issuing Authority through detailed job discussions, assessment of hazards, and establishment of precautions needed to accomplish tasks safely.
4. Approve requests (may be verbal) for when and where weekly Unit Work Permits may be issued.

5. Conduct Safety Stand-downs as required.
6. Communicate additional local controls as required.

#### 1.15.4.3 Area Operator

This title refers to the person responsible for the area in which the work is permitted.

Responsibilities include but are not limited to:

1. Acknowledge the permit and awareness of work to be performed by signing Work Permits. In the event the technician cannot sign the permit, technician may verbally acknowledge via radio or telephone. This proxy will be noted by the Issuing Authority who will mark the box "Verbally" on the permit endorsement block designated for the Area Operations Technician and print the Area Operator's name.
2. Perform or verify that all necessary Gas Tests for explosive, flammable, toxic, or other hazardous conditions are conducted.
3. Ensure/Verify combustible materials are covered or removed when cutting, grinding, or welding within a 35 foot area.
4. Perform Energy Isolation per SA-38, 1.16, "Energy Isolation."
5. Check availability and suitability of fire extinguishing equipment and/or other applicable safety equipment in the area.
6. Monitor the work, as appropriate, to ensure the conditions of the permit are not changing.
7. Inspect the work site to re-verify permit requirements after any interruption/emergency has occurred, prior to resuming work.
8. After work has been completed, at the discretion of the Area Operator, the permitted work area will be checked for safe conditions.
9. Advise the relief operator of any permits still in effect.

#### 1.15.4.4 Person Doing Work

This title refers to the person to whom the permit is issued.

**Note**

Permits will only be issued to personnel actually performing the permitted work. Endorsing multiple permits for multiple crews will not be allowed.

Responsibilities include but are not limited to:

1. Read and understand the conditions of the issued Work Permit before starting the job, and signify this understanding by signing the Work Permit.
2. Post the working copy of the permit at the work area or with the Person Doing Work if it cannot be posted at the job site.
3. Comply with Energy Isolation per SA-38, 1.16, "Energy Isolation."
4. Inspect the area to confirm safe working conditions. Ensure that the work crew knows location and operation of nearest safety and communication equipment such as telephone, fire alarm, emergency communication system, fire extinguisher, safety shower, first aid kit, etc., before starting work.

5. Be constantly aware of conditions in the immediate work area, and be ready to stop work if conditions change. Do not resume work without approval of the Issuing Authority.
6. Notify Issuing Authority when the job is suspended, completed, or when planned work or conditions change. Include such information as condition of site, any hazards, and scope of work completed.
7. Maintain radio contact with Issuing Authority or CRO/area operator as required.
8. Advise other workers of any special precautions or conditions pertaining to the job.
9. Appropriately mark the Closeout or Extension section of all issued Work Permits.
10. Clean up and secure the work area after completion of work each shift. At the end of the shift or upon completion of the work, whichever comes first, notify the Area Operator, return the permit to the Control Room or designated location, and complete the Closeout portion on the permit copy of record.

#### **1.15.4.5 Initiator/Requester**

This title refers to the person who initiates or requests the permit. This may or may not be the Person Doing Work.

#### **1.15.4.6 On-site Supervisor of Person(s) Performing the Work**

Responsibilities include but are not limited to:

1. Ensure that the necessary permit has been obtained before starting the job.
2. Assist operations/maintenance personnel through detailed job discussions and by helping to establish precautions needed to accomplish tasks safely.
3. Provide input to and help accomplish the safety requirements as outlined in the "special instructions" box of the permit.
4. Ensure that all endorsements have been made and that the Issuing Authority fully understands the job scope for which the permit was issued.
5. Monitor work for compliance to safety requirements.

#### **1.15.4.7 Alyeska or Contractor Safety Specialist**

It is recognized that not all work sites have full time Safety Department coverage, or that Safety Department availability may be minimal. When this is the case, Safety Department responsibilities, as required by the standards of this Safety Manual, may be delegated to a First Line Supervisor or other qualified person with documentation and concurrence.

When requested by Issuing Authority, the Alyeska or Contractor Safety Specialist shall provide an independent assessment of the work area and sign in the Special Instructions box of the permit for any work involving:

1. Burning, grinding, or welding (excluding buffing) on any process piping that has not been depressurized, blinded, or purged.
2. Piping used exclusively in seawater, water service, steam, and for which there is no potential for explosive atmospheres or hydrocarbon entry into the system are excluded from this requirement.

For Confined Spaces, the Alyeska or Contractor Safety Specialist shall:

1. Verify that the space has been properly prepared.
2. Test for oxygen content, flammability, toxic materials, and/or other hazards prior to entry.
3. After the permit is signed by the Issuing Authority, make the first entry into the enclosure, if necessary, to complete the safety evaluation.
4. Coordinate any special precautions and sign the Confined Space Entry Permit.
5. Endorse all Hot Work Permits that might affect the Confined Space Entry Permit, as requested by the Issuing Authority.
6. Participate in the identification of any restrictions that may be imposed on the permit.
7. Ensure the appropriate Alyeska procedures are followed and documented when re-classifying a confined space.
8. Determine whether or not a retrieval system or other emergency response equipment is required at the job site.
9. Assist operations personnel with preparation of Hot Work Permit in conjunction with Confined Space Entry Permit by inspecting job sites, conducting Gas Tests, helping to determine area classification, assigning Confined Space classifications, and reviewing special instructions on permits as needed.
10. Assist supervision in assessing the training of all responsible parties to ensure they can safely perform their work according to permit requirements.
11. Perform safety functions when requested for special projects outside normal routine work (e.g., tank entry, turnarounds, live tie-ins, etc.).
12. Assist in establishing special precautions when warranted by work activities.

#### **1.15.4.8 Fire Watch**

A Fire Watch shall be required, regardless of the NEC classification, whenever flame cutting, grinding, or welding activities are conducted in locations where a fire might develop or where any of the following conditions exist:

1. Appreciable amounts of combustible material (e.g., building materials) are closer than 35 feet away from the flame cutting, grinding, or welding work.
2. Appreciable amounts of combustibles are more than 35 feet away from the flame cutting, grinding, or welding work, but could be easily ignited by sparks.
3. Wall or floor openings within a 35 feet radius expose combustible material in adjacent areas, including concealed spaces in walls or floors.
4. Combustible materials are adjacent to the opposite side of metal partitions, walls, ceilings, or roofs and could possibly be ignited by conduction or radiation.

Fire Watches at Alyeska facilities shall have appropriate fire extinguishing equipment, a hand held two-way radio readily available, and be trained in the use of both. They shall be familiar with procedures and equipment for sounding an alarm in the event of a fire.

Fire Watches shall remain alert and watch for indications of fires in all exposed areas and shall extinguish fires when obviously within the capacity of the equipment available, and if possible, sound the alarm prior to attempting extinguishment.

A fire watch shall be maintained for AT LEAST ONE HALF HOUR after completion of flame cutting, grinding, or welding operations to detect and extinguish possible smoldering fires.

**Note**

Fire Watch requirements may apply for portable industrial heaters and other heat-producing equipment as per SA-38.

### 1.15.5 Work Permit Requirements

The Work Permit System shall apply to all work activities that must be controlled and is performed by Alyeska personnel, contractors, and sub-contractors at all work locations under Alyeska supervisory responsibility, including pipeline road crossings, Mainline Valve locations, pipeline underground cooling systems, vaults, etc.

1. When completing or initiating the Unit, Hot and Pipeline Work Permits, all fields of the permit must be addressed except as follows:
  - a. *Extended To* and *Extending Shift*, if there was no extension.
  - b. If a Gas Test was checked *No* or *N/A* then no Gas Test Results need be filled in.
  - c. *Check Boxes* not checked that refer to Page 2 need not be marked.
  - d. Optional boxes unless directed there by the permit.
  - e. The use of *N/A*, *No*, *None*, or a slash (/ or -) is acceptable to indicate that a response was considered.
2. For Excavations, any work of a civil nature, or activities that require lifting over the mainline pipe, the local MC should be consulted prior to issuing the permit.
3. For Confined Space Entry Permit, and Work Permits associated with the Confined Space Entry Permit, all fields must be completed.
4. For line-by-line instructions on using the forms of the Work Permit System, see training module SAF/075, which is available from Alyeska Training and Development or on the Alyeska A-Net.

#### 1.15.5.1 Time Limits

##### 1.15.5.1.1 Duration, Extension and Closeout of Permits

1. Duration

All permits should be issued to cover the period required to accomplish the tasks, subject to these limitations:

- a. Unit and Hot Work Permits are normally issued not to exceed one work shift (12 hours) although, with proper endorsement by incoming personnel, they may be extended through the next shift.
- b. Confined Space Entry Permits shall be issued for only one work shift (12 hours) and shall not be extended.
- c. Unit Work Permits may be issued for a maximum of one week as determined by supervision.

- d. Pipeline Work Permits may be issued for the required time to complete a defined job task.
2. Extension

Permits will be in effect until job completion and may be extended past the work shift consistent with the following Work Permit Extension Requirements:

- a. Extensions may only be issued to original Persons Doing Work.
- b. A new Gas Test must be performed if required on original issuance.
- c. There is no change in work scope.
- d. Signatures by incoming Issuing Authority and Persons Doing work are required on all permit copies.

**Note**

If work deviates from the permit as issued, a new permit must be issued.

3. Permit Closeout
- a. Permits should be returned to Issuing Authority as soon as work is complete or at end of shift, whichever comes first.
  - b. The Person Doing Work will complete applicable Permit Closeout section.
  - c. Post Work Comments should include such things as, can equipment be run, does oil need to be added, any precautions, work complete, etc.

#### 1.15.5.2 Stop Work

It is the responsibility of all personnel working on Alyeska property or facilities to stop any work that may be unsafe to personnel, equipment, facilities or the environment.

If work is stopped for unsafe conditions, applicable permits shall be cancelled.

If work is stopped for tank venting, all work shall be suspended until the work area is deemed safe. The permit can then be used again and work resumed.

#### 1.15.5.3 Facility Map

Each Alyeska location/facility which issues Work Permits must prepare a Facility Map which clearly identifies all United States Coast Guard (USCG) regulated areas (Valdez Marine Terminal and SERVS) and NEC-defined Class I areas.

This map will be used by all Work Permit Issuing Authorities as a guide to determine whether or not a Work Permit is mandated by regulation. Additional areas may be identified on the local Facility Map, as conditions or requirements change, which would also require a Work Permit before any work is to be authorized. Managerial discretion could also authorize this Facility Map to include:

- 1. Laydown areas where daily, weekly, or longer permits are authorized.
- 2. Approved "shop" areas where Work Permits are not normally required.
- 3. Other pertinent markings local management may desire, such as approved smoking areas.
- 4. Areas where PSM regulations apply.

5. In the absence of such a facility/location map, all areas will be considered to be controlled areas and appropriate Work Permits must be issued.
6. Area maps may be given to contractors to assist them in identifying areas that require Work Permit authorizations.

#### **1.15.5.4 Verbal Approval of Work Permits at Remote Locations on the Pipeline**

The procedures for verbal approvals are intended to enhance the ability to perform work in a timely manner.

When Work Permits at remote locations are issued and/or closed using verbal, telephone/radio, or faxed communication between the Issuing Authority and Person Doing Work, the following requirements must be met:

1. A completed and signed copy of the current Work Permit, in compliance with all sections of this requirement, must be kept by the Issuing Authority.
2. An additional copy of the Work Permit must be posted at the work site.
3. At the completion of the work, the Work Permit must be returned in a timely manner to the Issuing Authority. The copy of the Work Permit at the work site may be signed as closed, and faxed, delivered, or mailed to the Issuing Authority.

#### **1.15.5.5 Unit Work Permit, Form 0161**

The Unit Work Permit is used to authorize work activities that must be controlled but do not present any of the hazards normally associated with Hot Work in Classified Areas or Confined Spaces.

A Unit Work Permit is appropriate for the following types of work:

1. Activities that require work related to general maintenance.
2. Activities that will not introduce a source of ignition into NEC Class I areas.
3. Activities that require Hot Work in unclassified areas.
4. Activities that require work on energized electrical systems over 50 volts in unclassified areas. The following criteria apply:
  - a. Persons Doing Work shall follow safe work practice guidelines per NFPA 70E, and OSHA 29 CFR 1910 and/or 29 CFR 1926.
  - b. Certain cabinets containing control voltages and equipment may also contain exposed terminals that are at a higher potential. Jobs that require electrical rework or personnel exposure in such cabinets may require additional safeguards, including additional qualified persons present as needed for job safety.
  - c. Only qualified persons may work on electrical circuits or equipment that have not been deenergized.
  - d. Two qualified persons may be required when working on electrical circuits or equipment.

**Note**

Bench work in a shop which is deemed not to be hazardous does not typically require a Work Permit.

5. Excavations, to be performed per guidelines in 2.6, "Excavation Safety."
6. The use of Ionization Radiation Equipment, The following criteria will apply:
  - a. Positive communication must be established with Area Operator and the operations supervisor whenever radiographic equipment is used within a 500 yard radius of any facility having ultraviolet (UV) detection/fire suppression systems.
  - b. The radiography crew must submit a work plan to the operations supervisor, or designee, describing the area where the radiography equipment will be used, what is to be examined, the expected duration of the job, the Single Point of Contact (SPOC), which areas will be restricted, and any other information that is pertinent to the work.
    - 1) Radiation emitting devices must remain locked within the transporting vehicle while preparations for testing are made. The radiography crew must notify the Area Operator before each test is made, and again after each test is completed.
    - 2) Applicable warning signs must be posted around the work area to warn personnel of radiation hazards.
    - 3) UV detection/fire suppression systems in the affected work area must be bypassed or shielded when radiography is performed at Pump Stations (refer to Section 3.4, "Bypassed, Damaged, or Inoperable Safety Devices").
    - 4) Positive communication must be established with Area Operator and the operations supervisor whenever radiographic work is completed and UV/fire suppression systems must be returned to normal conditions as per the work plan.
7. Activities that require work in a Permit Required Confined Space Reclassified as Non-Permit Required Confined Space.
8. Pressure testing.
9. Cutting, grinding, welding in non-classified areas.

#### **1.15.5.6 Hot Work Permit, Form 0162**

The Hot Work Permit is used to authorize activities that require special controls to prevent fire or explosion. The Hot Work Standard minimizes the potential of fire or explosion in Classified Areas by requiring a Hot Work Permit. The Issuing Authority may require Hot Work Permits based on Facility Operating Guidelines. Area Classification drawings and applicable industry standards will define the Classified Areas.

##### **1.15.5.6.1 Hot Work Permit Activities**

A Hot Work Permit is required but not limited to the following activities:

1. Open flame, burning, grinding or welding, within 75 feet of a Classified Area,
2. The use of non-intrinsically safe electrical tools and instruments in a Classified Area,
3. Work on electrical circuits including the opening of explosion proof boxes or junction boxes in a Classified Area,
4. Activities that require work on energized electrical systems in Classified Areas. The following criteria apply:
  - a. The area shall be Gas Tested.

- b. Person Doing Work shall follow safe work practice guidelines per NFPA 70E, and OSHA 29 CFR 1910 and/or 29 CFR 1926.
  - c. Certain cabinets containing control voltages and equipment may also contain exposed terminals that are at a higher potential. Jobs that require electrical rework or personnel exposure in such cabinets may require additional safeguards, including additional qualified persons present as need for job safety.
  - d. Only qualified persons may work on electrical circuits or equipment that have not been deenergized.
  - e. Two qualified persons may be required when working on electrical circuits or equipment.
5. The use of spark producing devices in a Classified Area.
  6. Hot work on portable and mobile containers which contain or have contained flammable or combustible materials.
  7. Impedance thawing.
  8. Hot Taps, to be performed per guidelines in SA-38, and/or MR-48 and FG-78.
  9. Heaters, cranes, and other equipment that may introduce an ignition source, operating within a Classified Area.

#### **1.15.5.6.2 Hot Work Permit Precautions**

The following precautions shall be taken before a Hot Work Permit is issued (if applicable):

1. Ensure compliance with SA-38, 1.19, "Welding and Flame Cutting," especially Section 1.19.6.4, has been met.
2. Ensure compliance with SA-38, 1.16, "Energy Isolation," has been met.
3. A qualified person (Alyeska or contractor) will Gas Test the area prior to the start of the work, and if necessary, continue to periodically Gas Test all affected work areas
4. A trained person has been assigned as the designated Fire Watch.
5. Fire and gas detection systems have been isolated or by-passed.
6. Fire blankets and catch basins are in place.
7. Appropriate fire extinguishing equipment is available at the work site.
8. Adequate ventilation has been established.
9. Sumps and drains have been checked and adequately covered within 35 feet of the work site.
10. Welding machines are grounded as close to the welding point as practical.

#### **1.15.5.7 Blinding and Variance Guidelines**

Alyeska's blinding requirements are provided in SA-38, 1.16, "Energy Isolation," and are consistent with the blinding requirements of the Alaska Safety Handbook with the exception that Alyeska does not require a variance for double block and bleed, including Hot Work Permits.

By Government regulation, variances are not permitted for a double block and bleed in lieu of blinding for cutting or welding on used drums, barrels, tanks, or other containers. Any pipelines or connections to the drum, tank, or vessel must be disconnected or blinded.

In cases of Hot Work on equipment which has been used exclusively in seawater, water service, or steam, and if there is no potential for explosive atmospheres or hydrocarbon entry into the system, a single block, as a minimum, is acceptable for isolation in lieu of blinding.

#### **1.15.5.8 Hot Work in Confined Spaces**

When arc welding is to be suspended (unattended for a period of 30 minutes or more), all electrodes must be removed from the holders and carefully located so that accidental contact cannot occur, and the machine must be disconnected from the power source or turned off.

When gas welding or burning/cutting, the torch valves must be closed and the gas supply to the torch positively shut off at some point outside the Confined Space whenever the torch is not being used for a substantial period of time (unattended for a period of 30 minutes or more). Where practical, the torch and hose must also be removed from the Confined Space.

When welding or burning/cutting is being performed in a Confined Space, the gas cylinders and welding machines must be left outside of the Confined Space.

After welding operations are completed, the welder must mark the hot metal or provide some other means of warning other workers.

Local exhaust and/or general ventilation must be adequate to keep the amount of toxic fumes, gases, or dust below maximum allowable concentrations or appropriate respiratory protection must be utilized.

#### **1.15.5.9 Hot Work on Berths 1, 3, 4, and 5 at VMT**

The *International Safety Guide for Oil Tankers and Terminals* defines Hot Work In Uncontrolled Loading Areas as work involving sources of ignition or temperatures sufficiently high enough to cause the ignition of a flammable gas mixture. This includes any work requiring the use of welding, burning, or soldering equipment, blow torches, some power driven tools, portable electrical equipment that is not intrinsically safe or contained within an approved explosion-proof housing, sandblasting, or internal combustion engines. The USCG will issue an annual welding and Hot Work Permit to the Terminal in accordance with *33 CFR 154*, "Facilities Transferring Oil Or Hazardous Material In Bulk." No further notifications to the USCG are required for work being performed on the berth relating to Hot Work. Specific rules are as follows:

1. Hot Work will not be performed on a berth with a tanker alongside during uncontrolled loading.
2. Hot Work will not be performed in the construction dock area when a tanker is alongside Berth 1 during transfer operations.
3. Hot Work will not be performed at the tug dock or in the immediate onshore area when a tanker is alongside Berth 3 during transfer operations.
4. Approved Hot Work may be permitted with a tanker alongside if all of the following conditions are met:
  - a. Hot Work is limited to the removal of explosion-proof housing in a Classified Area to set, adjust, or inspect electrical connections and limit switches.
  - b. Crude loading is vapor controlled. Hot Work will be immediately discontinued if tanker venting or any unusual conditions occur with the operation of the vapor control system.
  - c. Continuous Gas Testing during work.

- d. Signs have been placed at the 100-foot mark to show clear delineation.

**Note**

Notifications to the USCG may be necessary for Hot Work on the berths.

#### **1.15.5.10 Confined Space Entry Permit, Form 0160**

The Confined Space Entry Permit is used to authorize entry into Confined Spaces meeting one or more of the following characteristics:

1. Contains or has the potential to contain a hazardous atmosphere.
2. Contains a material that has the potential for engulfing an entrant.
3. Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross section.
4. Contains any other recognized serious safety or health hazards.

Examples of Confined Spaces that may meet the criteria identified above include, but are not limited to, process vessels, process towers, tanks, sumps, pits, sewers, compartments with a manhole, valve pits, well cellars, pipelines.

Authorization of work requires an appropriate Unit, Pipeline, or Hot Work Permit. In no circumstances will a Confined Space Entry Permit be issued without an appropriate Work Permit. All associated permits must be attached to the Confined Space Entry Permit on completion of work and retained for one year.

##### **1.15.5.10.1 General Considerations**

1. The Confined Space Entry Permit does not authorize work to begin. The Confined Space Entry Permit must be accompanied by an appropriate Unit, Pipeline, or Hot Work Permit.
2. When personnel entry into a Confined Space is required, job specific procedures shall be followed. The procedure will outline the draining, blinding, cleaning, inspection, and work to be performed. The detail of the procedure will be appropriate to the job. The procedure will be reviewed by all involved departments (including FSIH) before work begins.
3. Prior to entry, the contents and hazards of the Confined Space shall be identified. Whenever possible, tanks, vessels, and piping shall be cleaned by water washing, flushing, or steaming. Cleaning by hand should be limited to final cleanup unless no other cleaning process is feasible.
4. Prior to the entry, all potential sources of energy affecting the space shall be isolated in accordance with SA-38, 1.16, "Energy Isolation." Furthermore, vapor barriers are not an acceptable substitute for blinds.
5. All connecting lines to the vessel shall be physically disconnected and misaligned or blinded at a point as near to the space as possible.
6. Adequate ventilation shall be maintained in the Confined Space throughout the entry operation. All ventilation equipment shall be bonded and grounded. If mechanical ventilation is used, it must be located in such a manner that it will not introduce contaminants such as gas or toxic vapors. In addition, it should be placed in such a manner that it will not prevent egress from the space. This will be verified by the Alyeska or Contractor Safety Specialist, and monitored by the Attendant.
7. An area outside the Confined Space shall be made available for decontamination as necessary.

8. Retrieval Systems shall be used whenever an entrant enters a Confined Space, as covered by this section, unless the retrieval system would increase the overall risk of the entry or would not contribute to the rescue of the entrant. Alyeska or Contractor Safety Specialist will determine when retrieval systems are appropriate.
9. Any Hot Work in a location that may affect the Confined Space shall be approved by all parties who have authorized and signed the Confined Space Entry Permit. Any Hot Work performed within the boundaries of a Confined Space shall be approved and signed off by Alyeska or Contractor Safety Specialist and should be referenced to the Hot Work Section under the "Hot Work in a Confined Space" section. A Gas Test of the atmosphere where the Hot Work is to take place shall be performed by the Alyeska or Contractor Safety Specialist and documented on the Hot Work Permit.
10. Permit-Required Confined Space entry safety plans/procedures must be approved by the local supervisor, entry supervisor, and Field Safety representative and available at the entrance to the Permit-Required Confined Space.
11. The Entry Supervisor may add entrants to the Confined Space Entry Permit or Badge Board.
12. The Confined Space Entry Permit and associated written plans shall be kept for one year and reviewed annually for improvements in the Permit-required Confined Space Entry Program.

#### **1.15.5.11 Pipeline Work Permit, Form 3459**

The Pipeline Work Permit is used by Pump Station Maintenance Coordinators (MCs) to ensure that work being performed along the TAPS and Fuel Gas Line (FGL) Pipeline Right-of-Way (ROW) is performed safely and efficiently without damage or danger to personnel, property, or the environment. Pipeline Work Permits are also utilized for work activities outside the pipeline ROW such as River Training Structures, Oil Spill Containment Sites, airfields, and Operation Material Sites (OMS), and typically require additional agency permitting.

Along the ROW are fenced compounds that contain Remote Gate Valves (RGVs), Ledeen Operated Check Valves, Metering Facilities, Cathodic Protection Sites, and Main Line Refrigeration Units (MLRs). Unit, Hot, or Confined Space Entry Permits issued by the local Pump Station normally control any activities within these fenced areas.

The Maintenance Coordinator (MC) or designee has the authority and responsibility to control all activities in their area of responsibility along the pipeline ROW or off-ROW sites as indicated above by use of the Pipeline Work Permit or by verbal agreement with the Person Doing the Work, as appropriate.

In some cases, a line wide Pipeline Work Permit may be written by the Issuing Authority after coordination with the individual MCs responsible for each area along the pipeline. In this case, the Person Doing Work must notify the local MC in advance prior to commencing work in the MC's area, and interface with the MC to review details of the line wide Pipeline Work Permit prior to starting work. Upon completion of work in the local MC's area, the Person Doing Work notifies both the local MC and Issuing Authority. The Issuing Authority is responsible for permit closeout and notification to the individual MCs when the work associated with the line wide Pipeline Work Permit is complete.

The Pipeline Work Permit is appropriate for the following types of work:

1. Any new pipeline or pipeline modification work, to include Nondestructive Testing (NDT).
2. New construction adjacent to the pipeline.
3. Earthwork/excavation activities, mineral mining, hauling/stockpiling activities.

4. Cathodic Protection surveys, fuel gas line leak surveys.
5. Test station, monitor rod, fence, sign, gate installation, or repairs.
6. Bridge, above ground pipeline (support and insulation), transition and animal crossing maintenance, or repairs.
7. Routine workpad maintenance, river training structures, low water crossing, and culvert construction or repair.
8. Pigging activities, mainline valve DOT function tests, mainline valve winterization.
9. Work by third parties on the ROW.

**Note**

Other work permits as appropriate (Unit, Hot, or Confined Space Entry) shall apply to all locations that are covered by the Pipeline Work Permit.

**1.15.5.11.1 Pipeline Right-of-Way (ROW)**

The pipeline ROW is described as the land within which Alyeska is authorized to install, operate, and maintain the pipeline. For Work Permit activities, this term is normally used to identify any work area within the TAPS and Fuel Gas Line ROW that is outside of the Pump Station and Valdez Terminal perimeter fences.

1. The width of the ROW measured from pipeline centerline is variable and dependent on the landowner, pipeline mode, facilities, and special burial modifications. ROW widths for the pipeline on private lands vary on a case-by-case basis. Typical ROW widths are described in *MR-48* and *FG-78*.
2. Work that will result in the disturbance of vegetation outside the existing workpad embankment even though the work site may be within the formal pipeline ROW requires written landowner approval.

**1.15.5.11.2 General Considerations**

Reference *MR-48, Trans-Alaska Pipeline Maintenance and Repair Manual* or *FG-78, Operating, Maintenance & Emergency Plans for the Fuel Gas Pipeline*, for minimum approved requirements, guidelines, and methods to cover the majority of pipeline maintenance and repair situations.

**1.15.6 Definitions**

**1.15.6.1 NEC Class I Area**

An area in which flammable gases or vapors are or may be present in the air, in quantities sufficient to produce explosive or ignitable mixtures.

**1.15.6.2 Hot Work In Berth Uncontrolled Loading Areas**

Work involving sources of ignition or temperatures sufficiently high enough to cause the ignition of a flammable gas mixture. This includes any work requiring the use of welding, burning, or soldering equipment, blow torches, some power driven tools, portable electrical equipment that is

not intrinsically safe or contained within an approved explosion-proof housing, sandblasting, or internal combustion engines. (As defined by the *International Safety Guide for Oil Tankers and Terminals*.)

### **1.15.6.3 Work Permit**

A control document that authorizes all work activities that must be controlled in a particular area. Specific federal and state regulations require written Work Permits for Permit-Required Confined Space Entry and for cutting, grinding, and welding operations. Alyeska has also elected to use Unit Work Permits (*Form 0161*), Hot Work Permits (*Form 0162*), and Pipeline Work Permits (*Form 3459*) to control other types of work as well.

### **1.15.7 Training**

N/A

### **1.15.8 Records**

Quality and Non-Quality records driven by this requirement in SA-38 are listed below.

For record retention requirements, see the *Records Retention Schedule* located under Resources\Records\Records Retention Schedule on the A-Net.

#### **1.15.8.1 Quality Records**

- *Form 0160, Confined Space Entry Permit* (including all associated work permits)

#### **1.15.8.2 Non-Quality Records**

- *Form 0144, Work Log*
- *Form 0161, Unit Work Permit*
- *Form 0162, Hot Work Permit*
- *Form 3459, Pipeline Work Permit*



# CONFINED SPACE ENTRY PERMIT

|   |       |   |   |  |                       |   |                          |   |                          |   |               |   |   |
|---|-------|---|---|--|-----------------------|---|--------------------------|---|--------------------------|---|---------------|---|---|
| <b>C-</b>   |       |   |   |  |                       |   |                          |   |                          |   |               |   |   |
| THIS PERMIT IS FOR ENTRY ONLY. IF WORK IS TO BE PERFORMED, A UNIT, HOT, OR PIPELINE WORK PERMIT MUST BE ATTACHED.   |       |   |   |  |                       |   |                          |   |                          |   |               |   |   |
| If this permit requires entry into area subject to vapor releases, the person doing the entry MUST contact the Control Room for permission to enter the area and have continuous radio contact with the Control Room while in the area. This permit may be cancelled by anyone at any time. |       |   |   |  |                       |   |                          |   |                          |   |               |   |   |
| RETURN THIS PERMIT TO ISSUING AUTHORITY WHEN WORK IS COMPLETE, OR BY THE END OF THE SHIFT, WHICHEVER COMES FIRST.   |       |   |   |  |                       |   |                          |   |                          |   |               |   |   |
| Permit Initiator/Company:   |       |   | Entry Supervisor:   |  |                       |   | Date:                    |   |                          |   |               |   |   |
| Confined Space Location/Identification:   |       |   |   |  |                       |   | Control/MC No.:          |   |                          |   |               |   |   |
| Confined Space Description:   |       |   |   |  | Work Description:     |   |                          |   |                          |   |               |   |   |
| Entrants Listed On: <input type="checkbox"/> Badge Board <input type="checkbox"/> Permit page 2   |       |   |   |  | Attendant(s):         |   |                          |   |                          |   |               |   |   |
| List the Hazards of the Confined Space and those that may be created by the work:   |       |   |   |  |                       |   |                          |   |                          |   |               |   |   |
| <b>ACCEPTABLE ENTRY CONDITIONS OF INTERNAL/EXTERNAL HAZARDS (PLEASE CHECK APPROPRIATE BOXES)</b>  |       |   |   |  |                       |   |                          |   |                          |   |               |   |   |
| Area Posted/Barricaded  |       | <input type="checkbox"/> Yes <input type="checkbox"/> N/A |   | Purging Complete                       |                       | <input type="checkbox"/> Yes <input type="checkbox"/> N/A |                          | Pressure Relieved   |                          | <input type="checkbox"/> Yes <input type="checkbox"/> N/A | MSDSs On Site | <input type="checkbox"/> Yes <input type="checkbox"/> N/A |   |
| Piping Isolated   |       | <input type="checkbox"/> Yes <input type="checkbox"/> N/A |   | Ventilation Operating                  |                       | <input type="checkbox"/> Yes <input type="checkbox"/> N/A |                          | Electrical Isolation                                      |                          | <input type="checkbox"/> Yes <input type="checkbox"/> N/A |               | Other   | <input type="checkbox"/> Yes <input type="checkbox"/> N/A |
| Blinding Done   |       | <input type="checkbox"/> Yes <input type="checkbox"/> N/A |   | Safe Access/Egress                     |                       | <input type="checkbox"/> Yes <input type="checkbox"/> N/A |                          | Rotating Equipment Disconnected                           |                          | <input type="checkbox"/> Yes <input type="checkbox"/> N/A |               |   |   |
| Safety Plans/Procedures/Variations reviewed and at the work site?   |       |   |   |  |                       |   |                          | <input type="checkbox"/> Yes <input type="checkbox"/> N/A |                          | Affected areas, e.g., OCC, Rescue Team notified           |               | <input type="checkbox"/> Yes <input type="checkbox"/> N/A |   |
| Will work being done in Confined Space introduce additional hazards?  |       |   |   |  |                       |   |                          | <input type="checkbox"/> Yes <input type="checkbox"/> N/A |                          | List associated Work Permits:                             |               | <input type="checkbox"/> Yes <input type="checkbox"/> N/A |   |
| If Yes, will Acceptable Entry Conditions mitigate the hazards?  |       |   |   |  |                       |   |                          | <input type="checkbox"/> Yes <input type="checkbox"/> N/A |                          |   |               |   |   |
| Is Continuous Gas Test equipment prepared?  |       |   |   |  |                       |   |                          | <input type="checkbox"/> Yes <input type="checkbox"/> N/A |                          |   |               |   |   |
| Atmospheric Limits:   |       | % O <sub>2</sub> :  | % LEL:  | H <sub>2</sub> S ppm:                  | CO ppm:               | THC ppm:  | Other:                   |   |                          |   |               |   |   |
| Initial Test Results:   |       | % O <sub>2</sub> :  | % LEL:  | H <sub>2</sub> S ppm:                  | CO ppm:               | THC ppm:  | Other:                   | Time:   | Tester:                  |   |               |   |   |
| Initial Gas Detection Equipment:  |       |   | Initial Gas Tester:   |  |                       | Verbal <input type="checkbox"/>                           |                          | Recording Frequency:                                      |                          |   |               |   |   |
| Attendant Communication w/Entrants:   |       |   | <input type="checkbox"/> Direct                                     | <input type="checkbox"/> Radio Channel |                       | <input type="checkbox"/> Air Horns                        |                          | <input type="checkbox"/> Specified in Safety Plan         |                          |   |               |   |   |
| Equipment Requirements:   |       |   | <input checked="" type="checkbox"/> PPE as specified in Safety Plan |  |                       | <input type="checkbox"/> Non-Entry Retrieval System       |                          | <input type="checkbox"/> Fall Protection                  |                          | <input type="checkbox"/> As listed on page 2              |               |   |   |
| Rescue Contact Person or Team:  |       |   |   |  | Contact Method:       |   |                          |   |                          |   |               |   |   |
| SPECIAL INSTRUCTIONS:   |       |   |   |  | PERMIT AUTHORIZATIONS |   |                          | Time  | Date                     |   |               |   |   |
|   |       |   |   |  | Area Operator:        |   |                          |   |                          |   |               |   |   |
|   |       |   |   |  | Safety Rep:           |   |                          |   |                          |   |               |   |   |
|   |       |   |   |  | Entry Supervisor:     |   |                          |   |                          |   |               |   |   |
| Issuing Authority:  |       |   |   |  |                       |   |                          |   |                          |   |               |   |   |
| PERMIT CLOSEOUT OR CANCELLATION   |       |   |   |  |                       |   | Yes                      | No  | N/A                      |   |               |   |   |
| 1. Has the work Area and/or Equipment been cleaned up?  |       |   |   |  |                       |   | <input type="checkbox"/> | <input type="checkbox"/>                                  | <input type="checkbox"/> |   |               |   |   |
| 2. Has the Area Operator been notified?   |       |   |   |  |                       |   | <input type="checkbox"/> | <input type="checkbox"/>                                  | <input type="checkbox"/> |   |               |   |   |
| 3. List Problems Encountered:   |       |   |   |  |                       |   |                          |   |                          |   |               |   |   |
| 4. Entry Supervisor:  |       |   | Time:   |  | Date:                 |   |                          |   |                          |   |               |   |   |
| <input type="checkbox"/> Permit Canceled  | Time: | Initials:   | Reasons:  |  |                       |   |                          |   |                          |   |               |   |   |
| 5. Have other affected areas, e.g. OCC, been notified of status of this permit?   |       |   |   |  |                       |   | <input type="checkbox"/> | <input type="checkbox"/>                                  | <input type="checkbox"/> |   |               |   |   |
| 6. All Isolated, By-Passed, or Shutdown systems returned to normal?   |       |   |   |  |                       |   | <input type="checkbox"/> | <input type="checkbox"/>                                  | <input type="checkbox"/> |   |               |   |   |
| 7. Issuing Authority:   |       |   |   |  | Time:                 |   | Date:                    |   |                          |   |               |   |   |

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Figure 6. Form 0160, Confined Space Entry Permit (Page 1)





# UNIT WORK PERMIT

|   |  |                    |  |                       |   |   |                          |                          |                          |                                   |  |  |  |  |
|---|--|--------------------|--|-----------------------|---|---|--------------------------|--------------------------|--------------------------|-----------------------------------|--|--|--|--|
| <b>U-</b>   |  |                    |  |                       |   |   |                          |                          |                          |                                   |  |  |  |  |
| <p>If this work requires entry into area subject to vapor releases, the person doing the work MUST contact the Issuing Authority for permission to enter the area and have continuous radio contact with the Issuing Authority while in the area. This permit may be cancelled by anyone at any time.<br/> <b>RETURN THIS PERMIT TO ISSUING AUTHORITY WHEN WORK IS COMPLETE, OR BY THE END OF THE SHIFT, WHICHEVER COMES FIRST.</b></p> |  |                    |  |                       |   |   |                          |                          |                          |                                   |  |  |  |  |
| Permit Initiator/Company:   |  |                    | Person Doing Work:   |                       |   | Date:                                     |                          |                          |                          |                                   |  |  |  |  |
| Specific Location/Equipment:  |  |                    | Phone/Radio/Pager #:   |                       | Estimated # of Workers:                                     |   | Control/MC No.:          |                          |                          |                                   |  |  |  |  |
| Work Description:   |  |                    |  |                       |   |   | Time Start:              |                          |                          |                                   |  |  |  |  |
|   |  |                    |  |                       |   |   | Time End:                |                          |                          |                                   |  |  |  |  |
| Procedure #:  |  |                    |  |                       | Work Order #:   |   |                          |                          |                          |                                   |  |  |  |  |
| <b>UNIT WORK PERMIT ITEMS TO CONSIDER (Checked boxes must have associated review on page 2)</b>   |  |                    |  |                       |   |   |                          |                          |                          |                                   |  |  |  |  |
| <input type="checkbox"/> Non-Permit Required Confined Space Entry   |  |                    | <input type="checkbox"/> Alternate Procedure Required Confined Space Entry     |                       |   | <input type="checkbox"/> Excavation       |                          |                          |                          |                                   |  |  |  |  |
| <input type="checkbox"/> Cutting, Grinding, Welding in Non-Classified Areas   |  |                    | <input type="checkbox"/> Energized Electrical Circuits in Non-Classified Areas |                       |   | <input type="checkbox"/> Energy Isolation |                          |                          |                          |                                   |  |  |  |  |
| <input type="checkbox"/> Pressure Testing   |  |                    | <input type="checkbox"/> Radiography   |                       |   |   |                          |                          |                          |                                   |  |  |  |  |
| <b>PLEASE CHECK APPROPRIATE RESPONSE</b>  |  |                    |  |                       |   |   | Yes                      | No                       | N/A                      |                                   |  |  |  |  |
| 1. Have affected personnel been briefed on job safety and requirements and on back of permit?   |  |                    |  |                       |   |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                                   |  |  |  |  |
| 2. Is this work affected by, or does this work affect, other work or processes? If Yes, describe below.   |  |                    |  |                       |   |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                                   |  |  |  |  |
| 3. Have fire detection, gas systems, and/or suppression systems been isolated/By-passed? If Yes, describe below.  |  |                    |  |                       |   |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                                   |  |  |  |  |
| 4. Could work cause Remote Alarms? If Yes, describe below.  |  |                    |  |                       |   |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                                   |  |  |  |  |
| 5. Is equipment monitored or controlled by OCC being taken out of service? If Yes, time OCC notified:   |  |                    |  |                       |   |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                                   |  |  |  |  |
| 6. Have Shutdowns been disabled? If Yes, describe below   |  |                    |  |                       |   |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                                   |  |  |  |  |
| 7. Is Energy Isolation/Lockout necessary? If Yes, Tag or Mastercard Number:   |  |                    |  |                       |   |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                                   |  |  |  |  |
| 8. Is Gas Test Required?  |  |                    |  |                       |   |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                                   |  |  |  |  |
| 9. Is Continuous Gas Test required?   |  |                    |  |                       |   |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                                   |  |  |  |  |
| Initial Gas Test  |  | % O <sub>2</sub> : | % LEL:   | H <sub>2</sub> S ppm: | CO ppm:   | THC ppm:                                  | Other:                   | Time:                    | Tester:                  |                                   |  |  |  |  |
| Extended/Retest Gas Test  |  | % O <sub>2</sub> : | % LEL:   | H <sub>2</sub> S ppm: | CO ppm:   | THC ppm:                                  | Other:                   | Time:                    | Tester:                  |                                   |  |  |  |  |
| SPECIAL INSTRUCTIONS:   |  |                    |  |                       | <b>PERMIT AUTHORIZATIONS</b>                                |   |                          |                          |                          |                                   |  |  |  |  |
|   |  |                    |  |                       | INITIATING SHIFT Signature (Badge # if required)            |   |                          |                          |                          |                                   |  |  |  |  |
|   |  |                    |  |                       | Area Operator:  |   |                          |                          |                          | <input type="checkbox"/> Verbally |  |  |  |  |
|   |  |                    |  |                       | Person Doing the Work:                                      |   |                          |                          |                          |                                   |  |  |  |  |
|   |  |                    |  |                       | Issuing Authority:  |   |                          |                          |                          |                                   |  |  |  |  |
|   |  |                    |  |                       | EXTENDING SHIFT (See page 2, Permit Extension Requirements) |   |                          |                          |                          |                                   |  |  |  |  |
| Area Operator:  |  |                    |  |                       | <input type="checkbox"/> Verbally                           |   |                          |                          |                          |                                   |  |  |  |  |
| Person Doing the Work:  |  |                    |  |                       |   |   |                          |                          |                          |                                   |  |  |  |  |
| Issuing Authority:  |  |                    |  |                       |   |   |                          |                          |                          |                                   |  |  |  |  |
| <b>PERMIT CLOSEOUT</b>  |  |                    |  |                       |   |   | Yes                      | No                       | N/A                      |                                   |  |  |  |  |
| 1. Has the work Area and/or Equipment been cleaned up?  |  |                    |  |                       |   |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                                   |  |  |  |  |
| 2. Has the Area Operator been notified?   |  |                    |  |                       |   |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                                   |  |  |  |  |
| 3. Post Work Comments:  |  |                    |  |                       |   |   |                          |                          |                          |                                   |  |  |  |  |
| 4. Person Doing The Work:   |  |                    |  |                       | Time:   |   | Date:                    |                          |                          |                                   |  |  |  |  |
| 5. Have other affected areas, e.g. OCC, been notified of status of this permit?   |  |                    |  |                       |   |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                                   |  |  |  |  |
| 6. All Isolated, By-Passed, or Shutdown systems returned to normal? If not, Have EIT or EOS logs been updated?  |  |                    |  |                       |   |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                                   |  |  |  |  |
| 7. Area Operator/Control Room/SPOC/Issuing Authority or Delegate:   |  |                    |  |                       | Time:   |   | Date:                    |                          |                          |                                   |  |  |  |  |

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Figure 7. Form 0161, Unit Work Permit (Page 1)



# HOT WORK PERMIT

| H-  |  |                    |  |                       |   |   |                          |                          |                          |                                   |  |  |  |  |
|---|--|--------------------|--|-----------------------|---|---|--------------------------|--------------------------|--------------------------|-----------------------------------|--|--|--|--|
| <p>For work that uses or generates an ignition source or work on energized electrical circuits in Classified Areas. This permit is automatically suspended in the event of a spill of hydrocarbons in the vicinity, or the sounding of the Emergency Alarm until <i>All Clear</i> is announced. This permit may be cancelled by anyone.<br/> <b>RETURN THIS PERMIT TO ISSUING AUTHORITY WHEN WORK IS COMPLETE, OR BY THE END OF THE SHIFT, WHICHEVER COMES FIRST.</b></p> |  |                    |  |                       |   |   |                          |                          |                          |                                   |  |  |  |  |
| Permit Initiator/Company:   |  |                    | Person Doing Work:   |                       |   |   | Date:                    |                          |                          |                                   |  |  |  |  |
| Specific Location/Equipment:  |  |                    | Phone/Radio/Pager #:   |                       | Estimated # of Workers:                                     |   | Control/MC No.:          |                          |                          |                                   |  |  |  |  |
| Work Description:   |  |                    |  |                       |   |   | Time Start:              |                          |                          |                                   |  |  |  |  |
|   |  |                    |  |                       |   |   | Time End:                |                          |                          |                                   |  |  |  |  |
| Procedure #:  |  |                    |  |                       | Work Order #:   |   |                          |                          |                          |                                   |  |  |  |  |
| <b>HOT WORK PERMIT ITEMS TO CONSIDER (Checked boxes must have associated review on page 2)</b>  |  |                    |  |                       |   |   |                          |                          |                          |                                   |  |  |  |  |
| <input type="checkbox"/> Cutting, Grinding, Welding in Classified Areas   |  |                    | <input type="checkbox"/> Energized Electrical Circuits in Classified Areas |                       |   | <input type="checkbox"/> Hot Tap          |                          |                          |                          |                                   |  |  |  |  |
| <input type="checkbox"/> Non-Intrinsically Safe Equipment in Classified Areas   |  |                    | <input type="checkbox"/> Heaters and Other Equipment                       |                       |   | <input type="checkbox"/> Energy Isolation |                          |                          |                          |                                   |  |  |  |  |
| <b>PLEASE CHECK APPROPRIATE RESPONSE</b>  |  |                    |  |                       |   |   | Yes                      | No                       | N/A                      |                                   |  |  |  |  |
| 1. Have affected personnel been briefed on job safety and requirements and on back of permit?   |  |                    |  |                       |   |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                                   |  |  |  |  |
| 2. Is this work affected by, or does this work affect, other work or processes? If Yes, describe below  |  |                    |  |                       |   |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                                   |  |  |  |  |
| 3. Have fire detection, gas systems, and/or suppression systems been Isolated/By-passed? If Yes, describe below.  |  |                    |  |                       |   |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                                   |  |  |  |  |
| 4. Could work cause Remote Alarms? If Yes, describe below.  |  |                    |  |                       |   |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                                   |  |  |  |  |
| 5. Is equipment monitored or controlled by OCC being taken out of service? If Yes, time OCC notified:   |  |                    |  |                       |   |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                                   |  |  |  |  |
| 6. Have Shutdowns been disabled? If Yes, describe below   |  |                    |  |                       |   |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                                   |  |  |  |  |
| 7. Is Energy Isolation/Lockout necessary? If Yes, Tag or Mastercard Number:   |  |                    |  |                       |   |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                                   |  |  |  |  |
| 8. Has designated fire watch been assigned, with appropriate equipment? List name(s):   |  |                    |  |                       |   |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                                   |  |  |  |  |
| 9. Is Gas Test Required?  |  |                    |  |                       |   |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                                   |  |  |  |  |
| 10. Is Continuous Gas Test required?  |  |                    |  |                       |   |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                                   |  |  |  |  |
| Initial Gas Test  |  | % O <sub>2</sub> : | % LEL:   | H <sub>2</sub> S ppm: | CO ppm:   | THC ppm:                                  | Other:                   | Time:                    | Tester:                  |                                   |  |  |  |  |
| Extended/Retest Gas Test  |  | % O <sub>2</sub> : | % LEL:   | H <sub>2</sub> S ppm: | CO ppm:   | THC ppm:                                  | Other:                   | Time:                    | Tester:                  |                                   |  |  |  |  |
| SPECIAL INSTRUCTIONS:   |  |                    |  |                       | <b>PERMIT AUTHORIZATIONS</b>                                |   |                          |                          |                          |                                   |  |  |  |  |
|   |  |                    |  |                       | INITIATING SHIFT Signature (Badge # if required)            |   |                          |                          |                          |                                   |  |  |  |  |
|   |  |                    |  |                       | Area Operator:  |   |                          |                          |                          | <input type="checkbox"/> Verbally |  |  |  |  |
|   |  |                    |  |                       | Person Doing the Work:                                      |   |                          |                          |                          |                                   |  |  |  |  |
|   |  |                    |  |                       | Issuing Authority:  |   |                          |                          |                          |                                   |  |  |  |  |
|   |  |                    |  |                       | EXTENDING SHIFT (See page 2, Permit Extension Requirements) |   |                          |                          |                          |                                   |  |  |  |  |
| Area Operator:  |  |                    |  |                       | <input type="checkbox"/> Verbally                           |   |                          |                          |                          |                                   |  |  |  |  |
| Person Doing the Work:  |  |                    |  |                       |   |   |                          |                          |                          |                                   |  |  |  |  |
| Issuing Authority:  |  |                    |  |                       |   |   |                          |                          |                          |                                   |  |  |  |  |
| <b>PERMIT CLOSEOUT</b>  |  |                    |  |                       |   |   | Yes                      | No                       | N/A                      |                                   |  |  |  |  |
| 1. Has the work Area and/or Equipment been cleaned up?  |  |                    |  |                       |   |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                                   |  |  |  |  |
| 2. Has the Area Operator been notified?   |  |                    |  |                       |   |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                                   |  |  |  |  |
| 3. Post Work Comments:  |  |                    |  |                       |   |   |                          |                          |                          |                                   |  |  |  |  |
| 4. Person Doing The Work:   |  |                    |  |                       | Time:   |   | Date:                    |                          |                          |                                   |  |  |  |  |
| 5. Have other affected areas, e.g. OCC, been notified of status of this permit?   |  |                    |  |                       |   |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                                   |  |  |  |  |
| 6. All Isolated, By-Passed, or Shutdown systems returned to normal? If not, Have EIT or EOS logs been updated?  |  |                    |  |                       |   |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                                   |  |  |  |  |
| 7. Area Operator/Control Room/SPOC/Issuing Authority or Delegate:   |  |                    |  |                       | Time:   |   | Date:                    |                          |                          |                                   |  |  |  |  |
| 0162 Rev. 5 (12/06)   |  |                    |  |                       |   |   |                          |                          |                          |                                   |  |  |  |  |

Figure 8. Form 0162, Hot Work Permit (Page 1)



# HOT WORK PERMIT

Any individual may cancel this work permit at any time if they consider conditions or work methods to be unsafe. Anyone canceling a work permit must: a) Inform the person doing the work; b) Remove the site copy of the permit; and c) Return it to the Issuing Authority/SPOC, giving reasons for their actions.

|   | YES  | N/A                      | Hot Work Permit Items To Consider   |      |
|---|--|--------------------------|---|------|
|   |  |                          | <b>H-</b>   |      |
| Cutting, Grinding, Welding in Classified Areas                      | <input type="checkbox"/>   | <input type="checkbox"/> | Fire extinguishers present and in required location?  |      |
|   | <input type="checkbox"/>   | <input type="checkbox"/> | Reviewed SA-38, Requirement 1.19, Welding and Flame Cutting, especially 1.19.6.4, Fire Prevention and Protection?   |      |
|   | <input type="checkbox"/>   | <input type="checkbox"/> | Sumps/drains checked and covered within 35'?  |      |
|   | <input type="checkbox"/>   | <input type="checkbox"/> | Welding screens required?   |      |
|   | <input type="checkbox"/>   | <input type="checkbox"/> | Proper eye protection?  |      |
| Non-Intrinsically Safe Equipment in Classified Areas*               | <input type="checkbox"/>   | <input type="checkbox"/> | Power tools, cameras, test equipment, vehicles?   |      |
|   | <input type="checkbox"/>   | <input type="checkbox"/> | Fire Detection/Suppression systems need to be bypassed?   |      |
| Energized Electrical Circuits in Classified Areas                   | <input type="checkbox"/>   | <input type="checkbox"/> | Fire Detection/Suppression systems need to be bypassed?   |      |
|   | <input type="checkbox"/>   | <input type="checkbox"/> | Visual inspection only?   |      |
|   | <input type="checkbox"/>   | <input type="checkbox"/> | Testing/Troubleshooting?  |      |
|   | <input type="checkbox"/>   | <input type="checkbox"/> | Removal/Replacement/Re-work required?   |      |
| Heaters and Other Equipment   | <input type="checkbox"/>   | <input type="checkbox"/> | Are safe work practices in place per SA-38?   |      |
|   | <input type="checkbox"/>   | <input type="checkbox"/> | Are heaters and equipment monitoring requirements specified?  |      |
|   | <input type="checkbox"/>   | <input type="checkbox"/> | Fire extinguishers present and in required locations?   |      |
| Hot Tap   | <input type="checkbox"/>   | <input type="checkbox"/> | Have Bonding and Grounding requirements been met?   |      |
|   | <input type="checkbox"/>   | <input type="checkbox"/> | Proper clearance from equipment (cable trays, piping, fuel tanks, etc.)?  |      |
|   | <input type="checkbox"/>   | <input type="checkbox"/> | Is Hot Tap procedure in place?  |      |
|   | <input type="checkbox"/>   | <input type="checkbox"/> | Flow level requirements met?  |      |
| Energy Isolation  | <input type="checkbox"/>   | <input type="checkbox"/> | Pressure requirements met?  |      |
|   | <input type="checkbox"/>   | <input type="checkbox"/> | Is line clearly surveyed/checked for hot tapping?   |      |
|   | <input type="checkbox"/>   | <input type="checkbox"/> | Reviewed Cutting, Grinding, Welding in Classified Areas checklist?  |      |
|   | <input type="checkbox"/>   | <input type="checkbox"/> | Single Source Energy Isolation? (List Tag Number on Line 7 of opening section)  |      |
|   | <input type="checkbox"/>   | <input type="checkbox"/> | Standard/Mastercard Energy Isolation? (List Tag Numbers/Mastercard Number on Line 7 of opening section)   |      |
| PERMIT EXTENSION REQUIREMENTS                                       | <input type="checkbox"/>   | <input type="checkbox"/> | Isolation device(s) <input type="checkbox"/> Breakers <input type="checkbox"/> Valve(s) <input type="checkbox"/> Other Listed with: <input type="checkbox"/> Special Instructions <input type="checkbox"/> Mastercard |      |
|   | <input type="checkbox"/>   | <input type="checkbox"/> | Method of Isolation listed <input type="checkbox"/> In SOP/SMP <input type="checkbox"/> Document In or with: <input type="checkbox"/> Special Instructions <input type="checkbox"/> Mastercard                        |      |
|   | <input type="checkbox"/>   | <input type="checkbox"/> | Verified by Method <input type="checkbox"/> VOM <input type="checkbox"/> Gauge <input type="checkbox"/> Other Listed with: <input type="checkbox"/> Special Instructions <input type="checkbox"/> Mastercard          |      |
|   | <input type="checkbox"/>   | <input type="checkbox"/> | Contingency Plan ID'd <input type="checkbox"/> In SOP/SMP <input type="checkbox"/> Document In or with: <input type="checkbox"/> Special Instructions <input type="checkbox"/> Mastercard                             |      |
| 1. Extension will only be issued to the original Person Doing Work. | 2. No change in work scope.  |                          |   |      |
|   | 3. Extension to be signed by incoming Issuing Authority and Person Doing Work. |                          |   |      |
| 4. New Gas Test will be performed.                                  |  |                          |   |      |
| Designated Worker   | Signature  |                          | Time  | Date |
| <input type="checkbox"/>  |  |                          |   |      |

**Close Out Permit With Issuing Authority When Work Is Complete!**

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**Figure 8. Form 0162, Hot Work Permit (Page 2)**



# PIPELINE WORK PERMIT

| PS-   |  |  |  |                       |   |          |                         |                         |         |
|---|--|--|--|-----------------------|---|----------|-------------------------|-------------------------|---------|
| Due to Security concerns, access roads and gates shall be closed and locked. Report any suspicious activity to Security and local Maintenance Coordinator. This permit may be cancelled by anyone at any time.<br><b>RETURN THIS PERMIT TO ISSUING AUTHORITY WHEN WORK IS COMPLETE, OR BY THE PERMIT COMPLETION DATE.</b> |  |  |  |                       |   |          |                         |                         |         |
| Permit Initiator/Company:   |  |  |  | Person Doing Work:    |   |          | Date:                   |                         |         |
| Specific Location:  |  |  |  |                       | Phone/Radio/Pager #:  |          | Estimated # of Workers: |                         |         |
| Effective From Time:  |  | Date:  |  | Effective to Time:    |   | Date:    |                         | Extended to Time: Date: |         |
| Work Description:   |  |  |  |                       |   |          |                         |                         |         |
| Procedure #:  |  |  |  |                       | Work Order #:   |          |                         |                         |         |
| <b>PIPELINE WORK PERMIT ITEMS TO CONSIDER (Checked boxes must have associated review on page 2)</b>   |  |  |  |                       |   |          |                         |                         |         |
| <input type="checkbox"/> Confined Space Entry   |  | <input type="checkbox"/> Utility Locate Required |  |                       | <input checked="" type="checkbox"/> Radiography and/or Pressure Testing       |          |                         |                         |         |
| <input type="checkbox"/> Cutting, Grinding, Welding in Non-Classified Areas   |  |  | <input type="checkbox"/> Required Agency Permits |                       | <input type="checkbox"/> MC/Alyeska Representative Required On Site           |          |                         |                         |         |
| <input type="checkbox"/> Mining and/or Mineral Materials Required   |  |  | <input type="checkbox"/> Excavation              |                       | <input type="checkbox"/> Notification to OCC, U/S, D/S Pump Stations Required |          |                         |                         |         |
| <b>PLEASE CHECK APPROPRIATE RESPONSE</b>  |  |  |  |                       |   |          |                         |                         |         |
|   |  |  |  |                       |   |          | Yes                     | No                      | N/A     |
| 1. Have affected personnel been briefed on job safety and requirements and on back of permit? <input type="checkbox"/>  |  |  |  |                       |   |          |                         |                         |         |
| 2. Is this work affected by, or does this work affect, other work or processes? If Yes, describe below <input type="checkbox"/>   |  |  |  |                       |   |          |                         |                         |         |
| 3. Is Energy Isolation/Lockout necessary? If Yes, Tag or Mastercard Number: <input type="checkbox"/>  |  |  |  |                       |   |          |                         |                         |         |
| 4. Has Person Doing Work been informed of the need to avoid damage to all survey monuments/markers? Immediately report any damage (pre-existing or otherwise) to the local MC. <input type="checkbox"/>   |  |  |  |                       |   |          |                         |                         |         |
| 5. Are Other Work Permits required? If Yes, list: <input type="checkbox"/>  |  |  |  |                       |   |          |                         |                         |         |
| 6. Have Environmental Hazards been identified and mitigated (e.g., Avalanche, Mudslide, Slope Instability, Cut Bank)? <input type="checkbox"/>  |  |  |  |                       |   |          |                         |                         |         |
| 7. Does the work require brush cutting? If Yes, refer to SA-38, <u>Brush Cutting</u> , and MR-48, <u>Workpad and Access Roads</u> . <input type="checkbox"/>  |  |  |  |                       |   |          |                         |                         |         |
| 8. Will the work require excavation dewatering? If Yes, refer to ED-108, <u>Excavation Dewatering</u> (complete Form 3556). <input type="checkbox"/>  |  |  |  |                       |   |          |                         |                         |         |
| 9. Will the work be over or near water? If Yes, refer to SA-38, <u>Personal Flotation Devices</u> , for requirements. <input type="checkbox"/>  |  |  |  |                       |   |          |                         |                         |         |
| 10. Will the work require the use of an All Terrain Vehicle (ATV)? If Yes, refer to SA-38, <u>All Terrain Vehicles</u> , for requirements. <input type="checkbox"/>   |  |  |  |                       |   |          |                         |                         |         |
| 11. Will the work require secondary containment dewatering (i.e., Mainline Vaults, Fuel Gas Line Manhole)? If Yes, refer to EN-43-004, <u>Wastewater Discharges</u> (complete Form 3729; <u>Secondary Containment Water Discharge Report</u> ). <input type="checkbox"/>  |  |  |  |                       |   |          |                         |                         |         |
| 12. Will in-stream/bank work be required at Pipeline, Access, or Workpad Bridge? If Yes, contact Environment or Lands Depts for permits. Contact Systems Integrity if the posted weight limit on Access or Workpad Bridge could be exceeded. <input type="checkbox"/>   |  |  |  |                       |   |          |                         |                         |         |
| 13. Is Gas Test Required? <input type="checkbox"/>  |  |  |  |                       |   |          |                         |                         |         |
| 14. Is Continuous Gas Test required? <input type="checkbox"/>   |  |  |  |                       |   |          |                         |                         |         |
| Initial Gas Test  |  | % O <sub>2</sub> :                               | % LEL:   | H <sub>2</sub> S ppm: | CO ppm:   | THC ppm: | Other:                  | Time:                   | Tester: |
| Extended/Retest Gas Test  |  | % O <sub>2</sub> :                               | % LEL:   | H <sub>2</sub> S ppm: | CO ppm:   | THC ppm: | Other:                  | Time:                   | Tester: |
| SPECIAL INSTRUCTIONS:   |  |  |  |                       | <b>PERMIT AUTHORIZATIONS</b>  |          |                         |                         |         |
|   |  |  |  |                       | INITIATING SHIFT Signature (Badge # if required)                              |          |                         |                         |         |
|   |  |  |  |                       | Person Doing the Work: <input type="checkbox"/> Verbally                      |          |                         |                         |         |
|   |  |  |  |                       | Issuing Authority:  |          |                         |                         |         |
|   |  |  |  |                       | EXTENDING SHIFT (See page 2, Permit Extension Requirements)                   |          |                         |                         |         |
|   |  |  |  |                       | Person Doing the Work: <input type="checkbox"/> Verbally                      |          |                         |                         |         |
|   |  |  |  |                       | Issuing Authority:  |          |                         |                         |         |
|   |  |  |  |                       |   |          |                         |                         |         |
| <b>PERMIT CLOSEOUT</b>  |  |  |  |                       |   |          |                         |                         |         |
|   |  |  |  |                       |   |          | Yes                     | No                      | N/A     |
| 1. Has the work Area and/or Equipment been cleaned up? <input type="checkbox"/>   |  |  |  |                       |   |          |                         |                         |         |
| 2. Isolated/By-passed Shutdown systems returned to normal? <input type="checkbox"/>   |  |  |  |                       |   |          |                         |                         |         |
| 3. Have other affected areas, e.g., OCC, been notified of status of this permit? <input type="checkbox"/>   |  |  |  |                       |   |          |                         |                         |         |
| 4. Post Work Comments:  |  |  |  |                       |   |          |                         |                         |         |
| 5. Person Doing The Work:   |  |  |  |                       |   |          | Time:                   | Date:                   |         |
| 6. Issuing Authority:   |  |  |  |                       |   |          | Time:                   | Date:                   |         |

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Figure 9. Form 3459, Pipeline Work Permit (Page 1)



# PIPELINE WORK PERMIT

Any individual may cancel this work permit at any time if they consider conditions or work methods to be unsafe. Anyone Canceling a work permit must: a) Inform the person doing the work; b) Remove the site copy of the permit; and c) Return it to the Issuing Authority/SPOC, giving reasons for their actions.

|  | YES  | N/A                      | PS-   |
|--|--|--------------------------|---|
| Confined Space Entry   | <input type="checkbox"/>   | <input type="checkbox"/> | Has a reclassification been certified & signed for Non-Permit Required Confined Space? (see attached form)  |
|  | <input type="checkbox"/>   | <input type="checkbox"/> | Does work require Permit-Required Confined Space (PRCS) or PRCS Using Alternate Entry Procedures? If Yes, obtain Confined Space Entry Permit.   |
|  | <input type="checkbox"/>   | <input type="checkbox"/> | Have the affected employees been trained in compliance with 29 CFR 1910.146?  |
| Cutting, Grinding, Welding in Non-Classified Areas   | <input type="checkbox"/>   | <input type="checkbox"/> | Fire extinguishers present and in required location?  |
|  | <input type="checkbox"/>   | <input type="checkbox"/> | Combustible materials removed/covered within 35'?   |
|  | <input type="checkbox"/>   | <input type="checkbox"/> | Proper eye protection and other Personal Protective Equipment addressed?  |
|  | <input type="checkbox"/>   | <input type="checkbox"/> | Is a welding procedure required?  |
| Mining and/or Mineral Materials Required   | <input type="checkbox"/>   | <input type="checkbox"/> | Has a Fire Watch been assigned? (Name)  |
|  | <input type="checkbox"/>   | <input type="checkbox"/> | Will mined materials be hauled from an Operations Material Site? If Yes, complete Form 10164, Daily Mineral Material Hauling Voucher.   |
| Utility Locate Required (refer to MR-48, Pre-Excavation Activities, or FG-78, Excavation Safety)   | <input type="checkbox"/>   | <input type="checkbox"/> | Will blasting be required? If Yes, refer to Master Specification C-415, Blasting Restrictions Near the Trans-Alaska Pipeline System.  |
|  | <input type="checkbox"/>   | <input type="checkbox"/> | Is work performed in the vicinity of the fiber optics cable (FOC)? If Yes, contact GCI, 1-888-560-2022 for locate.  |
|  | <input type="checkbox"/>   | <input type="checkbox"/> | Is work performed in the vicinity of cathodic protection systems? If Yes, contact Systems Integrity and complete Form 2353, Rectifier Service Record, to document any maintenance, repairs, or other service interruptions.<br><b>NOTE:</b> If excavation is in the direct influence of Enhanced Cathodic Protection, care should be taken to ensure that the rectifier(s) are shut off and tagged out until such time as the excavation is closed. |
| Required Agency Permits  | <input type="checkbox"/>   | <input type="checkbox"/> | Is third party Utility Locate required?   |
|  | <input type="checkbox"/>   | <input type="checkbox"/> | Is a copy of the agency permit posted at job site as required by issuing agency?  |
| Excavation (refer to SA-38, Excavation Safety, or FG-78, Excavation Safety)  | <input type="checkbox"/>   | <input type="checkbox"/> | Has 3-day notification been made to ADF&G for maintenance work on low water crossings/culverts in fish streams?   |
|  | <input type="checkbox"/>   | <input type="checkbox"/> | Is the excavation over 4 feet in depth? If Yes, attach Form 2268, Excavation Plan, completed by a Competent Person.   |
|  | <input type="checkbox"/>   | <input type="checkbox"/> | Where applicable, has competent person reviewed plan and inspected excavation?  |
|  | <input type="checkbox"/>   | <input type="checkbox"/> | When deeper than four feet and personnel entry required, has air testing been performed?  |
|  | <input type="checkbox"/>   | <input type="checkbox"/> | Is a survey required?   |
| Radiography  | <input type="checkbox"/>   | <input type="checkbox"/> | Surveyors required on-site?   |
|  | <input type="checkbox"/>   | <input type="checkbox"/> | Have underground utilities been identified and marked?  |
|  | <input type="checkbox"/>   | <input type="checkbox"/> | Dewatering, if NOD required, has ADEC pre-notification been identified and marked?  |
|  | <input type="checkbox"/>   | <input type="checkbox"/> | Warnings/signs/lights/ropes?  |
| Pressure Testing   | <input type="checkbox"/>   | <input type="checkbox"/> | Safe operating limits delineated?   |
|  | <input type="checkbox"/>   | <input type="checkbox"/> | UV/detection/suppression systems by-passed if necessary?  |
|  | <input type="checkbox"/>   | <input type="checkbox"/> | Notification of personnel in test area?   |
|  | <input type="checkbox"/>   | <input type="checkbox"/> | Has Spill Response been addressed?  |
| MC/Alyeska Representative Required On Site   | <input type="checkbox"/>   | <input type="checkbox"/> | Is a Mainline Valve movement required? If Yes, Maintenance Coordinator or designee required on site.  |
|  | <input type="checkbox"/>   | <input type="checkbox"/> | Is On-Site Construction Management required per MR-48? If Yes, Maintenance Coordinator or designee, Project, or Baseline Superintendent is required on site.  |
|  | <input type="checkbox"/>   | <input type="checkbox"/> | Are tapping or stopple plugging/retracting operations being performed? If Yes, Alyeska Rep is required on site.   |
| Notification to OCC, U/S, D/S Pump Stations Required   | <input type="checkbox"/>   | <input type="checkbox"/> | Does the work require Priority 1 Work or Mainline Valve movement? If Yes, notify OCC, Upstream and Downstream pump stations prior to and after completion of work.  |
| PERMIT EXTENSION REQUIREMENTS  | 1. Extension will only be issued to the original Person Doing Work.            |                          | 2. No change in work scope.   |
|  | 3. Extension to be signed by incoming Issuing Authority and Person Doing Work. |                          | 4. New Gas Test will be performed.  |
|  | <b>RULES</b>   |                          |   |
|  | <b>GUIDELINES</b>  |                          |   |
| <p><b>RULES are designed to protect personnel, the environment, the pipeline and equipment.</b></p> <p>Maintain 15' travel distance from VSMs when snow conceals the driveline. If a vehicle or equipment leaves the workpad, notify the MC if recovery action is over undisturbed ground.</p> <p>Do not back up toward the above or below ground pipe.</p> <p>If 18" of clearance cannot be maintained when working around the above ground pipe or support assemblies, use of a spotter is required.</p> <p>Never drive onto or over B/G animal crossings without Engineering approval.</p> <p>Notify the MC of any accidents, incidents, or spills as soon as possible.</p> <p>Driving around gates or headache bars is prohibited except for off-road reconnaissance vehicles with a Winter Only Off-ROW Access Permit.</p>      |  |                          |   |
| <p><b>Guidelines are aids in the safe and productive use of the workpad.</b></p> <p>Workpad travel speed should not exceed 25 MPH; conditions may require further speed reduction (i.e. LWCS, bridges, and aufels).</p> <p>Check ice thickness if water depth is unknown at low water crossings.</p> <p>Travel across Transverse levees (water bars) in the driveline; otherwise damage may result from high-centering vehicle or equipment.</p> <p>Winter reconnaissance vehicles may drive around workpad blockpoints while the Winter Only Off-ROW Access Permit (maximum ¼ mile from pipeline) is in effect. Caution should be taken if crossing heavily armored blockpoints.</p> <p>Driveline or track damage may occur when Tuckers are moved after breaking through ice and the tracks become hooked under the ice shelf.</p> |  |                          |   |
| <b>Close Out Permit With Issuing Authority When Work Is Complete!</b>  |  |                          |   |

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Figure 9. Form 3459, Pipeline Work Permit (Page 2)

## 2.1 Portable Industrial Heaters

### 2.1.1 Purpose

This requirement has been established to provide instructions and information for the safe operation of portable industrial heaters.

### 2.1.2 References

- 29 CFR 1926.151, "Fire Prevention"

### 2.1.3 Responsibilities

Managers and supervisors of activities utilizing portable industrial heaters are responsible for compliance with this requirement.

### 2.1.4 Requirements

1. Only kerosene, #1 fuel oil, LPG/catalytic heaters, or gasoline-fueled fresh air heaters will be allowed for use in Alyeska facilities.
2. A *Hot Work Permit, Form 0162* is required for operation of all portable heater applications within 50 feet of an NEC Class I area or other areas as identified by facility supervision. Refer to Section 1.15.8, "Records," for retention information.
3. Heaters will not be operated within 50 feet of NEC Class I areas unless their operations are monitored. Heaters must be checked at least every 1/2-hour of operation by the fire watch. Heaters operated outside the 50 foot radius described above shall be operated with *Form 0161, Unit Work Permit*, and no special visual inspection or monitoring is required unless specified in the special instructions of the work permit or work plan.
4. Heaters in operation will be kept level, stable, and set on noncombustible material. Wheeled heaters must have tires chocked.
5. Heaters will not be allowed to operate in or under buildings. Heat will be directed to desired location in or under a building by a fire-resistive duct.
6. Heated areas will be adequately ventilated and tested to prevent carbon monoxide or oxygen deficiency buildup. Indirect fired heaters should be used to heat space which may be occupied by personnel.
7. Heaters will not be operated in the presence of volatile fumes.
8. No combustible material (wood, paper, Visqueen, etc.) will be allowed within 10 feet of any heater. No similar materials will be allowed within 10 feet of the heater outlet. Tarps, canvas, Visqueen, or similar coverings will be secured to prevent the wind from blowing them against the heater, heater outlet, or inlet.
9. A 20-lb. dry chemical extinguisher will be located not more than 50 feet nor closer than 10 feet from the operating heater. Fire extinguishers are to be provided on a ratio of one to every two operating heaters.
10. Heaters will be shut down and allowed to cool before refueling.

**NOTE**

600K Btu and higher heaters may be left running while refueling.

11. Heater refueling will be done with a properly marked, approved, safety can and fuel storage areas will be kept at least 15 feet from heater location.

**NOTE**

600K Btu and higher heaters will be fueled by a spreader truck.

12. Heater air inlet and discharge areas will be kept away from obstructions that would hinder the free flow of air into and out of the heater.
13. Fire resistive ducts should be of the flexible mat type. However, where metal ducting is used, care must be taken to maintain an 18-inch clearance when penetrating a combustible wall.
14. Oil-fired heaters shall be equipped with a safety control to stop fuel flow in case of flame failure.
15. Fire ducts and insulation material must not contain asbestos in any form.
16. Portable industrial heaters must be kept 15 feet from any combustible structure (e.g., trailer, building, shack, etc.).
17. Portable industrial heaters must be kept 25 feet from any oil, gas, or electric process facilities.

**2.1.5 Definitions**

N/A

**2.1.6 Training**

Fire watch must be trained as a fire watch and have fire extinguisher training.

**2.1.7 Records**

For record retention requirements, see the *Records Retention Schedule* located under Resources\Records\Records Retention Schedule on the A-Net.

**Pump Station 9 Tank Vent Fire  
Root Cause Incident Investigation  
Executive Summary – Final Report**

Incident Description

On the afternoon of January 6, 2007, OCC received a signal that BL2 was in transit at Pump Station 11. The transit signal initiated the auto controls logic which shutdown Pump Station 9 and initiated a block line command. This command resulted in a relief event at tank 190. Crude vapors were released from tank 190. Those vapors were ignited by a Tioga heater placed in the tank farm to support planned electrical maintenance activity on the crude oil tank isolation valve.

A preliminary review was completed using Alyeska's LPS root cause analysis tool. Management then commissioned a more detailed "Taproot" root cause analysis.

Immediate Interim Actions

While awaiting the results of the TAPROOT analysis, Pipeline and Terminal Management initiated additional interim controls to assure ongoing safety of operations. These included:

- A requirement that any hot work permits for standing equipment in tank farms at either the Terminal or along the pipeline requires approval of the Terminal and Pipeline Manager respectively.
- Discussions at each work location about the event at PS9 and a reminder of the hazards associated with hydrocarbon vapors.

Root Causes

- The hazard and resulting risk failed to be adequately captured by and mitigated as part of our risk management program.
- Over reliance on administrative controls in lieu of engineering controls to mitigate risks.

Recommendations

1. Create a work team with Executive Sponsorship to perform a process hazard analysis on tank farms, sumps, vents and drains. The team should have participation from a process engineer, operations, maintenance, OCC, projects and safety. The investigation team recommends an external consultant should be brought in to facilitate and provide the scientific and physical properties that may be unknown. This team after identifying the risks and means of mitigating those risks should develop a training element to educate our work force of these risks.

**Pump Station 9 Tank Vent Fire  
Root Cause Incident Investigation  
Executive Summary – Final Report**

2. Strengthen our Risk Management Process by incorporating the elements of the process safety management program for those systems carrying hydrocarbons. The investigation team realizes our hydrocarbon transportation systems are not governed under the OSHA regulation (29 CFR 1910.119); however the process safety management program is very robust and a good business practice.
3. Re-evaluate our work permit process to require the approval authority be commensurate with the risk.
4. Implement the recommendations from the 1995 TAPS Crude Volatility Task Force Report. The recommendation was to install automatic audible alarms in the Tank Farms to alert personnel that an event was taking place or, if the alarms were not possible, to notify personnel by radio. Pump Station 3 installed automatic audible alarms in their tank farm but have since disconnected the automation. Valdez Marine Terminal installed audible alarms however they are not automatic. All other Pump Stations elected to utilize radios to notify personnel. The individual at Pump Station 9 in the Tank Farm at the time of the incident did not hear the warning given on the radio.

Reviews & Action Planning

This TAPROOT root cause analysis and recommendations, along with the initial investigation report using the LPS analysis tools has been reviewed by Alyeska's accountable managers and executives.

The recommendations presented in this report, and those in the initial LPS report, are being considered in the development of a specific action plan. The final action plan will consist of specific deliverables, commitment dates, and assignment of accountable resources. All actions will be documented and tracked to closure through Alyeska's Management Action & Commitments (MAC) process.

This independent Root Cause Analysis report and recommendations are now considered final.



Subject: Pump Station Tank Farm Access Control

Number N-1.00.13  
Revision 10

Page: 1 of 3  
Effective Date: 01-11-2008

|   |  |
|---|--|
| Applicable To: Pipeline Operations        | Technical Assistance: Holly Schoenborn |
| Approval: John Baldrige, Pipeline Manager |  |

### 1.0 Purpose and Scope

The purpose of this procedure is to outline the controls required for accessing and conducting work in the Pump Station tank farms in consideration of the potential for the presence of explosive vapors.

### 2.0 References

SA-38, *Corporate Safety Manual*, Requirement 1.15, "Work Permit System."

### 3.0 Affects

This procedure applies to Pump Stations 1, 3, 4, 5, 7, & 9. All the cold standby stations, PS 2, 6, 8, 10, & 12 Crude, and Turbine tanks are drained and relief systems are out of service and have no potential explosive vapors present in their tank farms. However, if cold restart is installed at PS 12, the Tank Farm would become active and this DOP would then apply to PS 12.

### 4.0 Responsible and Accountable Resources

- Pipeline Manager
- Area O&M Manager
- O&M Supervisor
- Pump Station Control Room Operator
- Technician
- Baseline Personnel
- Contractor Personnel

### 5.0 Records

None.

### 6.0 Procedure

Tank Farm Access Control: The Pump Station Control Room Operator (CRO) is the control point for access to the pump station tank farm. All personnel must obtain authorization from the CRO prior to access of the tank farm.

Tank farm access points will be posted identifying the requirement for a work permit and a gas test prior to the operation of equipment that might generate a source of ignition.



# Pipeline Department Operating Procedure

Subject: Pump Station Tank Farm Access Control

Number N-1.00.13  
Revision 10

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Following Strategic Reconfiguration transition, when Pump Station Control Rooms are no longer staffed, OCC will become the control point for access to pump station tank farms.

### Normal Entry

1. Non-work permit related entry requires authorization from the CRO.
2. If work is to be performed within any tank farm dike area, an appropriate work permit will be obtained from the CRO.
3. If entry to, or work in the tank farm dike includes the use of equipment that may generate a source of ignition (vehicles, generators, welding, cutting, drilling, etc.), hot work permit requirements must be met in accordance with SA-38.

To the extent possible, vehicle mobile equipment entry into the tank farms will be minimized and shall be approved in advance by facility supervision. Vehicles and equipment should not be operated within fifty (50) feet of the tank without special precautions.

4. Unless approved in advance by the Area Manager or Pipeline Manager, the relief system at Pump Stations 3, 4, 5, 7 and 9 will be isolated whenever there is hot work involving open flame or extended use (more than two hours) of other spark producing equipment. Isolation of the relief system must be coordinated and scheduled with OCC.
5. Equipment and vehicles authorized in the tank farm will be attended at all times while in operation. Idling vehicles will not be left unattended.
6. Standing equipment should be placed outside the classified area whenever possible. Tioga type heaters will not be placed in the classified area.
7. Personnel entering the tank farm must be in radio communications with the CRO.

NOTE: All work permits issued for work within the tank farm which involves the operation of standing equipment must be reviewed and approved by the accountable Area O&M Manager or the Pipeline Manager prior to issuance. Standing equipment includes heaters, light plants, air compressors, welding machines, etc.

### Evacuation During a Relief Event

1. If a relief event occurs that causes venting to the tank farm area while personnel are present, the tank farm will be evacuated immediately.
2. The CRO will announce an evacuation on UHF radios and request an immediate evacuation.
3. Personnel will turn off all ignition sources and motorized equipment and leave the tank farm on foot to the designated pump station rally point.

### Re-Entry After Evacuation

After the relief event has concluded, a gas test will be performed prior to an issuance of an all clear from the CRO or OCC, and resumption of work activities.

## End of Procedure

### Revision History

**Revision History**

**Approved by:** John Baldrige, Pipeline Manager



# Pipeline Department Operating Procedure

Subject: Pump Station Tank Farm Access Control

Number N-1.00.13  
Revision 10

Page: 3 of 3  
Effective Date: 01-11-2008

| Revision | Date       | Revision Summary   |
|----------|------------|--|
| 10       | 01/11/2008 | Added individual stations that DOP applies under Section 3 "Affects"                         |
| 9        | 12/19/07   | Added specifics to step 3 of Section 6.0.  |
| 8        | 12/17/07   | Added specifics to step 3 of Section 6.0.  |
| 7        | 05/02/07   | Added specifics on isolating the relief system during hot work or during extended use.       |
| 6        | 04/13/07   | Added specifics on use of vehicles and standing equipment in a classified area.              |
| 5        | 04/03/07   | Added "Area O&M Manager" as accountable manager.   |
| 4        | 02/12/07   | Revised Section 6.0 to ensure hot work permit requirements are met in accordance with SA-38. |
| 3        | 01/30/07   | Removed redundant text box regarding tank farm access in windy or slippery conditions.       |
| 2        | 01/29/07   | Added more entry and evacuation procedure steps to Section 6.0                               |
| 1        | 08/15/06   | Revised text "Evacuation During a Relief Event"  |
| 0        | 08/15/06   | Initial issue of this procedure.   |



## Operating Procedure Ballast Water Treatment

Title: Restriction of BWT Tank Farm Access

Number: BWT-1.20

Page: 1 of 3

Revision: 8

Effective Date: 12/31/07

Approved by:

**Lloyd Street, BWT Supervisor for Joe Kuchin, BWT Manager**

Applicable to:

**Ballast Water Treatment Facility**

### Purpose

The purpose of this procedure is to outline the administrative controls required for accessing and conducting work in the BWT Area Tank Farm for Tanks 92, 93, 94, 80 and 81 in consideration of the potential for the presence of explosive vapors.

### Accountable Resources

- BWT Manager
- BWT Supervisor
- BWT Operators
- Fire, Safety Industrial Hygiene (FSIH)

### SPECIAL INSTRUCTIONS

Through the construction of the 90s Tank Farm into the Vapor Recovery System the following Special Instructions apply to all work done at the 90s tank farm ground level:

#### NO FANS RUNNING ON THE TANKS

- With NO hatches or purge nozzles open, work will be allowed if the tank rise is less than .2 feet per hour
- With ALL hatches and purge nozzles open, work will be allowed on the tank farm floor if the tank rise is less than .5 feet per hour.

#### ONE OR MORE FANS RUNNING ON THE TANKS

- Work will be allowed on the tank farm floor if the tank rise is below 3 feet per hour.

This procedure does not have to be physically present at the work site, initialed, or signed.

### PROCEDURE

#### Tank Farm Access Control:

The BWT Control Room Operator (CRO) is the control point for access to the BWT tank farm areas. All personnel accessing either the 80s or 90s tank farm must obtain authorization to enter from the CRO.

- \_\_\_ 1. LEL: Must be less than 5% for entry and conduct of work.



## Operating Procedure Ballast Water Treatment

Title: Restriction of BWT Tank Farm Access

Number: BWT-1.20

Page: 2 of 3

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- \_\_\_ 2. Actions if LEL exceeds 5%:
  - \_\_\_ a. Stop all work and operating machinery in the work area.
  - \_\_\_ b. Evacuate the area.
  - \_\_\_ c. Notify the CRO.

### 90s and 80s Tank Dike Areas Restrictions:

- \_\_\_ 1. No work allowed in 90s tank dike area while deballasting or gravitating more than 3 feet per hour.
- \_\_\_ 2. Initial entry into BWT tank farm within one hour after a venting event, prior to driving in or work in tank farm, must be on foot to ensure area is clear of hydrocarbons.
- \_\_\_ 3. When working in 80s tank dike area, all influents (skimmer, DAF, BTT) must be stopped and isolated.
- \_\_\_ 4. Flame Resistant Clothing is required for all personnel entering the 90s and 80s tank farm areas.
- \_\_\_ 5. Continuous gas testing is required for all work in the 90s and 80s tank farm areas.
- \_\_\_ 6. Personnel entering the tank farm must have radio communication on established channel as determined by the CRO.
- \_\_\_ 7. Prior to commencement of deballasting/skimming, CRO must notify all personnel in the tank farm of the expected start time.

### Tank Farm Access requirement:

**Note:** The following will be followed for accessing the BWT Tank Farm.

Log In & Log Out is required in all BWT process areas. BWT operations and staff personnel are not required to log in and out.

- \_\_\_ 1. If no Work Permit has been issued: The individuals entering the tank farm must notify the CRO and sign in on the BWT Sign-In Log unless escorted by a BWT operator or staff. When clear of the area the individual(s) must notify the CRO (who will record the time out into the log) or return and sign themselves out.
- \_\_\_ 2. If a Work Permit has been issued: Personnel desiring to enter the tank farm in order to join or visit a work site will notify the CRO. If access is authorized, the individual will sign the back of the permit at the job site. When work/visit is complete, the individual(s) will notify the CRO.

**Caution: All equipment operating in the tank farm must be continuously monitored.  
Personnel monitoring must maintain a continuous gas test.**

- \_\_\_ 1. Any hot work permits in the BWT tank farm which involves operation of standing equipment must be reviewed and approved by the Terminal Manager (or designee). "Standing equipment" includes Tioga heaters, light plants, air compressors, etc.



## Operating Procedure Ballast Water Treatment

Title: Restriction of BWT Tank Farm Access

Number: BWT-1.20

Page: 3 of 3

Revision: 8

Effective Date: 12/31/07

**Note:** The intent of this control is to provide additional review for hot work to be conducted over an extended period of time which increases exposure to an event with potential of fire/explosion. This does not apply to permits for routine attended vehicle entries or use of handheld devices by Operations and Safety personnel.

### END OF PROCEDURE

#### References:

For 90s and 80s Tank Top Work refer to:

- BWT-1.61, *Restriction of BWT Tank Top Activities*

#### Revision History

| Revision | Date     | Revision Summary   |
|----------|----------|--|
| 8        | 12/31/07 | Delete part of sentence 1, with electric fans running. Change to 2. delete 'deballasting or gravitating, prior to' add 'a venting event, prior to'.  |
| 7        | 11/07/07 | Only one fan operating, change references that apply to two fans.  |
| 6        | 08/09/07 | Change to Special Instructions strike NO and replace with ALL Fans Running on the Tanks.   |
| 5        | 07/20/07 | Add to Special Instructions information concerning specific conditions during Vapor Recovery construction is completed. Add to #2. gravitating more then 3 feet per hour with all electric fans running. Format changes. |
| 4        | 3/07/07  | Add to 2. initial entry. Add step 4.a. Delete Supervisor approval, replace with Terminal Manager (or designee)   |
| 3        | 1/12/07  | Removed Step 3 for Vehicular traffic or work conducted during and within 1 hour of the completion of deballasting into the 80s or 90s tank area and the gas test.  |
| 2        | 1/12/07  | Revised bullets in #2 defining when work is not allowed in the 80s and 90s tank dike areas.  |
| 1        | 9/25/06  | Add bottom bullet to #2. Delete b.3. Add 5. and 5.a. Changes to #6. delete hot work order information. Delete numbers 7. and 8.  |
| 0        | 7/10/06  | New Procedure  |



## Operating Procedure Ballast Water Treatment

Title: 90's Tank Farm Access Control

Number: BWT-1.22

Page: 1 of 3

Revision: 0

Effective Date: 01/18/08

Approved by:

**Lloyd Street, BWT Supervisor for Joe Kuchin, BWT Manager**

Applicable to:

Ballast Water Treatment Facility

### Purpose

The purpose of this procedure is to outline the controls required for accessing and conducting work in the Valdez Marine Terminal BWT 90's tank farm.

### Accountable Resources

- BWT Lead Operator (LO)
- BWT Control Room Operator (BWT CRO)
- P/V Control Room Operator (P/V CRO)
- Project Single Point of Contact (SPOC)
- Safety Specialist
- Operations Control Center (OCC)
- VMT Maintenance

### Safety

- Fire Retardant Clothing (FRC)

### SPECIAL INSTRUCTIONS.

1. The BWT Operator is to assure good communications between working groups.
2. All steps in this procedure shall be completed in sequence unless specifically noted.

### PROCEDURE

Ballast Water Treatment (BWT) has the responsibility to verify safe access to the 90's tank farm dike area. The BWT CRO is the control point for access into the 90's tank farm dike area. All personnel are required to obtain authorization from the BWT CRO prior to accessing the 90's tank farm dike area.

### Normal Entry

1. A Job Loss Analysis (JLA) will be conducted before any work in 90's dike area during deballasting, 90's tank gravity transfer, or during abnormally high influent rates such as high snow melt or storm water collection.



## Operating Procedure Ballast Water Treatment

Title: 90's Tank Farm Access Control

Number: BWT-1.22

Page: 2 of 3

Revision: 0

Effective Date: 01/18/08

**Warning:** No Access to BWT 90's tank farm when TK 92 is receiving ballast.

- \_\_\_ 2. If work is to be performed within a tank farm dike area, an appropriate work permit must be obtained from the BWT CRO or Project SPOC.
- \_\_\_ 3. If work in the 90's tank farm dike area includes the use of equipment or tools that may generate a source of ignition, hot work permit requirements must be met in accordance with SA-38.
- \_\_\_ 4. BWT CRO will verify deballasting schedule by contacting OCC.
- \_\_\_ 5. The BWT CRO will contact P/V CRO to communicate work activities before a permit is issued.
- \_\_\_ 6. BWT Operator will conduct gas testing and report time with results to BWT CRO/Project SPOC for work permits documentation.
- \_\_\_ 7. The 90's tank farm dike area will be considered safe to work in with a permit and continuous gas monitoring.
- \_\_\_ 8. When the permit is issued, personnel working in the 90's tank farm dike area are required to wear FRC (as the outermost clothing), hard hat, safety glasses, and steel toed boots. Personnel must also observe continuous gas monitoring.
- \_\_\_ 9. Tank farm access points will be posted identifying the requirement for notifying BWT CRO Operator on radio channel 6 prior to entry of dike area.
- \_\_\_ 10. Personnel working in the tank farm dike areas or vapor valve platform are required to monitor channel 6 to allow for emergency or special instructions from the BWT CRO.
- \_\_\_ 11. Vehicles and equipment authorized in the 90's tank farm dike area will be attended at all times while in operation. Park vehicles and place equipment away from areas where tank vents are located.
- \_\_\_ 12. Snow removal operator needs to contact BWT CRO before accessing 90's tank farm.

### Evacuation

- \_\_\_ 1. In case of a tank venting, the P/V Operator will give instructions on channel 6 to evacuate the 90's tank farm. The 90's tank farm evacuation alarm will activate automatically. The BWT CRO can also activate the 90's tank farm evacuation alarm.
- \_\_\_ 2. Personnel working in the 90's tank farm dike area during an evacuation must shutdown all sources of ignition and all electrical equipment.
- \_\_\_ 3. Personnel must exit the 90's dike area and proceed to their designated rally point.
- \_\_\_ 4. BWT CRO and Project SPOC must ensure all personnel have evacuated the area and notify P/V CRO when clear.
- \_\_\_ 5. BWT CRO may deactivate the evacuation alarm at this time.



# Operating Procedure Ballast Water Treatment

Title: 90's Tank Farm Access Control

Number: BWT-1.22

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## Re-Entry after Evacuation

- \_\_\_ 1. The BWT LO, Project SPOC, BWT Operator and/or Safety Specialist must perform a gas test prior to the authorization of re-entry to the 90's tank farm dike area.
- \_\_\_ 2. If the gas test results are negative, the BWT LO or Project SPOC will announce an "ALL CLEAR" on channel 6.
- \_\_\_ 3. Work in the 90's tank farm dike area may resume under the "Normal Entry" criteria.

**Note:** Access control guidelines for 90's Tank Farm during "Scheduled Venting/Purging" of tanks for cleaning and returning to service are covered under PVR-1.95, *Purging a Crude or BWT 90's Tank*.

## END OF PROCEDURE

## References

- SA-38, *Corporate Safety Manual*
  - Requirement 1.15 - Work Permit System
- PVR-1.95, *Purging a Crude or BWT 90's Tank*
- 2007 Tank Farm Daily Operations & Maintenance Risk Assessment

## Records

None

## Revision History

| Revision | Date | Revision Detail                   |
|----------|------|-----------------------------------|
| 0        | TBD  | Initial issue from Project Z-538. |



# Operating Procedure

## Oil Movements and Storage

Title: East and West Tank Farm Access Control

Number: OMS-3.14 Page: 1 of 3

Revision: 1 Effective Date: 12/13/07

|  |                            |
|--|----------------------------|
| Approved by:<br><b>Ricky Kent, VMT Marine / OM&amp;S Manager</b> | Approval Date:<br>12/10/07 |
| Applicable to:<br>Oil Movements & Storage                        |                            |

### Purpose

The purpose of this procedure is to outline the controls required for accessing and conducting work in the Valdez Marine Terminal East and West tank farms.

### Accountable Resources

- OM&S Lead Operator (LO)
- OM&S Tank Farm Operator
- P/V Control Room Operator (CRO)
- Project Single Point of Contact (SPOC)
- Safety Specialist
- Operations Control Center (OCC)
- VMT Maintenance

### Safety

- Fire Retardant Clothing (FRC)

### PROCEDURE

Oil Movements & Storage (OM&S) has the responsibility to verify safe access to the East and West tank farm dike areas. The OM&S LO is the control point for access into the OM&S tank farm dike areas. All personnel are required to obtain authorization from the OM&S LO prior to accessing the tank farm dike areas.

### Normal Entry

1. A Job Loss Analysis (JLA) will be conducted before any work in dike areas when receiving product.
2. If work is to be performed within a tank farm dike area, an appropriate work permit must be obtained from the OM&S LO or Project SPOC.
3. If work in the tank farm dike area includes the use of equipment or tools that may generate a source of ignition, hot work permit requirements must be met in accordance with SA-38.
4. OM&S LO will verify crude oil distribution in tank farm by utilizing PI and or contact OCC to assess which relief tank is active and crude flowing into a designated tank farm dike area.
5. The OM&S LO will contact P/V CRO to communicate work activities before a permit is issued.



## Operating Procedure Oil Movements and Storage

Title: East and West Tank Farm Access Control

Number: OMS-3.14

Page: 2 of 3

Revision: 1

Effective Date: 12/13/07

6. OM&S Tank Farm Operator conducts gas testing and report time with results to OM&S LO/Project SPOC for work permits documentation.
7. The tank farm dike areas will be considered safe to enter with a permit and continuous gas monitoring.
8. When the permit is issued, personnel entering the tank farm dike area are required to wear FRC as the outermost clothing, hard hat, safety glasses, and steel toed boots. Personnel must also observe continuous gas monitoring.
9. Tank farm access points will be posted identifying the requirement for notifying OM&S Tank Farm Operator on radio channel 7 prior to entry of dike area.
10. Personnel working in the tank farm dike areas or tank access platforms are required to monitor one of the following channels (2, 7, 8, 9, 11, or 15) to allow for emergency or special instructions from the P/V CRO.
11. Vehicles and equipment authorized in the tank farm dike areas will be attended at all times while in operation. Park vehicles and place equipment away from areas where tank vents are located.
12. Normal snow removal and operator rounds do not require a work permit.

### Evacuation

1. In case of a tank venting, the P/V CRO will initiate an "ALL CALL" on channels 2, 7, 8, 9, 11, 15, and 16 to evacuate the tank farm. The P/V CRO will activate the tank farm evacuation alarm.
2. Personnel working in the tank farm dike areas during an evacuation must shutdown all sources of ignition and all electrical equipment.
3. Personnel must exit the dike areas and proceed to their designated rally point.
4. OM&S LO and Project SPOC must ensure all personnel have evacuated the area and notify P/V CRO when clear.
5. P/V CRO may deactivate the evacuation alarm at this time.

### Re-Entry after Evacuation

1. The OM&S LO, Project SPOC, OM&S Tank Farm Operator or Safety Specialist must perform a gas test prior to the authorization of re-entry to the tank farm dike area.
2. If the gas test results are negative, the OM&S LO or Project SPOC will request the P/V CRO to announce an "ALL CLEAR" on channels 2, 7, 8, 9, 11, 15, and 16.
3. Work in the tank farm dike areas may resume under the "Normal Entry" criteria.

**Note:** Access control guidelines for East and West Tank Farm during "Scheduled Venting/Purging" of tanks for cleaning and returning to service are covered under PVR-1.95, Purging a Crude Tank.

### END OF PROCEDURE



## Operating Procedure Oil Movements and Storage

Title: East and West Tank Farm Access Control

Number: OMS-3.14 Page: 3 of 3

Revision: 1 Effective Date: 12/13/07

### References

- SA-38, Corporate Safety Manual
  - Requirement 1.15 - Work Permit System
- PVR-1.95, Purging a Crude Tank
- 2007 Tank Farm Daily Operations & Maintenance Risk Assessment

### Records

None

### Revision History

| Revision | Date     | Revision Detail  |
|----------|----------|--|
| 1        | 12/13/07 | Replaces terminal procedure O-21.01.05. Make improvements. |
| 0        | 11/21/07 | Initial issue.   |

**PROBABLE VIOLATION 8:  
Tank 190 Vent Fire**

**PHMSA POSITION**

**Pertinent Regulation:**

49 CFR §195.408 Communications

- (a) Each operator must have a communication system to provide for the transmission of information needed for the safe operation of its pipeline system.
- (b) The communication system required by paragraph (a) of this section must, as a minimum, include means for:
  - (1) Monitoring operational data as required by §195.402(c)(9);
  - (3) Conducting two-way vocal communication between a control center and the scene of abnormal operations and emergencies

**Findings:**

Alyeska failed to provide an effective means of communications between the Control Room Operator (CRO) at PS9 and the task worker performing work on valve 20TO in the containment area of Tank 190 during the relief event and subsequent fire. The relief event was an abnormal operation and the fire was an emergency. The Control Room Log indicates that on January 6, 2007, at 15:07, the PS9 CRO notified the task worker via radio that a relief event was occurring. However, the task worker did not hear the notification due to the noise of the portable heater in the containment area and was not aware that a relief event was occurring.

Alyeska should have also activated the station alarm at PS9 to notify station personnel that a relief event was occurring.

**Proposed Civil Penalty:**

Regarding Item 8, the Compliance Officer has reviewed the circumstances and supporting documentation involved in the probable violation(s) and has recommended that Alyeska be preliminarily assessed a civil penalty in the amount of \$100,000.00.

**Proposed Compliance Order:**

In regard to Item Number 8 of the Notice pertaining to Alyeska's failure to have an effective means of communications between the Control Room Operator at PS9 and the task worker performing work in the break out tank area of Tank 190 during abnormal operations or an emergency, when a relief event occurred on January 6, 2007, Alyeska shall install appropriate pump station alarms to warn station personnel whenever a relief event occurs. Alyeska shall also improve its communication system to ensure that two-way vocal communications can be conducted effectively. Within sixty (60) days of

receipt of the Final Order Alyeska shall install the alarms, improve its communication system, and submit supporting documentation of both activities to the Director.

### **ALYESKA PIPELINE SERVICE COMPANY'S RESPONSE**

#### **Summary:**

Alyeska Pipeline Service Company (Alyeska) respectfully disagrees with PHMSA's finding that Alyeska did not have a communications system that complies with 49 CFR §195.408. Alyeska requests that the finding and the proposed compliance order be withdrawn, and PHMSA reconsider the proposed civil penalty.

#### **Discussion:**

Alyeska had an effective communications system in place between the Operations Control Center (OCC) and the scene of the abnormal operation and emergency at Pump Station (PS) 09 on January 6, 2007. The operations communications system includes microwave and satellite systems, leased common carrier circuits, telephone, in-plant radio, and mobile radio system and control stations for remote gate valves. This allows Alyeska to transmit information for safe operations. Voice communications are through telephones, in-plant radios and mobiles radios, used for both normal operations and emergencies.

The regulation does not specifically delineate the locations or types of communications systems, such as from one field location, i.e., PS09 control room, to another field location, i.e., the PS09 tank farm. Radio communications systems within facilities are a common form of two way communication. They are used throughout industry, the military, as well as emergency response providers.

Alyeska acknowledges that no radio communications system is 100% fail-proof. While Alyeska relies successfully on radio communications systems within pump stations, this incident is the rare example of circumstances that overcome the effectiveness of the system. This does not negate the existence of a communications system that meets the requirements of §195.408. PHMSA recognizes that Alyeska has a communications system in its finding when it stated that the Control Room Log shows that the CRO notified the worker via radio. (NOPV CPF 5-2007-5041, p. 8). Therefore, the proposed compliance order requiring that Alyeska improve its two way vocal communications is unnecessary and should be withdrawn.

As a result of the root cause incident investigation, Alyeska has installed an evacuation alarm system in the PS09 tank farm. There are two alarms, one located on the North side of Tank Farm, the other on the South side. When a relief event occurs, the relief valve opens, signaling the alarms to sound and an amber light to flash. In 2008, similar systems will be installed at the remaining pump stations. Therefore, the proposed compliance order requiring Alyeska to install pump station alarms to warn personnel about a relief event is unnecessary and should be withdrawn.

NOPV CPF 5-2007-5041  
Finding No. 8: Communications  
2/26/08

With regard to Finding 8, Alyeska respectfully requests that the finding and proposed compliance order be withdrawn. With regard to the proposed civil penalty, Alyeska requests that PHMSA reconsider the proposed civil penalty.

**PROBABLE VIOLATION 9:  
Tank 190 Vent Fire**

**PHMSA POSITION**

**Pertinent Regulation:**

49 CFR §195.438 Smoking or open flames

Each operator shall prohibit smoking and open flames in each pump station area and each breakout tank area where there is a possibility of the leakage of a flammable hazardous liquid or of the presence of flammable vapors.

**Findings:**

Alyeska failed to prohibit open flames and potential ignition sources inside the containment area at break out Tank 190 as required by §195.438. In general, there is a high probability that during a relief event the containment area could be exposed to flammable hazardous liquid and/or flammable crude oil vapors. During the January 6, 2007 relief event, flammable crude oil vapors were released from a relief valve on the top of Tank 190. The escaping vapors were ignited by a portable heater nearby, and a fire ensued. The fire scorched the vacuum/pressure valve on the top of Tank 190.

**Proposed Civil Penalty:**

Regarding Item 9, the Compliance Officer has reviewed the circumstances and supporting documentation involved in the probable violation(s) and has recommended that Alyeska be preliminarily assessed a civil penalty in the amount of \$100,000.00.

**ALYESKA PIPELINE SERVICE COMPANY'S RESPONSE**

**Summary:**

Alyeska Pipeline Service Company (Alyeska) respectfully disagrees with PHMSA's finding that Alyeska has failed to prohibit smoking and open flames in each pump station area. Alyeska requests that the finding be withdrawn, and PHMSA reconsider the proposed civil penalty.

**Discussion:**

Alyeska has a policy of strictly controlling smoking and hot work in areas where flammable vapors may be present. Accidental ignition of vapors is minimized by the Hot Work Permit procedure, Portable Industrial Heater procedures, Tank Farm Access and Control Operation Procedures, as well as the Smoking Policy. (See Exhibits 22 through 30).

Alyeska believes the purpose of this Part 195 requirement is to *control* ignition sources in areas where flammable materials may be present. It is not a prohibition of all hot work, which would be impracticable. Throughout the oil transportation and process industries regulated by federal agencies, it is standard industry practice to perform hot work in areas where the presence of flammable vapors cannot be eliminated entirely. The purpose of

hot work permitting procedures is to control ignition sources and potential fuel sources. Hot work is required in order to accomplish many tank farm maintenance activities. The key is to control the sources of ignition and flammables.

The purpose of the Hot Work Permit procedures in Alyeska's SA-38 is to address potential hazards while working in a Class I area as defined by the National Electrical Code (NEC) where there is a potential of flammable gases or vapors. Alyeska's Hot Work Permit procedures in SA-38, Section 1.15, were developed to evaluate and document control measures for potential fire and explosion hazards before beginning work in a Class I area. Heaters and other equipment (ignition sources), energy isolation or lockout, and other affected operations were addressed by the permit system in place on January 6, 2007 at the time of the vent fire.

However, as found in the root cause incident investigation, the employee who placed the heater in the tank breakout area was not following Alyeska's written procedures for the hot work permit and portable industrial heaters requirements respectively in SA-38 Section 1.15, Work Permits, and Section 2.1, Portable Industrial Heaters. (See Exhibits 22 and 23).

Alyeska strives to continually improve its processes to increase safety and reduce the possibility of human error. In response to the root cause incident investigation, Alyeska has revised its access control procedures for the pipeline and Valdez tank farms to minimize potential flammable vapor and ignition hazards in tank farm areas. These procedures were revised to control personnel access, restrict vehicle and standing equipment use, require hot work permits and isolate crude oil relief events into the tanks while maintenance and operations are being conducted in the tank farms. (See Exhibits 24 through 27).

With regard to Finding 9, Alyeska respectfully requests that the finding be withdrawn because Alyeska has a policy of strictly controlling smoking and hot work in areas where flammable vapors may be present. With regard to the proposed civil penalty, Alyeska requests that PHMSA reconsider the proposed civil penalty.

#### **SUPPORTING DOCUMENTATION**

- Exhibit 22 – SA-38, Section 1.15 Work Permits, Ed. 5, Rev. 21, Dec. 21, 2006
- Exhibit 23 – SA-38, Section 2.1 Portable Industrial Heaters, Ed. 5, Rev. 21, Dec. 21, 2006
- Exhibit 24 – N-1 00 13 Pump Station Tank Farm Access Control Operating Procedure
- Exhibit 25 – BWT-1 20 Restriction of BWT Tank Farm Access Operating Procedure
- Exhibit 26 – BWT-1 22 90s Tank Farm Control Operating Procedure
- Exhibit 27 – OMS-3 14 East and West Tank Farm Access Control Operating Procedure
- Exhibit 28 – OHU-8.01 Smoking Policy
- Exhibit 29 – SA-38, Section 1.15 Work Permits, Ed. 5, Rev. 26, Oct. 27, 2007

NOPV CPF 5-2007-5041  
Finding No. 9: Smoking or Open Flames  
2/26/08

Exhibit 30 – SA-38, Section 2.1. Portable Industrial Heaters, Ed. 5, Rev. 26, Oct. 27,  
2007

## 1.15 Work Permit System

### 1.15.1 Purpose

The purpose of the Work Permit System is to coordinate, authorize, and communicate work that must be controlled, in order to minimize the hazards associated with operating, maintaining, and modifying the Trans Alaska Pipeline System (TAPS).

### 1.15.2 Scope

Personnel who have not received the requisite training in the Work Permit System and proper orientation shall not be allowed to issue permits for such work at Alyeska facilities. All personnel who perform work that must be controlled, or who issue permits for such work at Alyeska facilities must become familiar with the Work Permit System outlined in this requirement. There may be additional procedures that have been adopted by local supervision.

### 1.15.3 References

- *FG-78, Operating, Maintenance & Emergency Plans for the Fuel Gas Pipeline*
- *MR-48, Trans-Alaska Pipeline Maintenance and Repair Manual*
- *SA-38, Corporate Safety Manual*
- SAF/075, "Work Permit Writing and Issuing"
- 29 CFR 1910, "Occupational Safety And Health Standards"
- 29 CFR 1926, "Safety And Health Standards For Construction"
- 33 CFR 154, "Facilities Transferring Oil Or Hazardous Material In Bulk"
- International Safety Guide for Oil Tankers and Terminals (ISGOTT)
- National Fire Protection Association (NFPA) 70E, "Standard for Electrical Safety Requirements for Employee Workplaces"

### 1.15.4 Titles and Responsibilities

Position titles may vary within operating areas. At times there may be more than one individual within a position category. When this occurs, responsibilities will be assigned to specific individuals and communicated to all affected parties prior to initiating work. It is everyone's responsibility to prevent an operation from being performed which has the potential to cause the area or equipment to become unsafe while the permit is in effect. Consideration should be given to simultaneous operations. For the purposes of this requirement, the following are example titles of positions and their defined responsibilities:

#### NOTES

1. The SERV'S Support Contractor may administer all Work Permit activities germane to their activities at the SERV'S base and warehouse complex.
2. The Maintenance Coordinators will issue and administer Pipeline Work Permits.

#### **1.15.4.1 Issuing Authority**

This title refers to the First-Line Supervisor, Area Operator, Lead Operator, Control Room Operator, Maintenance Coordinator, or SPOC who has issued the permit.

Responsibilities include but are not limited to:

1. Conduct detailed job discussions, assessment of hazards, and establish precautions needed to accomplish tasks safely.
2. Ensure that all necessary Gas Tests for explosive, flammable, toxic, or other hazardous conditions are conducted.
3. Ensure that all hollow spaces, cavities, or containers are tested and vented to permit the escape of air or gases prior to preheating, burning/cutting, or welding.
4. Ensure safe conditions for the permit and necessary tests are performed for flammable and/or other hazardous conditions immediately prior to the start of Hot Work, or when work is suspended or stopped for cause.
5. Inform Fire Watch of potential fire hazards.
6. Complete the permit questions and checklist to ensure compliance with all items specific to the work.
7. Assure that Energy Isolation is followed consistent with SA-38, 1.16, "Energy Isolation."
8. Notify all personnel and areas affected by the permit.
9. Notify local supervision, if required by them, that a permit has been requested.
10. Ensure that the Person Doing Work knows the location of the nearest communications equipment and applicable safety devices.
11. Sign as authorizing authority for Permits after ensuring that the permit is correctly filled out.
12. A copy of the Work Permit shall be posted in the Control Room or held in clearly marked holders at the place of issue.
13. Advise relief person of any outstanding permits.
14. Verify that all permit closeout sections have been completed.

#### **1.15.4.2 First-Line Supervisor**

This title refers to the Alyeska Supervisor responsible for all work which is permitted under their jurisdiction.

Responsibilities include but are not limited to:

1. Assure Issuing Authority has received appropriate Permit Training (SAF/075) and has thorough knowledge of the area in which work is being permitted.
2. Ensure that provisions of the Work Permit System are adhered to in their area of responsibility (such as reviewing permits, reviewing work in progress, conducting self-assessments, etc.).
3. Assist Issuing Authority through detailed job discussions, assessment of hazards, and establishment of precautions needed to accomplish tasks safely.
4. Approve requests (may be verbal) for when and where weekly Unit Work Permits may be issued.

5. Conduct Safety Stand-downs as required.
6. Communicate additional local controls as required.

#### 1.15.4.3 Area Operator

This title refers to the person responsible for the area in which the work is permitted.

Responsibilities include but are not limited to:

1. Acknowledge the permit and awareness of work to be performed by signing Work Permits. In the event the technician cannot sign the permit, technician may verbally acknowledge via radio or telephone. This proxy will be noted by the Issuing Authority who will mark the box "Verbally" on the permit endorsement block designated for the Area Operations Technician and print the Area Operator's name.
2. Perform or verify that all necessary Gas Tests for explosive, flammable, toxic, or other hazardous conditions are conducted.
3. Ensure/Verify combustible materials are covered or removed when cutting, grinding, or welding within a 35 foot area.
4. Perform Energy Isolation per SA-38, 1.16, "Energy Isolation."
5. Check availability and suitability of fire extinguishing equipment and/or other applicable safety equipment in the area.
6. Monitor the work, as appropriate, to ensure the conditions of the permit are not changing.
7. Inspect the work site to re-verify permit requirements after any interruption/emergency has occurred, prior to resuming work.
8. After work has been completed, at the discretion of the Area Operator, the permitted work area will be checked for safe conditions.
9. Advise the relief operator of any permits still in effect.

#### 1.15.4.4 Person Doing Work

This title refers to the person to whom the permit is issued.

**Note**

Permits will only be issued to personnel actually performing the permitted work. Endorsing multiple permits for multiple crews will not be allowed.

Responsibilities include but are not limited to:

1. Read and understand the conditions of the issued Work Permit before starting the job, and signify this understanding by signing the Work Permit.
2. Post the working copy of the permit at the work area or with the Person Doing Work if it cannot be posted at the job site.
3. Comply with Energy Isolation per SA-38, 1.16, "Energy Isolation."
4. Inspect the area to confirm safe working conditions. Ensure that the work crew knows location and operation of nearest safety and communication equipment such as telephone, fire alarm, emergency communication system, fire extinguisher, safety shower, first aid kit, etc., before starting work.

5. Be constantly aware of conditions in the immediate work area, and be ready to stop work if conditions change. Do not resume work without approval of the Issuing Authority.
6. Notify Issuing Authority when the job is suspended, completed, or when planned work or conditions change. Include such information as condition of site, any hazards, and scope of work completed.
7. Maintain radio contact with Issuing Authority or CRO/area operator as required.
8. Advise other workers of any special precautions or conditions pertaining to the job.
9. Appropriately mark the Closeout or Extension section of all issued Work Permits.
10. Clean up and secure the work area after completion of work each shift. At the end of the shift or upon completion of the work, whichever comes first, notify the Area Operator, return the permit to the Control Room or designated location, and complete the Closeout portion on the permit copy of record.

#### **1.15.4.5 Initiator/Requester**

This title refers to the person who initiates or requests the permit. This may or may not be the Person Doing Work.

#### **1.15.4.6 On-site Supervisor of Person(s) Performing the Work**

Responsibilities include but are not limited to:

1. Ensure that the necessary permit has been obtained before starting the job.
2. Assist operations/maintenance personnel through detailed job discussions and by helping to establish precautions needed to accomplish tasks safely.
3. Provide input to and help accomplish the safety requirements as outlined in the "special instructions" box of the permit.
4. Ensure that all endorsements have been made and that the Issuing Authority fully understands the job scope for which the permit was issued.
5. Monitor work for compliance to safety requirements.

#### **1.15.4.7 Alyeska or Contractor Safety Specialist**

It is recognized that not all work sites have full time Safety Department coverage, or that Safety Department availability may be minimal. When this is the case, Safety Department responsibilities, as required by the standards of this Safety Manual, may be delegated to a First Line Supervisor or other qualified person with documentation and concurrence.

When requested by Issuing Authority, the Alyeska or Contractor Safety Specialist shall provide an independent assessment of the work area and sign in the Special Instructions box of the permit for any work involving:

1. Burning, grinding, or welding (excluding buffing) on any process piping that has not been depressurized, blinded, or purged.
2. Piping used exclusively in seawater, water service, steam, and for which there is no potential for explosive atmospheres or hydrocarbon entry into the system are excluded from this requirement.

For Confined Spaces, the Alyeska or Contractor Safety Specialist shall:

1. Verify that the space has been properly prepared.
2. Test for oxygen content, flammability, toxic materials, and/or other hazards prior to entry.
3. After the permit is signed by the Issuing Authority, make the first entry into the enclosure, if necessary, to complete the safety evaluation.
4. Coordinate any special precautions and sign the Confined Space Entry Permit.
5. Endorse all Hot Work Permits that might affect the Confined Space Entry Permit, as requested by the Issuing Authority.
6. Participate in the identification of any restrictions that may be imposed on the permit.
7. Ensure the appropriate Alyeska procedures are followed and documented when re-classifying a confined space.
8. Determine whether or not a retrieval system or other emergency response equipment is required at the job site.
9. Assist operations personnel with preparation of Hot Work Permit in conjunction with Confined Space Entry Permit by inspecting job sites, conducting Gas Tests, helping to determine area classification, assigning Confined Space classifications, and reviewing special instructions on permits as needed.
10. Assist supervision in assessing the training of all responsible parties to ensure they can safely perform their work according to permit requirements.
11. Perform safety functions when requested for special projects outside normal routine work (e.g., tank entry, turnarounds, live tie-ins, etc.).
12. Assist in establishing special precautions when warranted by work activities.

#### **1.15.4.8 Fire Watch**

A Fire Watch shall be required, regardless of the NEC classification, whenever flame cutting, grinding, or welding activities are conducted in locations where a fire might develop or where any of the following conditions exist:

1. Appreciable amounts of combustible material (e.g., building materials) are closer than 35 feet away from the flame cutting, grinding, or welding work.
2. Appreciable amounts of combustibles are more than 35 feet away from the flame cutting, grinding, or welding work, but could be easily ignited by sparks.
3. Wall or floor openings within a 35 feet radius expose combustible material in adjacent areas, including concealed spaces in walls or floors.
4. Combustible materials are adjacent to the opposite side of metal partitions, walls, ceilings, or roofs and could possibly be ignited by conduction or radiation.

Fire Watches at Alyeska facilities shall have appropriate fire extinguishing equipment, a hand held two-way radio readily available, and be trained in the use of both. They shall be familiar with procedures and equipment for sounding an alarm in the event of a fire.

Fire Watches shall remain alert and watch for indications of fires in all exposed areas and shall extinguish fires when obviously within the capacity of the equipment available, and if possible, sound the alarm prior to attempting extinguishment.

A fire watch shall be maintained for AT LEAST ONE HALF HOUR after completion of flame cutting, grinding, or welding operations to detect and extinguish possible smoldering fires.

**Note**

Fire Watch requirements may apply for portable industrial heaters and other heat-producing equipment as per SA-38.

### 1.15.5 Work Permit Requirements

The Work Permit System shall apply to all work activities that must be controlled and is performed by Alyeska personnel, contractors, and sub-contractors at all work locations under Alyeska supervisory responsibility, including pipeline road crossings, Mainline Valve locations, pipeline underground cooling systems, vaults, etc.

1. When completing or initiating the Unit, Hot and Pipeline Work Permits, all fields of the permit must be addressed except as follows:
  - a. *Extended To* and *Extending Shift*, if there was no extension.
  - b. If a Gas Test was checked *No* or *N/A* then no Gas Test Results need be filled in.
  - c. *Check Boxes* not checked that refer to Page 2 need not be marked.
  - d. Optional boxes unless directed there by the permit.
  - e. The use of *N/A*, *No*, *None*, or a slash (/ or -) is acceptable to indicate that a response was considered.
2. For Excavations, any work of a civil nature, or activities that require lifting over the mainline pipe, the local MC should be consulted prior to issuing the permit.
3. For Confined Space Entry Permit, and Work Permits associated with the Confined Space Entry Permit, all fields must be completed.
4. For line-by-line instructions on using the forms of the Work Permit System, see training module SAF/075, which is available from Alyeska Training and Development or on the Alyeska A-Net.

#### 1.15.5.1 Time Limits

##### 1.15.5.1.1 Duration, Extension and Closeout of Permits

1. Duration

All permits should be issued to cover the period required to accomplish the tasks, subject to these limitations:

- a. Unit and Hot Work Permits are normally issued not to exceed one work shift (12 hours) although, with proper endorsement by incoming personnel, they may be extended through the next shift.
- b. Confined Space Entry Permits shall be issued for only one work shift (12 hours) and shall not be extended.
- c. Unit Work Permits may be issued for a maximum of one week as determined by supervision.

- d. Pipeline Work Permits may be issued for the required time to complete a defined job task.
2. Extension

Permits will be in effect until job completion and may be extended past the work shift consistent with the following Work Permit Extension Requirements:

- a. Extensions may only be issued to original Persons Doing Work.
- b. A new Gas Test must be performed if required on original issuance.
- c. There is no change in work scope.
- d. Signatures by incoming Issuing Authority and Persons Doing work are required on all permit copies.

**Note**

If work deviates from the permit as issued, a new permit must be issued.

3. Permit Closeout
- a. Permits should be returned to Issuing Authority as soon as work is complete or at end of shift, whichever comes first.
  - b. The Person Doing Work will complete applicable Permit Closeout section.
  - c. Post Work Comments should include such things as, can equipment be run, does oil need to be added, any precautions, work complete, etc.

#### 1.15.5.2 Stop Work

It is the responsibility of all personnel working on Alyeska property or facilities to stop any work that may be unsafe to personnel, equipment, facilities or the environment.

If work is stopped for unsafe conditions, applicable permits shall be cancelled.

If work is stopped for tank venting, all work shall be suspended until the work area is deemed safe. The permit can then be used again and work resumed.

#### 1.15.5.3 Facility Map

Each Alyeska location/facility which issues Work Permits must prepare a Facility Map which clearly identifies all United States Coast Guard (USCG) regulated areas (Valdez Marine Terminal and SERVS) and NEC-defined Class I areas.

This map will be used by all Work Permit Issuing Authorities as a guide to determine whether or not a Work Permit is mandated by regulation. Additional areas may be identified on the local Facility Map, as conditions or requirements change, which would also require a Work Permit before any work is to be authorized. Managerial discretion could also authorize this Facility Map to include:

- 1. Laydown areas where daily, weekly, or longer permits are authorized.
- 2. Approved "shop" areas where Work Permits are not normally required.
- 3. Other pertinent markings local management may desire, such as approved smoking areas.
- 4. Areas where PSM regulations apply.

5. In the absence of such a facility/location map, all areas will be considered to be controlled areas and appropriate Work Permits must be issued.
6. Area maps may be given to contractors to assist them in identifying areas that require Work Permit authorizations.

#### **1.15.5.4 Verbal Approval of Work Permits at Remote Locations on the Pipeline**

The procedures for verbal approvals are intended to enhance the ability to perform work in a timely manner.

When Work Permits at remote locations are issued and/or closed using verbal, telephone/radio, or faxed communication between the Issuing Authority and Person Doing Work, the following requirements must be met:

1. A completed and signed copy of the current Work Permit, in compliance with all sections of this requirement, must be kept by the Issuing Authority.
2. An additional copy of the Work Permit must be posted at the work site.
3. At the completion of the work, the Work Permit must be returned in a timely manner to the Issuing Authority. The copy of the Work Permit at the work site may be signed as closed, and faxed, delivered, or mailed to the Issuing Authority.

#### **1.15.5.5 Unit Work Permit, Form 0161**

The Unit Work Permit is used to authorize work activities that must be controlled but do not present any of the hazards normally associated with Hot Work in Classified Areas or Confined Spaces.

A Unit Work Permit is appropriate for the following types of work:

1. Activities that require work related to general maintenance.
2. Activities that will not introduce a source of ignition into NEC Class I areas.
3. Activities that require Hot Work in unclassified areas.
4. Activities that require work on energized electrical systems over 50 volts in unclassified areas. The following criteria apply:
  - a. Persons Doing Work shall follow safe work practice guidelines per NFPA 70E, and OSHA 29 CFR 1910 and/or 29 CFR 1926.
  - b. Certain cabinets containing control voltages and equipment may also contain exposed terminals that are at a higher potential. Jobs that require electrical rework or personnel exposure in such cabinets may require additional safeguards, including additional qualified persons present as needed for job safety.
  - c. Only qualified persons may work on electrical circuits or equipment that have not been deenergized.
  - d. Two qualified persons may be required when working on electrical circuits or equipment.

**Note**

Bench work in a shop which is deemed not to be hazardous does not typically require a Work Permit.

5. Excavations, to be performed per guidelines in 2.6, "Excavation Safety."
6. The use of Ionization Radiation Equipment, The following criteria will apply:
  - a. Positive communication must be established with Area Operator and the operations supervisor whenever radiographic equipment is used within a 500 yard radius of any facility having ultraviolet (UV) detection/fire suppression systems.
  - b. The radiography crew must submit a work plan to the operations supervisor, or designee, describing the area where the radiography equipment will be used, what is to be examined, the expected duration of the job, the Single Point of Contact (SPOC), which areas will be restricted, and any other information that is pertinent to the work.
    - 1) Radiation emitting devices must remain locked within the transporting vehicle while preparations for testing are made. The radiography crew must notify the Area Operator before each test is made, and again after each test is completed.
    - 2) Applicable warning signs must be posted around the work area to warn personnel of radiation hazards.
    - 3) UV detection/fire suppression systems in the affected work area must be bypassed or shielded when radiography is performed at Pump Stations (refer to Section 3.4, "Bypassed, Damaged, or Inoperable Safety Devices").
    - 4) Positive communication must be established with Area Operator and the operations supervisor whenever radiographic work is completed and UV/fire suppression systems must be returned to normal conditions as per the work plan.
7. Activities that require work in a Permit Required Confined Space Reclassified as Non-Permit Required Confined Space.
8. Pressure testing.
9. Cutting, grinding, welding in non-classified areas.

#### **1.15.5.6 Hot Work Permit, Form 0162**

The Hot Work Permit is used to authorize activities that require special controls to prevent fire or explosion. The Hot Work Standard minimizes the potential of fire or explosion in Classified Areas by requiring a Hot Work Permit. The Issuing Authority may require Hot Work Permits based on Facility Operating Guidelines. Area Classification drawings and applicable industry standards will define the Classified Areas.

##### **1.15.5.6.1 Hot Work Permit Activities**

A Hot Work Permit is required but not limited to the following activities:

1. Open flame, burning, grinding or welding, within 75 feet of a Classified Area,
2. The use of non-intrinsically safe electrical tools and instruments in a Classified Area,
3. Work on electrical circuits including the opening of explosion proof boxes or junction boxes in a Classified Area,
4. Activities that require work on energized electrical systems in Classified Areas. The following criteria apply:
  - a. The area shall be Gas Tested.

- b. Person Doing Work shall follow safe work practice guidelines per NFPA 70E, and OSHA 29 CFR 1910 and/or 29 CFR 1926.
  - c. Certain cabinets containing control voltages and equipment may also contain exposed terminals that are at a higher potential. Jobs that require electrical rework or personnel exposure in such cabinets may require additional safeguards, including additional qualified persons present as need for job safety.
  - d. Only qualified persons may work on electrical circuits or equipment that have not been deenergized.
  - e. Two qualified persons may be required when working on electrical circuits or equipment.
5. The use of spark producing devices in a Classified Area.
  6. Hot work on portable and mobile containers which contain or have contained flammable or combustible materials.
  7. Impedance thawing.
  8. Hot Taps, to be performed per guidelines in SA-38, and/or MR-48 and FG-78.
  9. Heaters, cranes, and other equipment that may introduce an ignition source, operating within a Classified Area.

#### **1.15.5.6.2 Hot Work Permit Precautions**

The following precautions shall be taken before a Hot Work Permit is issued (if applicable):

1. Ensure compliance with SA-38, 1.19, "Welding and Flame Cutting," especially Section 1.19.6.4, has been met.
2. Ensure compliance with SA-38, 1.16, "Energy Isolation," has been met.
3. A qualified person (Alyeska or contractor) will Gas Test the area prior to the start of the work, and if necessary, continue to periodically Gas Test all affected work areas
4. A trained person has been assigned as the designated Fire Watch.
5. Fire and gas detection systems have been isolated or by-passed.
6. Fire blankets and catch basins are in place.
7. Appropriate fire extinguishing equipment is available at the work site.
8. Adequate ventilation has been established.
9. Sumps and drains have been checked and adequately covered within 35 feet of the work site.
10. Welding machines are grounded as close to the welding point as practical.

#### **1.15.5.7 Blinding and Variance Guidelines**

Alyeska's blinding requirements are provided in SA-38, 1.16, "Energy Isolation," and are consistent with the blinding requirements of the Alaska Safety Handbook with the exception that Alyeska does not require a variance for double block and bleed, including Hot Work Permits.

By Government regulation, variances are not permitted for a double block and bleed in lieu of blinding for cutting or welding on used drums, barrels, tanks, or other containers. Any pipelines or connections to the drum, tank, or vessel must be disconnected or blinded.

In cases of Hot Work on equipment which has been used exclusively in seawater, water service, or steam, and if there is no potential for explosive atmospheres or hydrocarbon entry into the system, a single block, as a minimum, is acceptable for isolation in lieu of blinding.

#### **1.15.5.8 Hot Work in Confined Spaces**

When arc welding is to be suspended (unattended for a period of 30 minutes or more), all electrodes must be removed from the holders and carefully located so that accidental contact cannot occur, and the machine must be disconnected from the power source or turned off.

When gas welding or burning/cutting, the torch valves must be closed and the gas supply to the torch positively shut off at some point outside the Confined Space whenever the torch is not being used for a substantial period of time (unattended for a period of 30 minutes or more). Where practical, the torch and hose must also be removed from the Confined Space.

When welding or burning/cutting is being performed in a Confined Space, the gas cylinders and welding machines must be left outside of the Confined Space.

After welding operations are completed, the welder must mark the hot metal or provide some other means of warning other workers.

Local exhaust and/or general ventilation must be adequate to keep the amount of toxic fumes, gases, or dust below maximum allowable concentrations or appropriate respiratory protection must be utilized.

#### **1.15.5.9 Hot Work on Berths 1, 3, 4, and 5 at VMT**

The *International Safety Guide for Oil Tankers and Terminals* defines Hot Work In Uncontrolled Loading Areas as work involving sources of ignition or temperatures sufficiently high enough to cause the ignition of a flammable gas mixture. This includes any work requiring the use of welding, burning, or soldering equipment, blow torches, some power driven tools, portable electrical equipment that is not intrinsically safe or contained within an approved explosion-proof housing, sandblasting, or internal combustion engines. The USCG will issue an annual welding and Hot Work Permit to the Terminal in accordance with 33 CFR 154, "Facilities Transferring Oil Or Hazardous Material In Bulk." No further notifications to the USCG are required for work being performed on the berth relating to Hot Work. Specific rules are as follows:

1. Hot Work will not be performed on a berth with a tanker alongside during uncontrolled loading.
2. Hot Work will not be performed in the construction dock area when a tanker is alongside Berth 1 during transfer operations.
3. Hot Work will not be performed at the tug dock or in the immediate onshore area when a tanker is alongside Berth 3 during transfer operations.
4. Approved Hot Work may be permitted with a tanker alongside if all of the following conditions are met:
  - a. Hot Work is limited to the removal of explosion-proof housing in a Classified Area to set, adjust, or inspect electrical connections and limit switches.
  - b. Crude loading is vapor controlled. Hot Work will be immediately discontinued if tanker venting or any unusual conditions occur with the operation of the vapor control system.
  - c. Continuous Gas Testing during work.

- d. Signs have been placed at the 100-foot mark to show clear delineation.

**Note**

Notifications to the USCG may be necessary for Hot Work on the berths.

### **1.15.5.10 Confined Space Entry Permit, Form 0160**

The Confined Space Entry Permit is used to authorize entry into Confined Spaces meeting one or more of the following characteristics:

1. Contains or has the potential to contain a hazardous atmosphere.
2. Contains a material that has the potential for engulfing an entrant.
3. Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross section.
4. Contains any other recognized serious safety or health hazards.

Examples of Confined Spaces that may meet the criteria identified above include, but are not limited to, process vessels, process towers, tanks, sumps, pits, sewers, compartments with a manhole, valve pits, well cellars, pipelines.

Authorization of work requires an appropriate Unit, Pipeline, or Hot Work Permit. In no circumstances will a Confined Space Entry Permit be issued without an appropriate Work Permit. All associated permits must be attached to the Confined Space Entry Permit on completion of work and retained for one year.

#### **1.15.5.10.1 General Considerations**

1. The Confined Space Entry Permit does not authorize work to begin. The Confined Space Entry Permit must be accompanied by an appropriate Unit, Pipeline, or Hot Work Permit.
2. When personnel entry into a Confined Space is required, job specific procedures shall be followed. The procedure will outline the draining, blinding, cleaning, inspection, and work to be performed. The detail of the procedure will be appropriate to the job. The procedure will be reviewed by all involved departments (including FSIH) before work begins.
3. Prior to entry, the contents and hazards of the Confined Space shall be identified. Whenever possible, tanks, vessels, and piping shall be cleaned by water washing, flushing, or steaming. Cleaning by hand should be limited to final cleanup unless no other cleaning process is feasible.
4. Prior to the entry, all potential sources of energy affecting the space shall be isolated in accordance with SA-38, 1.16, "Energy Isolation." Furthermore, vapor barriers are not an acceptable substitute for blinds.
5. All connecting lines to the vessel shall be physically disconnected and misaligned or blinded at a point as near to the space as possible.
6. Adequate ventilation shall be maintained in the Confined Space throughout the entry operation. All ventilation equipment shall be bonded and grounded. If mechanical ventilation is used, it must be located in such a manner that it will not introduce contaminants such as gas or toxic vapors. In addition, it should be placed in such a manner that it will not prevent egress from the space. This will be verified by the Alyeska or Contractor Safety Specialist, and monitored by the Attendant.
7. An area outside the Confined Space shall be made available for decontamination as necessary.

8. Retrieval Systems shall be used whenever an entrant enters a Confined Space, as covered by this section, unless the retrieval system would increase the overall risk of the entry or would not contribute to the rescue of the entrant. Alyeska or Contractor Safety Specialist will determine when retrieval systems are appropriate.
9. Any Hot Work in a location that may affect the Confined Space shall be approved by all parties who have authorized and signed the Confined Space Entry Permit. Any Hot Work performed within the boundaries of a Confined Space shall be approved and signed off by Alyeska or Contractor Safety Specialist and should be referenced to the Hot Work Section under the "Hot Work in a Confined Space" section. A Gas Test of the atmosphere where the Hot Work is to take place shall be performed by the Alyeska or Contractor Safety Specialist and documented on the Hot Work Permit.
10. Permit-Required Confined Space entry safety plans/procedures must be approved by the local supervisor, entry supervisor, and Field Safety representative and available at the entrance to the Permit-Required Confined Space.
11. The Entry Supervisor may add entrants to the Confined Space Entry Permit or Badge Board.
12. The Confined Space Entry Permit and associated written plans shall be kept for one year and reviewed annually for improvements in the Permit-required Confined Space Entry Program.

#### **1.15.5.11 Pipeline Work Permit, Form 3459**

The Pipeline Work Permit is used by Pump Station Maintenance Coordinators (MCs) to ensure that work being performed along the TAPS and Fuel Gas Line (FGL) Pipeline Right-of-Way (ROW) is performed safely and efficiently without damage or danger to personnel, property, or the environment. Pipeline Work Permits are also utilized for work activities outside the pipeline ROW such as River Training Structures, Oil Spill Containment Sites, airfields, and Operation Material Sites (OMS), and typically require additional agency permitting.

Along the ROW are fenced compounds that contain Remote Gate Valves (RGVs), Ledeen Operated Check Valves, Metering Facilities, Cathodic Protection Sites, and Main Line Refrigeration Units (MLRs). Unit, Hot, or Confined Space Entry Permits issued by the local Pump Station normally control any activities within these fenced areas.

The Maintenance Coordinator (MC) or designee has the authority and responsibility to control all activities in their area of responsibility along the pipeline ROW or off-ROW sites as indicated above by use of the Pipeline Work Permit or by verbal agreement with the Person Doing the Work, as appropriate.

In some cases, a line wide Pipeline Work Permit may be written by the Issuing Authority after coordination with the individual MCs responsible for each area along the pipeline. In this case, the Person Doing Work must notify the local MC in advance prior to commencing work in the MC's area, and interface with the MC to review details of the line wide Pipeline Work Permit prior to starting work. Upon completion of work in the local MC's area, the Person Doing Work notifies both the local MC and Issuing Authority. The Issuing Authority is responsible for permit closeout and notification to the individual MCs when the work associated with the line wide Pipeline Work Permit is complete.

The Pipeline Work Permit is appropriate for the following types of work:

1. Any new pipeline or pipeline modification work, to include Nondestructive Testing (NDT).
2. New construction adjacent to the pipeline.
3. Earthwork/excavation activities, mineral mining, hauling/stockpiling activities.

4. Cathodic Protection surveys, fuel gas line leak surveys.
5. Test station, monitor rod, fence, sign, gate installation, or repairs.
6. Bridge, above ground pipeline (support and insulation), transition and animal crossing maintenance, or repairs.
7. Routine workpad maintenance, river training structures, low water crossing, and culvert construction or repair.
8. Pigging activities, mainline valve DOT function tests, mainline valve winterization.
9. Work by third parties on the ROW.

**Note**

Other work permits as appropriate (Unit, Hot, or Confined Space Entry) shall apply to all locations that are covered by the Pipeline Work Permit.

**1.15.5.11.1 Pipeline Right-of-Way (ROW)**

The pipeline ROW is described as the land within which Alyeska is authorized to install, operate, and maintain the pipeline. For Work Permit activities, this term is normally used to identify any work area within the TAPS and Fuel Gas Line ROW that is outside of the Pump Station and Valdez Terminal perimeter fences.

1. The width of the ROW measured from pipeline centerline is variable and dependent on the landowner, pipeline mode, facilities, and special burial modifications. ROW widths for the pipeline on private lands vary on a case-by-case basis. Typical ROW widths are described in *MR-48* and *FG-78*.
2. Work that will result in the disturbance of vegetation outside the existing workpad embankment even though the work site may be within the formal pipeline ROW requires written landowner approval.

**1.15.5.11.2 General Considerations**

Reference *MR-48, Trans-Alaska Pipeline Maintenance and Repair Manual* or *FG-78, Operating, Maintenance & Emergency Plans for the Fuel Gas Pipeline*, for minimum approved requirements, guidelines, and methods to cover the majority of pipeline maintenance and repair situations.

**1.15.6 Definitions**

**1.15.6.1 NEC Class I Area**

An area in which flammable gases or vapors are or may be present in the air, in quantities sufficient to produce explosive or ignitable mixtures.

**1.15.6.2 Hot Work In Berth Uncontrolled Loading Areas**

Work involving sources of ignition or temperatures sufficiently high enough to cause the ignition of a flammable gas mixture. This includes any work requiring the use of welding, burning, or soldering equipment, blow torches, some power driven tools, portable electrical equipment that is

not intrinsically safe or contained within an approved explosion-proof housing, sandblasting, or internal combustion engines. (As defined by the *International Safety Guide for Oil Tankers and Terminals*.)

### **1.15.6.3 Work Permit**

A control document that authorizes all work activities that must be controlled in a particular area. Specific federal and state regulations require written Work Permits for Permit-Required Confined Space Entry and for cutting, grinding, and welding operations. Alyeska has also elected to use Unit Work Permits (*Form 0161*), Hot Work Permits (*Form 0162*), and Pipeline Work Permits (*Form 3459*) to control other types of work as well.

### **1.15.7 Training**

N/A

### **1.15.8 Records**

Quality and Non-Quality records driven by this requirement in SA-38 are listed below.

For record retention requirements, see the *Records Retention Schedule* located under Resources\Records\Records Retention Schedule on the A-Net.

#### **1.15.8.1 Quality Records**

- *Form 0160, Confined Space Entry Permit* (including all associated work permits)

#### **1.15.8.2 Non-Quality Records**

- *Form 0144, Work Log*
- *Form 0161, Unit Work Permit*
- *Form 0162, Hot Work Permit*
- *Form 3459, Pipeline Work Permit*



# C- CONFINED SPACE ENTRY PERMIT

|   |  |                    |   |                     |  |  |  |                                 |   |                          |      |                          |  |                          |  |
|---|--|--------------------|---|---------------------|--|--|--|---------------------------------|---|--------------------------|------|--------------------------|--|--------------------------|--|
| <b>C-</b>   |  |                    |   |                     |  |  |  |                                 |   |                          |      |                          |  |                          |  |
| THIS PERMIT IS FOR ENTRY ONLY. IF WORK IS TO BE PERFORMED, A UNIT, HOT, OR PIPELINE WORK PERMIT MUST BE ATTACHED.   |  |                    |   |                     |  |  |  |                                 |   |                          |      |                          |  |                          |  |
| If this permit requires entry into area subject to vapor releases, the person doing the entry MUST contact the Control Room for permission to enter the area and have continuous radio contact with the Control Room while in the area. This permit may be cancelled by anyone at any time.<br><b>RETURN THIS PERMIT TO ISSUING AUTHORITY WHEN WORK IS COMPLETE, OR BY THE END OF THE SHIFT, WHICHEVER COMES FIRST.</b> |  |                    |   |                     |  |  |  |                                 |   |                          |      |                          |  |                          |  |
| Permit Initiator/Company:   |  |                    |   | Entry Supervisor:   |  |  |  | Date:                           |   |                          |      |                          |  |                          |  |
| Confined Space Location/Identification:   |  |                    |   |                     |  |  |  | Control/MC No.:                 |   |                          |      |                          |  |                          |  |
| Confined Space Description:   |  |                    |   |                     |  | Work Description:  |  |                                 |   |                          |      |                          |  |                          |  |
| Entrants Listed On: <input type="checkbox"/> Badge Board <input type="checkbox"/> Permit page 2   |  |                    |   |                     |  | Attendant(s):  |  |                                 |   |                          |      |                          |  |                          |  |
| List the Hazards of the Confined Space and those that may be created by the work:   |  |                    |   |                     |  |  |  |                                 |   |                          |      |                          |  |                          |  |
| <b>ACCEPTABLE ENTRY CONDITIONS OF INTERNAL/EXTERNAL HAZARDS (PLEASE CHECK APPROPRIATE BOXES)</b>  |  |                    |   |                     |  |  |  |                                 |   |                          |      |                          |  |                          |  |
| Area Posted/Barricaded <input type="checkbox"/> Yes <input type="checkbox"/> N/A  |  |                    | Purging Complete <input type="checkbox"/> Yes <input type="checkbox"/> N/A      |                     |  | Pressure Relieved <input type="checkbox"/> Yes <input type="checkbox"/> N/A  |  |                                 | MSDSs On Site <input type="checkbox"/> Yes <input type="checkbox"/> N/A                                   |                          |      |                          |  |                          |  |
| Piping Isolated <input type="checkbox"/> Yes <input type="checkbox"/> N/A   |  |                    | Ventilation Operating <input type="checkbox"/> Yes <input type="checkbox"/> N/A |                     |  | Electrical Isolation <input type="checkbox"/> Yes <input type="checkbox"/> N/A   |  |                                 | Other <input type="checkbox"/> Yes <input type="checkbox"/> N/A   |                          |      |                          |  |                          |  |
| Blinding Done <input type="checkbox"/> Yes <input type="checkbox"/> N/A   |  |                    | Safe Access/Egress <input type="checkbox"/> Yes <input type="checkbox"/> N/A    |                     |  | Rotating Equipment Disconnected <input type="checkbox"/> Yes <input type="checkbox"/> N/A                                |  |                                 | Affected areas, e.g., OCC, Rescue Team notified <input type="checkbox"/> Yes <input type="checkbox"/> N/A |                          |      |                          |  |                          |  |
| Safety Plans/Procedures/Variations reviewed and at the work site? <input type="checkbox"/> Yes <input type="checkbox"/> N/A   |  |                    |   |                     |  | List associated Work Permits: <input type="checkbox"/> Yes <input type="checkbox"/> N/A                                  |  |                                 |   |                          |      |                          |  |                          |  |
| Will work being done in Confined Space introduce additional hazards? <input type="checkbox"/> Yes <input type="checkbox"/> N/A  |  |                    |   |                     |  | If Yes, will Acceptable Entry Conditions mitigate the hazards? <input type="checkbox"/> Yes <input type="checkbox"/> N/A |  |                                 |   |                          |      |                          |  |                          |  |
| Is Continuous Gas Test equipment prepared? <input type="checkbox"/> Yes <input type="checkbox"/> N/A  |  |                    |   |                     |  |  |  |                                 |   |                          |      |                          |  |                          |  |
| <b>Atmospheric Limits:</b>  |  | % O <sub>2</sub> : |   | % LEL:              |  | H <sub>2</sub> S ppm:  |  | CO ppm:                         |   | THC ppm:                 |      | Other:                   |  |                          |  |
| <b>Initial Test Results:</b>  |  | % O <sub>2</sub> : |   | % LEL:              |  | H <sub>2</sub> S ppm:  |  | CO ppm:                         |   | THC ppm:                 |      | Other: Time: Tester:     |  |                          |  |
| Initial Gas Detection Equipment:  |  |                    |   | Initial Gas Tester: |  |  |  | Verbal <input type="checkbox"/> |   | Recording Frequency:     |      |                          |  |                          |  |
| Attendant Communication w/Entrants: <input type="checkbox"/> Direct <input type="checkbox"/> Radio Channel <input type="checkbox"/> Air Horns <input type="checkbox"/> Specified in Safety Plan   |  |                    |   |                     |  |  |  |                                 |   |                          |      |                          |  |                          |  |
| Equipment Requirements: <input type="checkbox"/> PPE as specified in Safety Plan <input type="checkbox"/> Non-Entry Retrieval System <input type="checkbox"/> Fall Protection <input type="checkbox"/> As listed on page 2  |  |                    |   |                     |  |  |  |                                 |   |                          |      |                          |  |                          |  |
| Rescue Contact Person or Team:  |  |                    |   |                     |  | Contact Method:  |  |                                 |   |                          |      |                          |  |                          |  |
| <b>SPECIAL INSTRUCTIONS:</b>  |  |                    |   |                     |  | <b>PERMIT AUTHORIZATIONS</b>   |  |                                 | Time  |                          | Date |                          |  |                          |  |
|   |  |                    |   |                     |  | Area Operator:   |  |                                 |   |                          |      |                          |  |                          |  |
|   |  |                    |   |                     |  | Safety Rep:  |  |                                 |   |                          |      |                          |  |                          |  |
|   |  |                    |   |                     |  | Entry Supervisor:  |  |                                 |   |                          |      |                          |  |                          |  |
|   |  |                    |   |                     |  | Issuing Authority:   |  |                                 |   |                          |      |                          |  |                          |  |
| <b>PERMIT CLOSEOUT OR CANCELLATION</b>  |  |                    |   |                     |  |  |  |                                 |   | Yes                      |      | No                       |  | N/A                      |  |
| 1. Has the work Area and/or Equipment been cleaned up?  |  |                    |   |                     |  |  |  |                                 |   | <input type="checkbox"/> |      | <input type="checkbox"/> |  | <input type="checkbox"/> |  |
| 2. Has the Area Operator been notified?   |  |                    |   |                     |  |  |  |                                 |   | <input type="checkbox"/> |      | <input type="checkbox"/> |  | <input type="checkbox"/> |  |
| 3. List Problems Encountered:   |  |                    |   |                     |  |  |  |                                 |   |                          |      |                          |  |                          |  |
| 4. Entry Supervisor:  |  |                    |   |                     |  | Time:  |  |                                 | Date:   |                          |      |                          |  |                          |  |
| <input type="checkbox"/> Permit Canceled  |  | Time:              |   | Initials:           |  | Reasons:   |  |                                 |   |                          |      |                          |  |                          |  |
| 5. Have other affected areas, e.g. OCC, been notified of status of this permit?   |  |                    |   |                     |  |  |  |                                 |   | <input type="checkbox"/> |      | <input type="checkbox"/> |  | <input type="checkbox"/> |  |
| 6. All Isolated, By-Passed, or Shutdown systems returned to normal?   |  |                    |   |                     |  |  |  |                                 |   | <input type="checkbox"/> |      | <input type="checkbox"/> |  | <input type="checkbox"/> |  |
| 7. Issuing Authority:   |  |                    |   |                     |  | Time:  |  |                                 | Date:   |                          |      |                          |  |                          |  |

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Figure 6. Form 0160, Confined Space Entry Permit (Page 1)





# UNIT WORK PERMIT

| U-  |  |                    |  |                         |   |   |                          |                          |                          |
|---|--|--------------------|--|-------------------------|---|---|--------------------------|--------------------------|--------------------------|
| <p>If this work requires entry into area subject to vapor releases, the person doing the work MUST contact the Issuing Authority for permission to enter the area and have continuous radio contact with the Issuing Authority while in the area. This permit may be cancelled by anyone at any time.<br/> <b>RETURN THIS PERMIT TO ISSUING AUTHORITY WHEN WORK IS COMPLETE, OR BY THE END OF THE SHIFT, WHICHEVER COMES FIRST.</b></p> |  |                    |  |                         |   |   |                          |                          |                          |
| Permit Initiator/Company:   |  |                    | Person Doing Work:   |                         |   | Date:                                     |                          |                          |                          |
| Specific Location/Equipment:  |  |                    | Phone/Radio/Pager #:   | Estimated # of Workers: |   | Control/MC No.:                           |                          |                          |                          |
| Work Description:   |  |                    |  |                         |   | Time Start:                               |                          |                          |                          |
|   |  |                    |  |                         |   | Time End:                                 |                          |                          |                          |
| Procedure #:  |  |                    |  |                         | Work Order #:   |   |                          |                          |                          |
| <b>UNIT WORK PERMIT ITEMS TO CONSIDER (Checked boxes must have associated review on page 2)</b>   |  |                    |  |                         |   |   |                          |                          |                          |
| <input type="checkbox"/> Non-Permit Required Confined Space Entry   |  |                    | <input type="checkbox"/> Alternate Procedure Required Confined Space Entry     |                         |   | <input type="checkbox"/> Excavation       |                          |                          |                          |
| <input type="checkbox"/> Cutting, Grinding, Welding in Non-Classified Areas   |  |                    | <input type="checkbox"/> Energized Electrical Circuits in Non-Classified Areas |                         |   | <input type="checkbox"/> Energy Isolation |                          |                          |                          |
| <input type="checkbox"/> Pressure Testing   |  |                    | <input type="checkbox"/> Radiography   |                         |   |   |                          |                          |                          |
| <b>PLEASE CHECK APPROPRIATE RESPONSE</b>  |  |                    |  |                         |   |   | Yes                      | No                       | N/A                      |
| 1. Have affected personnel been briefed on job safety and requirements and on back of permit?   |  |                    |  |                         |   |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Is this work affected by, or does this work affect, other work or processes? If Yes, describe below  |  |                    |  |                         |   |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Have fire detection, gas systems, and/or suppression systems been Isolated/By-passed? If Yes, describe below.  |  |                    |  |                         |   |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Could work cause Remote Alarms? If Yes, describe below.  |  |                    |  |                         |   |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Is equipment monitored or controlled by OCC being taken out of service? If Yes, time OCC notified:   |  |                    |  |                         |   |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. Have Shutdowns been disabled? If Yes, describe below   |  |                    |  |                         |   |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. Is Energy Isolation/Lockout necessary? If Yes, Tag or Mastercard Number:   |  |                    |  |                         |   |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. Is Gas Test Required?  |  |                    |  |                         |   |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 9. Is Continuous Gas Test required?   |  |                    |  |                         |   |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Initial Gas Test  |  | % O <sub>2</sub> : | % LEL:   | H <sub>2</sub> S ppm:   | CO ppm:   | THC ppm:                                  | Other:                   | Time:                    | Tester:                  |
| Extended/Retest Gas Test  |  | % O <sub>2</sub> : | % LEL:   | H <sub>2</sub> S ppm:   | CO ppm:   | THC ppm:                                  | Other:                   | Time:                    | Tester:                  |
| SPECIAL INSTRUCTIONS:   |  |                    |  |                         | PERMIT AUTHORIZATIONS                                       |   |                          |                          |                          |
|   |  |                    |  |                         | INITIATING SHIFT Signature (Badge # If required)            |   |                          |                          |                          |
|   |  |                    |  |                         | Area Operator: <input type="checkbox"/> Verbally            |   |                          |                          |                          |
|   |  |                    |  |                         | Person Doing the Work:                                      |   |                          |                          |                          |
|   |  |                    |  |                         | Issuing Authority:  |   |                          |                          |                          |
|   |  |                    |  |                         | EXTENDING SHIFT (See page 2, Permit Extension Requirements) |   |                          |                          |                          |
| Area Operator: <input type="checkbox"/> Verbally  |  |                    |  |                         |   |   |                          |                          |                          |
| Person Doing the Work:  |  |                    |  |                         |   |   |                          |                          |                          |
| Issuing Authority:  |  |                    |  |                         |   |   |                          |                          |                          |
| <b>PERMIT CLOSEOUT</b>  |  |                    |  |                         |   |   | Yes                      | No                       | N/A                      |
| 1. Has the work Area and/or Equipment been cleaned up?  |  |                    |  |                         |   |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Has the Area Operator been notified?   |  |                    |  |                         |   |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Post Work Comments:  |  |                    |  |                         |   |   |                          |                          |                          |
| 4. Person Doing The Work:   |  |                    |  |                         | Time:   | Date:                                     |                          |                          |                          |
| 5. Have other affected areas, e.g. OCC, been notified of status of this permit?   |  |                    |  |                         |   |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. All Isolated, By-Passed, or Shutdown systems returned to normal? If not, Have EIT or EOS logs been updated?  |  |                    |  |                         |   |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. Area Operator/Control Room/SPOC/Issuing Authority or Delegate:   |  |                    |  |                         | Time:   | Date:                                     |                          |                          |                          |

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Figure 7. Form 0161, Unit Work Permit (Page 1)



# UNIT WORK PERMIT

Any Individual may cancel this work permit at any time if they consider conditions or work methods to be unsafe. Anyone canceling a work permit must: a) Inform the person doing the work; b) Remove the site copy of the permit; and c) Return it to the Issuing Authority/SPOC, giving reasons for their actions.

|   | YES                      | N/A   | Unit Work Permit Items To Consider  | U-   |
|---|--------------------------|---|---|--|
| N.P.R.C.S.E.*   | <input type="checkbox"/> | <input type="checkbox"/>  | Has a reclassification been certified & signed?   | <input type="checkbox"/> See attached form <input type="checkbox"/> See Special Instructions |
| Cutting, Grinding, Welding in Non-Classified Areas    | <input type="checkbox"/> | <input type="checkbox"/>  | Fire Detection/Suppression systems need to be bypassed?   |  |
|   | <input type="checkbox"/> | <input type="checkbox"/>  | Fire extinguishers present and in required location?  |  |
|   | <input type="checkbox"/> | <input type="checkbox"/>  | Combustible materials removed/covered within 35'?   |  |
|   | <input type="checkbox"/> | <input type="checkbox"/>  | Sumps/drains checked and covered?   |  |
|   | <input type="checkbox"/> | <input type="checkbox"/>  | Welding screens required?   |  |
|   | <input type="checkbox"/> | <input type="checkbox"/>  | Proper eye protection?  |  |
|   | <input type="checkbox"/> | <input type="checkbox"/>  | Is a welding procedure required?  |  |
| Pressure Testing                                      | <input type="checkbox"/> | <input type="checkbox"/>  | Has a Fire Watch been assigned? (Name)  |  |
|   | <input type="checkbox"/> | <input type="checkbox"/>  | Area posted?  |  |
|   | <input type="checkbox"/> | <input type="checkbox"/>  | Testing procedure in place?   |  |
|   | <input type="checkbox"/> | <input type="checkbox"/>  | Notification of personnel in test area?   |  |
| A.P.R.C.S.E.**  | <input type="checkbox"/> | <input type="checkbox"/>  | Spill response discussed?   |  |
|   | <input type="checkbox"/> | <input type="checkbox"/>  | Is the procedure available? If Yes, Procedure #:  |  |
|   | <input type="checkbox"/> | <input type="checkbox"/>  | Have the safety requirements of procedure been reviewed and met, including Gas Test?  |  |
| Energized Electrical Circuits in Non-Classified Areas | <input type="checkbox"/> | <input type="checkbox"/>  | Visual inspection only?   |  |
|   | <input type="checkbox"/> | <input type="checkbox"/>  | Testing/Troubleshooting?  |  |
|   | <input type="checkbox"/> | <input type="checkbox"/>  | Removal/Replacement/Re-work required?   |  |
|   | <input type="checkbox"/> | <input type="checkbox"/>  | Are safe work practices in place per SA-38?   |  |
| Radiography   | <input type="checkbox"/> | <input type="checkbox"/>  | Warning signs/lights/ropes?   |  |
|   | <input type="checkbox"/> | <input type="checkbox"/>  | Safe operating limits delineated?   |  |
|   | <input type="checkbox"/> | <input type="checkbox"/>  | UV/detection/suppression systems by-passed if necessary?  |  |
|   | <input type="checkbox"/> | <input type="checkbox"/>  | Notification of personnel in test area?   |  |
| Excavation  | <input type="checkbox"/> | <input type="checkbox"/>  | Has underground electrical, piping, etc. been identified and marked?  |  |
|   | <input type="checkbox"/> | <input type="checkbox"/>  | Excavation Plan attached?   |  |
|   | <input type="checkbox"/> | <input type="checkbox"/>  | Has MC been advised of work and reviewed requirements?  |  |
|   | <input type="checkbox"/> | <input type="checkbox"/>  | Where applicable, has competent person reviewed plan and inspected excavation?  |  |
|   | <input type="checkbox"/> | <input type="checkbox"/>  | When deeper than four feet and personnel entry required, has air testing been performed?  |  |
|   | <input type="checkbox"/> | <input type="checkbox"/>  | Excavation sides treated to prevent cave-in?  |  |
| Energy Isolation                                      | <input type="checkbox"/> | <input type="checkbox"/>  | Survey on-site?   |  |
|   | <input type="checkbox"/> | <input type="checkbox"/>  | Single Source Energy Isolation? (List Tag Number on Line 7 of opening section)  |  |
|   | <input type="checkbox"/> | <input type="checkbox"/>  | Standard/Mastercard Energy Isolation? (List Tag Numbers/Mastercard Number on Line 7 of opening section)   |  |
|   | <input type="checkbox"/> | <input type="checkbox"/>  | Isolation device(s) <input type="checkbox"/> Breakers <input type="checkbox"/> Valve(s) <input type="checkbox"/> Other Listed with: <input type="checkbox"/> Special Instructions <input type="checkbox"/> Mastercard |  |
|   | <input type="checkbox"/> | <input type="checkbox"/>  | Method of Isolation listed <input type="checkbox"/> In SOP/SMP <input type="checkbox"/> Document In or with: <input type="checkbox"/> Special Instructions <input type="checkbox"/> Mastercard                        |  |
| PERMIT EXTENSION REQUIREMENTS                         | <input type="checkbox"/> | <input type="checkbox"/>  | Verified by Method <input type="checkbox"/> VOM <input type="checkbox"/> Gauge <input type="checkbox"/> Other Listed with: <input type="checkbox"/> Special Instructions <input type="checkbox"/> Mastercard          |  |
|   | <input type="checkbox"/> | <input type="checkbox"/>  | Contingency Plan ID'd <input type="checkbox"/> In SOP/SMP <input type="checkbox"/> Document In or with: <input type="checkbox"/> Special Instructions <input type="checkbox"/> Mastercard                             |  |
|   |                          | 1. Extension will only be issued to the original <i>Person Doing Work</i> .                   | 2. No change in work scope.   |  |
|   |                          | 3. Extension to be signed by incoming <i>Issuing Authority</i> and <i>Person Doing Work</i> . | 4. New Gas Test will be performed.  |  |
| Designated Worker                                     | Signature                |   | Time  | Date   |
| <input type="checkbox"/>                              |                          |   |   |  |

\*Non-Permit Required Confined Space Entry      \*\*Alternate Procedure Permit Required Confined Space Entry

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Figure 7. Form 0161, Unit Work Permit (Page 2)



# HOT WORK PERMIT

|  |  |                    |  |                                   |  |   |                          |                          |                                   |  |
|--|--|--------------------|--|-----------------------------------|--|---|--------------------------|--------------------------|-----------------------------------|--|
| <b>H-</b>  |  |                    |  |                                   |  |   |                          |                          |                                   |  |
| For work that uses or generates an ignition source or work on energized electrical circuits in Classified Areas. This permit is automatically suspended in the event of a spill of hydrocarbons in the vicinity, or the sounding of the Emergency Alarm until <i>All Clear</i> is announced. This permit may be cancelled by anyone.<br><b>RETURN THIS PERMIT TO ISSUING AUTHORITY WHEN WORK IS COMPLETE, OR BY THE END OF THE SHIFT, WHICHEVER COMES FIRST.</b> |  |                    |  |                                   |  |   |                          |                          |                                   |  |
| Permit Initiator/Company:  |  |                    | Person Doing Work:   |                                   |  | Date:                                     |                          |                          |                                   |  |
| Specific Location/Equipment:   |  |                    | Phone/Radio/Pager #:   | Estimated # of Workers:           |  | Control/MC No.:                           |                          |                          |                                   |  |
| Work Description:  |  |                    |  |                                   |  | Time Start:                               |                          |                          |                                   |  |
|  |  |                    |  |                                   |  | Time End:                                 |                          |                          |                                   |  |
| Procedure #:   |  |                    |  |                                   | Work Order #:  |   |                          |                          |                                   |  |
| <b>HOT WORK PERMIT ITEMS TO CONSIDER (Checked boxes must have associated review on page 2)</b>   |  |                    |  |                                   |  |   |                          |                          |                                   |  |
| <input type="checkbox"/> Cutting, Grinding, Welding in Classified Areas  |  |                    | <input type="checkbox"/> Energized Electrical Circuits in Classified Areas |                                   |  | <input type="checkbox"/> Hot Tap          |                          |                          |                                   |  |
| <input type="checkbox"/> Non-Intrinsically Safe Equipment in Classified Areas  |  |                    | <input type="checkbox"/> Heaters and Other Equipment                       |                                   |  | <input type="checkbox"/> Energy Isolation |                          |                          |                                   |  |
| <b>PLEASE CHECK APPROPRIATE RESPONSE</b>   |  |                    |  |                                   |  |   | <b>Yes</b>               | <b>No</b>                | <b>N/A</b>                        |  |
| 1. Have affected personnel been briefed on job safety and requirements and on back of permit?  |  |                    |  |                                   |  |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>          |  |
| 2. Is this work affected by, or does this work affect, other work or processes? If Yes, describe below   |  |                    |  |                                   |  |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>          |  |
| 3. Have fire detection, gas systems, and/or suppression systems been Isolated/By-passed? If Yes, describe below.   |  |                    |  |                                   |  |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>          |  |
| 4. Could work cause Remote Alarms? If Yes, describe below.   |  |                    |  |                                   |  |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>          |  |
| 5. Is equipment monitored or controlled by OCC being taken out of service? If Yes, time OCC notified:  |  |                    |  |                                   |  |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>          |  |
| 6. Have Shutdowns been disabled? If Yes, describe below  |  |                    |  |                                   |  |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>          |  |
| 7. Is Energy Isolation/Lockout necessary? If Yes, Tag or Mastercard Number:  |  |                    |  |                                   |  |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>          |  |
| 8. Has designated fire watch been assigned, with appropriate equipment? List name(s):  |  |                    |  |                                   |  |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>          |  |
| 9. Is Gas Test Required?   |  |                    |  |                                   |  |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>          |  |
| 10. Is Continuous Gas Test required?   |  |                    |  |                                   |  |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>          |  |
| Initial Gas Test   |  | % O <sub>2</sub> : | % LEL:   | H <sub>2</sub> S ppm:             | CO ppm:  | THC ppm:                                  | Other:                   | Time:                    | Tester:                           |  |
| Extended/Retest Gas Test   |  | % O <sub>2</sub> : | % LEL:   | H <sub>2</sub> S ppm:             | CO ppm:  | THC ppm:                                  | Other:                   | Time:                    | Tester:                           |  |
| <b>SPECIAL INSTRUCTIONS:</b>   |  |                    |  |                                   | <b>PERMIT AUTHORIZATIONS</b>                                       |   |                          |                          |                                   |  |
|  |  |                    |  |                                   | <b>INITIATING SHIFT Signature (Badge # if required)</b>            |   |                          |                          |                                   |  |
|  |  |                    |  |                                   | Area Operator:   |   |                          |                          | <input type="checkbox"/> Verbally |  |
|  |  |                    |  |                                   | Person Doing the Work:   |   |                          |                          |                                   |  |
|  |  |                    |  |                                   | Issuing Authority:   |   |                          |                          |                                   |  |
|  |  |                    |  |                                   | <b>EXTENDING SHIFT (See page 2, Permit Extension Requirements)</b> |   |                          |                          |                                   |  |
| Area Operator:   |  |                    |  | <input type="checkbox"/> Verbally |  |   |                          |                          |                                   |  |
| Person Doing the Work:   |  |                    |  |                                   |  |   |                          |                          |                                   |  |
| Issuing Authority:   |  |                    |  |                                   |  |   |                          |                          |                                   |  |
| <b>PERMIT CLOSEOUT</b>   |  |                    |  |                                   |  |   | <b>Yes</b>               | <b>No</b>                | <b>N/A</b>                        |  |
| 1. Has the work Area and/or Equipment been cleaned up?   |  |                    |  |                                   |  |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>          |  |
| 2. Has the Area Operator been notified?  |  |                    |  |                                   |  |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>          |  |
| 3. Post Work Comments:   |  |                    |  |                                   |  |   |                          |                          |                                   |  |
| 4. Person Doing The Work:  |  |                    |  |                                   |  | Time:                                     | Date:                    |                          |                                   |  |
| 5. Have other affected areas, e.g. OCC, been notified of status of this permit?  |  |                    |  |                                   |  |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>          |  |
| 6. All Isolated, By-Passed, or Shutdown systems returned to normal? If not, Have EIT or EOS logs been updated?   |  |                    |  |                                   |  |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>          |  |
| 7. Area Operator/Control Room/SPOC/Issuing Authority or Delegate:  |  |                    |  |                                   |  | Time:                                     | Date:                    |                          |                                   |  |

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Figure 8. Form 0162, Hot Work Permit (Page 1)



# HOT WORK PERMIT

Any individual may cancel this work permit at any time if they consider conditions or work methods to be unsafe. Anyone Canceling a work permit must: a) Inform the person doing the work; b) Remove the site copy of the permit; and c) Return it to the Issuing Authority/SPOC, giving reasons for their actions.

|   | YES   | N/A                      | Hot Work Permit Items To Consider   | H-   |
|---|---|--------------------------|---|------|
| Cutting, Grinding, Welding in Classified Areas        | <input type="checkbox"/>  | <input type="checkbox"/> | Fire extinguishers present and in required location?  |      |
|   | <input type="checkbox"/>  | <input type="checkbox"/> | Reviewed SA-38, Requirement 1.19, Welding and Flame Cutting, especially 1.19.6.4, Fire Prevention and Protection?   |      |
|   | <input type="checkbox"/>  | <input type="checkbox"/> | Sumps/drains checked and covered within 35'?  |      |
|   | <input type="checkbox"/>  | <input type="checkbox"/> | Welding screens required?   |      |
|   | <input type="checkbox"/>  | <input type="checkbox"/> | Proper eye protection?  |      |
| Non-Intrinsically Safe Equipment in Classified Areas* | <input type="checkbox"/>  | <input type="checkbox"/> | Power tools, cameras, test equipment, vehicles?   |      |
|   | <input type="checkbox"/>  | <input type="checkbox"/> | Fire Detection/Suppression systems need to be bypassed?   |      |
| Energized Electrical Circuits in Classified Areas     | <input type="checkbox"/>  | <input type="checkbox"/> | Fire Detection/Suppression systems need to be bypassed?   |      |
|   | <input type="checkbox"/>  | <input type="checkbox"/> | Visual inspection only?   |      |
|   | <input type="checkbox"/>  | <input type="checkbox"/> | Testing/Troubleshooting?  |      |
|   | <input type="checkbox"/>  | <input type="checkbox"/> | Removal/Replacement/Re-work required?   |      |
| Heaters and Other Equipment                           | <input type="checkbox"/>  | <input type="checkbox"/> | Are safe work practices in place per SA-38?   |      |
|   | <input type="checkbox"/>  | <input type="checkbox"/> | Are heaters and equipment monitoring requirements specified?  |      |
|   | <input type="checkbox"/>  | <input type="checkbox"/> | Fire extinguishers present and in required locations?   |      |
| Hot Tap   | <input type="checkbox"/>  | <input type="checkbox"/> | Have Bonding and Grounding requirements been met?   |      |
|   | <input type="checkbox"/>  | <input type="checkbox"/> | Proper clearance from equipment (cable trays, piping, fuel tanks, etc.)?  |      |
|   | <input type="checkbox"/>  | <input type="checkbox"/> | Is Hot Tap procedure in place?  |      |
|   | <input type="checkbox"/>  | <input type="checkbox"/> | Flow level requirements met?  |      |
|   | <input type="checkbox"/>  | <input type="checkbox"/> | Pressure requirements met?  |      |
| Energy Isolation                                      | <input type="checkbox"/>  | <input type="checkbox"/> | Is line clearly surveyed/marked for hot tapping?  |      |
|   | <input type="checkbox"/>  | <input type="checkbox"/> | Reviewed <i>Cutting, Grinding, Welding In Classified Areas</i> checklist?   |      |
|   | <input type="checkbox"/>  | <input type="checkbox"/> | Single Source Energy Isolation? (List Tag Number on Line 7 of opening section)  |      |
|   | <input type="checkbox"/>  | <input type="checkbox"/> | Standard/Mastercard Energy Isolation? (List Tag Numbers/Mastercard Number on Line 7 of opening section)   |      |
|   | <input type="checkbox"/>  | <input type="checkbox"/> | Isolation device(s) <input type="checkbox"/> Breakers <input type="checkbox"/> Valve(s) <input type="checkbox"/> Other Listed with: <input type="checkbox"/> Special Instructions <input type="checkbox"/> Mastercard |      |
|   | <input type="checkbox"/>  | <input type="checkbox"/> | Method of isolation listed <input type="checkbox"/> In SOP/SMP <input type="checkbox"/> Document In or with: <input type="checkbox"/> Special Instructions <input type="checkbox"/> Mastercard                        |      |
| PERMIT EXTENSION REQUIREMENTS                         | <input type="checkbox"/>  | <input type="checkbox"/> | Verified by Method: <input type="checkbox"/> VOM <input type="checkbox"/> Gauge <input type="checkbox"/> Other Listed with: <input type="checkbox"/> Special Instructions <input type="checkbox"/> Mastercard         |      |
|   | <input type="checkbox"/>  | <input type="checkbox"/> | Contingency Plan ID'd <input type="checkbox"/> In SOP/SMP <input type="checkbox"/> Document In or with: <input type="checkbox"/> Special Instructions <input type="checkbox"/> Mastercard                             |      |
|   | 1. Extension will only be issued to the original <i>Person Doing Work</i> .                   |                          | 2. No change in work scope.   |      |
|   | 3. Extension to be signed by incoming <i>Issuing Authority</i> and <i>Person Doing Work</i> . |                          | 4. New Gas Test will be performed.  |      |
| Designated Worker                                     | Signature   |                          | Time  | Date |
| <input type="checkbox"/>                              |   |                          |   |      |

**Close Out Permit With Issuing Authority When Work is Complete!**

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**Figure 8. Form 0162, Hot Work Permit (Page 2)**



# PIPELINE WORK PERMIT

| PS-  |  |                    |  |                       |   |   |                          |                          |                          |
|--|--|--------------------|--|-----------------------|---|---|--------------------------|--------------------------|--------------------------|
| Due to Security concerns, access roads and gates shall be closed and locked. Report any suspicious activity to Security and local Maintenance Coordinator. This permit may be cancelled by anyone at any time.                                 |  |                    |  |                       |   |   |                          |                          |                          |
| <b>RETURN THIS PERMIT TO ISSUING AUTHORITY WHEN WORK IS COMPLETE, OR BY THE PERMIT COMPLETION DATE.</b>  |  |                    |  |                       |   |   |                          |                          |                          |
| Permit Initiator/Company:  |  |                    |  | Person Doing Work:    |   |   | Date:                    |                          |                          |
| Specific Location:   |  |                    |  |                       | Phone/Radio/Pager #:  |   | Estimated # of Workers:  |                          |                          |
| Effective From Time:   |  | Date:              |  | Effective to Time:    |   | Date:   |                          | Extended to Time: Date:  |                          |
| Work Description:  |  |                    |  |                       |   |   |                          |                          |                          |
| Procedure #:   |  |                    |  | Work Order #:         |   |   |                          |                          |                          |
| <b>PIPELINE WORK PERMIT ITEMS TO CONSIDER (Checked boxes must have associated review on page 2)</b>  |  |                    |  |                       |   |   |                          |                          |                          |
| <input type="checkbox"/> Confined Space Entry  |  |                    | <input type="checkbox"/> Utility Locate Required |                       |   | <input type="checkbox"/> Radiography and/or Pressure Testing                  |                          |                          |                          |
| <input type="checkbox"/> Cutting, Grinding, Welding in Non-Classified Areas  |  |                    | <input type="checkbox"/> Required Agency Permits |                       |   | <input type="checkbox"/> MC/Alyeska Representative Required On Site           |                          |                          |                          |
| <input type="checkbox"/> Mining and/or Mineral Materials Required  |  |                    | <input type="checkbox"/> Excavation              |                       |   | <input type="checkbox"/> Notification to OCC, U/S, D/S Pump Stations Required |                          |                          |                          |
| <b>PLEASE CHECK APPROPRIATE RESPONSE</b>   |  |                    |  |                       |   |   | Yes                      | No                       | N/A                      |
| 1. Have affected personnel been briefed on job safety and requirements and on back of permit?  |  |                    |  |                       |   |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Is this work affected by, or does this work affect, other work or processes? If Yes, describe below   |  |                    |  |                       |   |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Is Energy Isolation/Lockout necessary? If Yes, Tag or Mastercard Number:  |  |                    |  |                       |   |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Has Person Doing Work been informed of the need to avoid damage to all survey monuments/markers? Immediately report any damage (pre-existing or otherwise) to the local MC.   |  |                    |  |                       |   |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Are Other Work Permits required? If Yes, list:  |  |                    |  |                       |   |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. Have Environmental Hazards been identified and mitigated (e.g., Avalanches, Mudslides, Slope Instability, Cut Bank)?  |  |                    |  |                       |   |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. Does the work require brush cutting? If Yes, refer to SA-38, Brush Cutting, and MR-48, Workpad and Access Roads.  |  |                    |  |                       |   |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. Will the work require excavation dewatering? If Yes, refer to ED-108, Excavation Dewatering (complete Form 3556).   |  |                    |  |                       |   |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 9. Will the work be over or near water? If Yes, refer to SA-38, Personal Flotation Devices, for requirements.  |  |                    |  |                       |   |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 10. Will the work require the use of an All Terrain Vehicle (ATV)? If Yes, refer to SA-38, All Terrain Vehicles, for requirements.   |  |                    |  |                       |   |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 11. Will the work require secondary containment dewatering (i.e., Mainline Vaults, Fuel Gas Line Manhole)? If Yes, refer to EN-43-004, Wastewater Discharges (complete Form 3729; Secondary Containment Water Discharge Report).               |  |                    |  |                       |   |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 12. Will in-stream/bank work be required at a Pipeline, Access, or Workpad Bridge? If Yes, contact Environment or Lands Depts for permits. Contact Systems Integrity if the posted weight limit on Access or Workpad Bridge could be exceeded. |  |                    |  |                       |   |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 13. Is Gas Test Required?  |  |                    |  |                       |   |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 14. Is Continuous Gas Test required?   |  |                    |  |                       |   |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Initial Gas Test   |  | % O <sub>2</sub> : | % LEL:   | H <sub>2</sub> S ppm: | CO ppm:   | THC ppm:  | Other:                   | Time:                    | Tester:                  |
| Extended/Retest Gas Test   |  | % O <sub>2</sub> : | % LEL:   | H <sub>2</sub> S ppm: | CO ppm:   | THC ppm:  | Other:                   | Time:                    | Tester:                  |
| SPECIAL INSTRUCTIONS:  |  |                    |  |                       | <b>PERMIT AUTHORIZATIONS</b>                                |   |                          |                          |                          |
|  |  |                    |  |                       | INITIATING SHIFT Signature (Badge # if required)            |   |                          |                          |                          |
|  |  |                    |  |                       | Person Doing the Work: <input type="checkbox"/> Verbally    |   |                          |                          |                          |
|  |  |                    |  |                       | Issuing Authority:  |   |                          |                          |                          |
|  |  |                    |  |                       | EXTENDING SHIFT (See page 2, Permit Extension Requirements) |   |                          |                          |                          |
|  |  |                    |  |                       | Person Doing the Work: <input type="checkbox"/> Verbally    |   |                          |                          |                          |
|  |  |                    |  |                       | Issuing Authority:  |   |                          |                          |                          |
|  |  |                    |  |                       |   |   |                          |                          |                          |
| <b>PERMIT CLOSEOUT</b>   |  |                    |  |                       |   |   | Yes                      | No                       | N/A                      |
| 1. Has the work Area and/or Equipment been cleaned up?   |  |                    |  |                       |   |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Isolated/By-passed Shutdown systems returned to normal?   |  |                    |  |                       |   |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Have other affected areas, e.g., OCC, been notified of status of this permit?   |  |                    |  |                       |   |   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Post Work Comments:   |  |                    |  |                       |   |   |                          |                          |                          |
| 5. Person Doing The Work:  |  |                    |  |                       |   |   | Time:                    | Date:                    |                          |
| 6. Issuing Authority:  |  |                    |  |                       |   |   | Time:                    | Date:                    |                          |

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Figure 9. Form 3459, Pipeline Work Permit (Page 1)



# PIPELINE WORK PERMIT

Any individual may cancel this work permit at any time if they consider conditions or work methods to be unsafe. Anyone Canceling a work permit must: a) Inform the person doing the work; b) Remove the site copy of the permit; and c) Return it to the Issuing Authority/SPOC, giving reasons for their actions.

|   | YES  | N/A  | Pipeline Work Permit Items To Consider   | PS-                         |                          |   |
|---|--|--|--|-----------------------------|--------------------------|---|
| Confined Space Entry  | <input type="checkbox"/>   | <input type="checkbox"/>                                 | Has a reclassification been certified & signed for Non-Permit Required Confined Space? (see attached form)   |                             |                          |   |
|   | <input type="checkbox"/>   | <input type="checkbox"/>                                 | Does work require Permit-Required Confined Space (PRCS) or PRCS Using Alternate Entry Procedures? If Yes, obtain Confined Space Entry Permit.  |                             |                          |   |
|   | <input type="checkbox"/>   | <input type="checkbox"/>                                 | Have the affected employees been trained in compliance with 29 CFR 1910.146?   |                             |                          |   |
| Cutting, Grinding, Welding in Non-Classified Areas  | <input type="checkbox"/>   | <input type="checkbox"/>                                 | Fire extinguishers present and in required location?   |                             |                          |   |
|   | <input type="checkbox"/>   | <input type="checkbox"/>                                 | Combustible materials removed/covered within 35'?  |                             |                          |   |
|   | <input type="checkbox"/>   | <input type="checkbox"/>                                 | Proper eye protection and other Personal Protective Equipment addressed?   |                             |                          |   |
|   | <input type="checkbox"/>   | <input type="checkbox"/>                                 | Is a welding procedure required?   |                             |                          |   |
| Mining and/or Mineral Materials Required  | <input type="checkbox"/>   | <input type="checkbox"/>                                 | Has a Fire Watch been assigned? (Name)   |                             |                          |   |
|   | <input type="checkbox"/>   | <input type="checkbox"/>                                 | Will mined materials be hauled from an Operations Material Site? If Yes, complete Form 10164, Daily Mineral Material Hauling Voucher.  |                             |                          |   |
| Utility Locate Required (refer to MR-48, Pre-Excavation Activities, or FG-78, Excavation Safety)  | <input type="checkbox"/>   | <input type="checkbox"/>                                 | Will blasting be required? If Yes, refer to Master Specification C-415, Blasting Restrictions Near the Trans-Alaska Pipeline System.   |                             |                          |   |
|   | <input type="checkbox"/>   | <input type="checkbox"/>                                 | Is work performed in the vicinity of the fiber optics cable (FOC)? If Yes, contact GCI, 1-888-560-2022 for locate.   |                             |                          |   |
|   | <input type="checkbox"/>   | <input type="checkbox"/>                                 | Is work performed in the vicinity of cathodic protection systems? If Yes, contact Systems Integrity and complete Form 2353, Rectifier Service Record, to document any maintenance, repairs, or other service interruptions.<br>NOTE: If excavation is in the direct influence of Enhanced Cathodic Protection, care should be taken to ensure that the rectifier(s) are shut off and tagged out until such time as the excavation is closed.   |                             |                          |   |
| Required Agency Permits   | <input type="checkbox"/>   | <input type="checkbox"/>                                 | Is third party Utility Locate required?  |                             |                          |   |
|   | <input type="checkbox"/>   | <input type="checkbox"/>                                 | Is a copy of the agency permit posted at job site as required by issuing agency?   |                             |                          |   |
| Excavation (refer to SA-38, Excavation Safety, or FG-78, Excavation Safety)   | <input type="checkbox"/>   | <input type="checkbox"/>                                 | Has 3-day notification been made to ADF&G for maintenance work on low water crossings/culverts in fish streams?  |                             |                          |   |
|   | <input type="checkbox"/>   | <input type="checkbox"/>                                 | Is the excavation over 4 feet in depth? If Yes, attach Form 2268, Excavation Plan, completed by a Competent Person.  |                             |                          |   |
|   | <input type="checkbox"/>   | <input type="checkbox"/>                                 | Where applicable, has competent person reviewed plan and inspected excavation?   |                             |                          |   |
|   | <input type="checkbox"/>   | <input type="checkbox"/>                                 | When deeper than four feet and personnel entry required, has air testing been performed?   |                             |                          |   |
|   | <input type="checkbox"/>   | <input type="checkbox"/>                                 | Is a survey required?  |                             |                          |   |
|   | <input type="checkbox"/>   | <input type="checkbox"/>                                 | Surveyors required on-site?  |                             |                          |   |
| Radiography   | <input type="checkbox"/>   | <input type="checkbox"/>                                 | Have underground utilities been identified and marked?   |                             |                          |   |
|   | <input type="checkbox"/>   | <input type="checkbox"/>                                 | Dewatering; if NOD required, has ADEC pre-notification been identified and marked?   |                             |                          |   |
|   | <input type="checkbox"/>   | <input type="checkbox"/>                                 | Warning signs/lights/ropes?  | Pressure Testing<br>YES N/A |                          |   |
|   | <input type="checkbox"/>   | <input type="checkbox"/>                                 | Safe operating limits delineated?  |                             | <input type="checkbox"/> | <input type="checkbox"/>                |
| <input type="checkbox"/>  | <input type="checkbox"/>   | UV/detection/suppression systems by-passed if necessary? | <input type="checkbox"/>   |                             | <input type="checkbox"/> | Is the Testing Procedure in place?      |
| <input type="checkbox"/>  | <input type="checkbox"/>   | Notification of personnel in test area?                  | <input type="checkbox"/>   |                             | <input type="checkbox"/> | Notification of personnel in test area? |
| MC/Alyeska Representative Required On Site  | <input type="checkbox"/>   | <input type="checkbox"/>                                 | Has Spill Response been addressed?   |                             |                          |   |
|   | <input type="checkbox"/>   | <input type="checkbox"/>                                 | Is a Mainline Valve movement required? If Yes, Maintenance Coordinator or designee required on site.   |                             |                          |   |
|   | <input type="checkbox"/>   | <input type="checkbox"/>                                 | Is On-Site Construction Management required per MR-48? If Yes, Maintenance Coordinator or designee, Project, or Baseline Superintendent is required on site.   |                             |                          |   |
| Notification to OCC, U/S, D/S Pump Stations Required  | <input type="checkbox"/>   | <input type="checkbox"/>                                 | Are tapping or stopple plugging/retracting operations being performed? If Yes, Alyeska Rep is required on site.  |                             |                          |   |
|   | <input type="checkbox"/>   | <input type="checkbox"/>                                 | Does the work require Priority 1 Work or Mainline Valve movement? If Yes, notify OCC, Upstream and Downstream pump stations prior to and after completion of work.   |                             |                          |   |
| PERMIT EXTENSION REQUIREMENTS   | 1. Extension will only be issued to the original Person Doing Work.            |  | 2. No change in work scope.  |                             |                          |   |
|   | 3. Extension to be signed by incoming Issuing Authority and Person Doing Work. |  | 4. New Gas Test will be performed.   |                             |                          |   |
| <b>RULES</b><br>Rules are designed to protect personnel, the environment, the pipeline and equipment.<br>Maintain 15' travel distance from VSMs when snow conceals the driveline. If a vehicle or equipment leaves the workpad, notify the MC if recovery action is over undisturbed ground.<br>Do not back up toward the above or below ground pipe.<br>If 18" of clearance cannot be maintained when working around the above ground pipe or support assemblies, use of a spotter is required.<br>Never drive onto or over B/G animal crossings without Engineering approval.<br>Notify the MC of any accidents, incidents, or spills as soon as possible.<br>Driving around gates or headache bars is prohibited except for off-road reconnaissance vehicles with a Winter Only Off-ROW Access Permit. |  |  | <b>GUIDELINES</b><br>Guidelines are aids in the safe and productive use of the workpad.<br>Workpad travel speed should not exceed 25 MPH; conditions may require further speed reduction (i.e. LWCs, bridges, and aufoils).<br>Check ice thickness if water depth is unknown at low water crossings.<br>Travel across Transverse levees (water bars) in the driveline; otherwise damage may result from high-centering vehicle or equipment.<br>Winter reconnaissance vehicles may drive around workpad blockpoints while the Winter Only Off-ROW Access Permit (maximum ¼ mile from pipeline) is in effect. Caution should be taken if crossing heavily armored blockpoints.<br>Driveline or track damage may occur when Tuckers are moved after breaking through ice and the tracks become hooked under the ice shelf. |                             |                          |   |
| <b>Close Out Permit With Issuing Authority When Work Is Complete!</b>   |  |  |  |                             |                          |   |

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Figure 9. Form 3459, Pipeline Work Permit (Page 2)

## 2.1 Portable Industrial Heaters

### 2.1.1 Purpose

This requirement has been established to provide instructions and information for the safe operation of portable industrial heaters.

### 2.1.2 References

- 29 CFR 1926.151, "Fire Prevention"

### 2.1.3 Responsibilities

Managers and supervisors of activities utilizing portable industrial heaters are responsible for compliance with this requirement.

### 2.1.4 Requirements

1. Only kerosene, #1 fuel oil, LPG/catalytic heaters, or gasoline-fueled fresh air heaters will be allowed for use in Alyeska facilities.
2. A *Hot Work Permit, Form 0162* is required for operation of all portable heater applications within 50 feet of an NEC Class I area or other areas as identified by facility supervision. Refer to Section 1.15.8, "Records," for retention information.
3. Heaters will not be operated within 50 feet of NEC Class I areas unless their operations are monitored. Heaters must be checked at least every 1/2-hour of operation by the fire watch. Heaters operated outside the 50 foot radius described above shall be operated with *Form 0161, Unit Work Permit*, and no special visual inspection or monitoring is required unless specified in the special instructions of the work permit or work plan.
4. Heaters in operation will be kept level, stable, and set on noncombustible material. Wheeled heaters must have tires chocked.
5. Heaters will not be allowed to operate in or under buildings. Heat will be directed to desired location in or under a building by a fire-resistive duct.
6. Heated areas will be adequately ventilated and tested to prevent carbon monoxide or oxygen deficiency buildup. Indirect fired heaters should be used to heat space which may be occupied by personnel.
7. Heaters will not be operated in the presence of volatile fumes.
8. No combustible material (wood, paper, Visqueen, etc.) will be allowed within 10 feet of any heater. No similar materials will be allowed within 10 feet of the heater outlet. Tarps, canvas, Visqueen, or similar coverings will be secured to prevent the wind from blowing them against the heater, heater outlet, or inlet.
9. A 20-lb. dry chemical extinguisher will be located not more than 50 feet nor closer than 10 feet from the operating heater. Fire extinguishers are to be provided on a ratio of one to every two operating heaters.
10. Heaters will be shut down and allowed to cool before refueling.

**NOTE**

600K Btu and higher heaters may be left running while refueling.

11. Heater refueling will be done with a properly marked, approved, safety can and fuel storage areas will be kept at least 15 feet from heater location.

**NOTE**

600K Btu and higher heaters will be fueled by a spreader truck.

12. Heater air inlet and discharge areas will be kept away from obstructions that would hinder the free flow of air into and out of the heater.
13. Fire resistive ducts should be of the flexible mat type. However, where metal ducting is used, care must be taken to maintain an 18-inch clearance when penetrating a combustible wall.
14. Oil-fired heaters shall be equipped with a safety control to stop fuel flow in case of flame failure.
15. Fire ducts and insulation material must not contain asbestos in any form.
16. Portable industrial heaters must be kept 15 feet from any combustible structure (e.g., trailer, building, shack, etc.).
17. Portable industrial heaters must be kept 25 feet from any oil, gas, or electric process facilities.

### 2.1.5 Definitions

N/A

### 2.1.6 Training

Fire watch must be trained as a fire watch and have fire extinguisher training.

### 2.1.7 Records

For record retention requirements, see the *Records Retention Schedule* located under Resources\Records\Records Retention Schedule on the A-Net.



Subject: Pump Station Tank Farm Access Control

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|   |  |
|---|--|
| Applicable To: Pipeline Operations        | Technical Assistance: Holly Schoenborn |
| Approval: John Baldrige, Pipeline Manager |  |

1.0 Purpose and Scope

The purpose of this procedure is to outline the controls required for accessing and conducting work in the Pump Station tank farms in consideration of the potential for the presence of explosive vapors.

2.0 References

SA-38, Corporate Safety Manual, Requirement 1.15, "Work Permit System."

3.0 Affects

This procedure applies to Pump Stations 1, 3, 4, 5, 7, & 9. All the cold standby stations, PS 2, 6, 8, 10, & 12 Crude, and Turbine tanks are drained and relief systems are out of service and have no potential explosive vapors present in their tank farms. However, if cold restart is installed at PS 12, the Tank Farm would become active and this DOP would then apply to PS 12.

4.0 Responsible and Accountable Resources

- Pipeline Manager
- Area O&M Manager
- O&M Supervisor
- Pump Station Control Room Operator
- Technician
- Baseline Personnel
- Contractor Personnel

5.0 Records

None.

6.0 Procedure

Tank Farm Access Control: The Pump Station Control Room Operator (CRO) is the control point for access to the pump station tank farm. All personnel must obtain authorization from the CRO prior to access of the tank farm.

Tank farm access points will be posted identifying the requirement for a work permit and a gas test prior to the operation of equipment that might generate a source of ignition.



# Pipeline Department Operating Procedure

Subject: Pump Station Tank Farm Access Control

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Following Strategic Reconfiguration transition, when Pump Station Control Rooms are no longer staffed, OCC will become the control point for access to pump station tank farms.

### Normal Entry

1. Non-work permit related entry requires authorization from the CRO.
2. If work is to be performed within any tank farm dike area, an appropriate work permit will be obtained from the CRO.
3. If entry to, or work in the tank farm dike includes the use of equipment that may generate a source of ignition (vehicles, generators, welding, cutting, drilling, etc.), hot work permit requirements must be met in accordance with SA-38.

To the extent possible, vehicle mobile equipment entry into the tank farms will be minimized and shall be approved in advance by facility supervision. Vehicles and equipment should not be operated within fifty (50) feet of the tank without special precautions.

4. Unless approved in advance by the Area Manager or Pipeline Manager, the relief system at Pump Stations 3, 4, 5, 7 and 9 will be isolated whenever there is hot work involving open flame or extended use (more than two hours) of other spark producing equipment. Isolation of the relief system must be coordinated and scheduled with OCC.
5. Equipment and vehicles authorized in the tank farm will be attended at all times while in operation. Idling vehicles will not be left unattended.
6. Standing equipment should be placed outside the classified area whenever possible. Tioga type heaters will not be placed in the classified area.
7. Personnel entering the tank farm must be in radio communications with the CRO.

NOTE: All work permits issued for work within the tank farm which involves the operation of standing equipment must be reviewed and approved by the accountable Area O&M Manager or the Pipeline Manager prior to issuance. Standing equipment includes heaters, light plants, air compressors, welding machines, etc.

### Evacuation During a Relief Event

1. If a relief event occurs that causes venting to the tank farm area while personnel are present, the tank farm will be evacuated immediately.
2. The CRO will announce an evacuation on UHF radios and request an immediate evacuation.
3. Personnel will turn off all ignition sources and motorized equipment and leave the tank farm on foot to the designated pump station rally point.

### Re-Entry After Evacuation

After the relief event has concluded, a gas test will be performed prior to an issuance of an all clear from the CRO or OCC, and resumption of work activities.

## End of Procedure

### Revision History

|   |
|---|
| <b>Revision History</b>                             |
| <b>Approved by:</b> John Baldrige, Pipeline Manager |



# Pipeline Department Operating Procedure

Subject: Pump Station Tank Farm Access Control

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| Revision | Date       | Revision Summary   |
|----------|------------|--|
| 10       | 01/11/2008 | Added individual stations that DOP applies under Section 3 "Affects"                         |
| 9        | 12/19/07   | Added specifics to step 3 of Section 6.0.  |
| 8        | 12/17/07   | Added specifics to step 3 of Section 6.0.  |
| 7        | 05/02/07   | Added specifics on isolating the relief system during hot work or during extended use.       |
| 6        | 04/13/07   | Added specifics on use of vehicles and standing equipment in a classified area.              |
| 5        | 04/03/07   | Added "Area O&M Manager" as accountable manager.   |
| 4        | 02/12/07   | Revised Section 6.0 to ensure hot work permit requirements are met in accordance with SA-38. |
| 3        | 01/30/07   | Removed redundant text box regarding tank farm access in windy or slippery conditions.       |
| 2        | 01/29/07   | Added more entry and evacuation procedure steps to Section 6.0                               |
| 1        | 08/15/06   | Revised text "Evacuation During a Relief Event"  |
| 0        | 08/15/06   | Initial issue of this procedure.   |



## Operating Procedure Ballast Water Treatment

Title: Restriction of BWT Tank Farm Access

Number: BWT-1.20

Page: 1 of 3

Revision: 8

Effective Date: 12/31/07

Approved by:

**Lloyd Street, BWT Supervisor for Joe Kuchin, BWT Manager**

Applicable to:

**Ballast Water Treatment Facility**

### Purpose

The purpose of this procedure is to outline the administrative controls required for accessing and conducting work in the BWT Area Tank Farm for Tanks 92, 93, 94, 80 and 81 in consideration of the potential for the presence of explosive vapors.

### Accountable Resources

- BWT Manager
- BWT Supervisor
- BWT Operators
- Fire, Safety Industrial Hygiene (FSIH)

### SPECIAL INSTRUCTIONS

Through the construction of the 90s Tank Farm into the Vapor Recovery System the following Special Instructions apply to all work done at the 90s tank farm ground level:

#### NO FANS RUNNING ON THE TANKS

- With NO hatches or purge nozzles open, work will be allowed if the tank rise is less than .2 feet per hour
- With ALL hatches and purge nozzles open, work will be allowed on the tank farm floor if the tank rise is less than .5 feet per hour.

#### ONE OR MORE FANS RUNNING ON THE TANKS

- Work will be allowed on the tank farm floor if the tank rise is below 3 feet per hour.

This procedure does not have to be physically present at the work site, initialed, or signed.

### PROCEDURE

#### Tank Farm Access Control:

The BWT Control Room Operator (CRO) is the control point for access to the BWT tank farm areas. All personnel accessing either the 80s or 90s tank farm must obtain authorization to enter from the CRO.

- \_\_\_ 1. LEL: Must be less than 5% for entry and conduct of work.



## Operating Procedure Ballast Water Treatment

Title: Restriction of BWT Tank Farm Access

Number: BWT-1.20

Page: 2 of 3

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Effective Date: 12/31/07

- \_\_\_ 2. Actions if LEL exceeds 5%:
  - \_\_\_ a. Stop all work and operating machinery in the work area.
  - \_\_\_ b. Evacuate the area.
  - \_\_\_ c. Notify the CRO.

### 90s and 80s Tank Dike Areas Restrictions:

- \_\_\_ 1. No work allowed in 90s tank dike area while deballasting or gravitating more than 3 feet per hour.
- \_\_\_ 2. Initial entry into BWT tank farm within one hour after a venting event, prior to driving in or work in tank farm, must be on foot to ensure area is clear of hydrocarbons.
- \_\_\_ 3. When working in 80s tank dike area, all influents (skimmer, DAF, BTT) must be stopped and isolated.
- \_\_\_ 4. Flame Resistant Clothing is required for all personnel entering the 90s and 80s tank farm areas.
- \_\_\_ 5. Continuous gas testing is required for all work in the 90s and 80s tank farm areas.
- \_\_\_ 6. Personnel entering the tank farm must have radio communication on established channel as determined by the CRO.
- \_\_\_ 7. Prior to commencement of deballasting/skimming, CRO must notify all personnel in the tank farm of the expected start time.

### Tank Farm Access requirement:

**Note:** The following will be followed for accessing the BWT Tank Farm.

Log In & Log Out is required in all BWT process areas. BWT operations and staff personnel are not required to log in and out.

- \_\_\_ 1. If no Work Permit has been issued: The individuals entering the tank farm must notify the CRO and sign in on the BWT Sign-In Log unless escorted by a BWT operator or staff. When clear of the area the individual(s) must notify the CRO (who will record the time out into the log) or return and sign themselves out.
- \_\_\_ 2. If a Work Permit has been issued: Personnel desiring to enter the tank farm in order to join or visit a work site will notify the CRO. If access is authorized, the individual will sign the back of the permit at the job site. When work/visit is complete, the individual(s) will notify the CRO.

**Caution: All equipment operating in the tank farm must be continuously monitored.  
Personnel monitoring must maintain a continuous gas test.**

- \_\_\_ 1. Any hot work permits in the BWT tank farm which involves operation of standing equipment must be reviewed and approved by the Terminal Manager (or designee). "Standing equipment" includes Tioga heaters, light plants, air compressors, etc.



## Operating Procedure Ballast Water Treatment

Title: Restriction of BWT Tank Farm Access

Number: BWT-1.20 Page: 3 of 3

Revision: 8

Effective Date: 12/31/07

**Note:** The intent of this control is to provide additional review for hot work to be conducted over an extended period of time which increases exposure to an event with potential of fire/explosion. This does not apply to permits for routine attended vehicle entries or use of handheld devices by Operations and Safety personnel.

### END OF PROCEDURE

#### References:

For 90s and 80s Tank Top Work refer to:

- BWT-1.61, *Restriction of BWT Tank Top Activities*

#### Revision History

| Revision | Date     | Revision Summary   |
|----------|----------|--|
| 8        | 12/31/07 | Delete part of sentence 1, with electric fans running. Change to 2. delete 'deballasting or gravitating, prior to' add 'a venting event, prior to'.  |
| 7        | 11/07/07 | Only one fan operating, change references that apply to two fans.  |
| 6        | 08/09/07 | Change to Special Instructions strike NO and replace with ALL Fans Running on the Tanks.   |
| 5        | 07/20/07 | Add to Special Instructions information concerning specific conditions during Vapor Recovery construction is completed. Add to #2. gravitating more then 3 feet per hour with all electric fans running. Format changes. |
| 4        | 3/07/07  | Add to 2. initial entry. Add step 4.a. Delete Supervisor approval, replace with Terminal Manager (or designee)   |
| 3        | 1/12/07  | Removed Step 3 for Vehicular traffic or work conducted during and within 1 hour of the completion of deballasting into the 80s or 90s tank area and the gas test.  |
| 2        | 1/12/07  | Revised bullets in #2 defining when work is not allowed in the 80s and 90s tank dike areas.  |
| 1        | 9/25/06  | Add bottom bullet to #2. Delete b.3. Add 5. and 5.a. Changes to #6. delete hot work order information. Delete numbers 7. and 8.  |
| 0        | 7/10/06  | New Procedure  |



## Operating Procedure Ballast Water Treatment

Title: 90's Tank Farm Access Control

Number: BWT-1.22 Page: 1 of 3

Revision: 0

Effective Date: 01/18/08

Approved by:

**Lloyd Street, BWT Supervisor for Joe Kuchin, BWT Manager**

Applicable to:

Ballast Water Treatment Facility

### Purpose

The purpose of this procedure is to outline the controls required for accessing and conducting work in the Valdez Marine Terminal BWT 90's tank farm.

### Accountable Resources

- BWT Lead Operator (LO)
- BWT Control Room Operator (BWT CRO)
- P/V Control Room Operator (P/V CRO)
- Project Single Point of Contact (SPOC)
- Safety Specialist
- Operations Control Center (OCC)
- VMT Maintenance

### Safety

- Fire Retardant Clothing (FRC)

### SPECIAL INSTRUCTIONS.

1. The BWT Operator is to assure good communications between working groups.
2. All steps in this procedure shall be completed in sequence unless specifically noted.

### PROCEDURE

Ballast Water Treatment (BWT) has the responsibility to verify safe access to the 90's tank farm dike area. The BWT CRO is the control point for access into the 90's tank farm dike area. All personnel are required to obtain authorization from the BWT CRO prior to accessing the 90's tank farm dike area.

### Normal Entry

1. A Job Loss Analysis (JLA) will be conducted before any work in 90's dike area during deballasting, 90's tank gravity transfer, or during abnormally high influent rates such as high snow melt or storm water collection.



## Operating Procedure Ballast Water Treatment

Title: 90's Tank Farm Access Control

Number: BWT-1.22

Page: 2 of 3

Revision: 0

Effective Date: 01/18/08

**Warning:** No Access to BWT 90's tank farm when TK 92 is receiving ballast.

- \_\_\_ 2. If work is to be performed within a tank farm dike area, an appropriate work permit must be obtained from the BWT CRO or Project SPOC.
- \_\_\_ 3. If work in the 90's tank farm dike area includes the use of equipment or tools that may generate a source of ignition, hot work permit requirements must be met in accordance with SA-38.
- \_\_\_ 4. BWT CRO will verify deballasting schedule by contacting OCC.
- \_\_\_ 5. The BWT CRO will contact P/V CRO to communicate work activities before a permit is issued.
- \_\_\_ 6. BWT Operator will conduct gas testing and report time with results to BWT CRO/Project SPOC for work permits documentation.
- \_\_\_ 7. The 90's tank farm dike area will be considered safe to work in with a permit and continuous gas monitoring.
- \_\_\_ 8. When the permit is issued, personnel working in the 90's tank farm dike area are required to wear FRC (as the outermost clothing), hard hat, safety glasses, and steel toed boots. Personnel must also observe continuous gas monitoring.
- \_\_\_ 9. Tank farm access points will be posted identifying the requirement for notifying BWT CRO Operator on radio channel 6 prior to entry of dike area.
- \_\_\_ 10. Personnel working in the tank farm dike areas or vapor valve platform are required to monitor channel 6 to allow for emergency or special instructions from the BWT CRO.
- \_\_\_ 11. Vehicles and equipment authorized in the 90's tank farm dike area will be attended at all times while in operation. Park vehicles and place equipment away from areas where tank vents are located.
- \_\_\_ 12. Snow removal operator needs to contact BWT CRO before accessing 90's tank farm.

### Evacuation

- \_\_\_ 1. In case of a tank venting, the P/V Operator will give instructions on channel 6 to evacuate the 90's tank farm. The 90's tank farm evacuation alarm will activate automatically. The BWT CRO can also activate the 90's tank farm evacuation alarm.
- \_\_\_ 2. Personnel working in the 90's tank farm dike area during an evacuation must shutdown all sources of ignition and all electrical equipment.
- \_\_\_ 3. Personnel must exit the 90's dike area and proceed to their designated rally point.
- \_\_\_ 4. BWT CRO and Project SPOC must ensure all personnel have evacuated the area and notify P/V CRO when clear.
- \_\_\_ 5. BWT CRO may deactivate the evacuation alarm at this time.



## Operating Procedure Ballast Water Treatment

Title: 90's Tank Farm Access Control

Number: BWT-1.22 Page: 3 of 3

Revision: 0 Effective Date: 01/18/08

### Re-Entry after Evacuation

- \_\_\_ 1. The BWT LO, Project SPOC, BWT Operator and/or Safety Specialist must perform a gas test prior to the authorization of re-entry to the 90's tank farm dike area.
- \_\_\_ 2. If the gas test results are negative, the BWT LO or Project SPOC will announce an "ALL CLEAR" on channel 6.
- \_\_\_ 3. Work in the 90's tank farm dike area may resume under the "Normal Entry" criteria.

**Note:** Access control guidelines for 90's Tank Farm during "Scheduled Venting/Purging" of tanks for cleaning and returning to service are covered under PVR-1.95, *Purging a Crude or BWT 90's Tank*.

### END OF PROCEDURE

### References

- SA-38, *Corporate Safety Manual*
  - *Requirement 1.15 - Work Permit System*
- PVR-1.95, *Purging a Crude or BWT 90's Tank*
- 2007 Tank Farm Daily Operations & Maintenance Risk Assessment

### Records

None

### Revision History

| Revision | Date | Revision Detail                   |
|----------|------|-----------------------------------|
| 0        | TBD  | Initial issue from Project Z-538. |



## Operating Procedure Oil Movements and Storage

Title: East and West Tank Farm Access Control

Number: OMS-3.14 Page: 1 of 3

Revision: 1 Effective Date: 12/13/07

|  |                            |
|--|----------------------------|
| Approved by:<br><b>Ricky Kent, VMT Marine / OM&amp;S Manager</b> | Approval Date:<br>12/10/07 |
| Applicable to:<br>Oil Movements & Storage                        |                            |

### Purpose

The purpose of this procedure is to outline the controls required for accessing and conducting work in the Valdez Marine Terminal East and West tank farms.

### Accountable Resources

- OM&S Lead Operator (LO)
- OM&S Tank Farm Operator
- P/V Control Room Operator (CRO)
- Project Single Point of Contact (SPOC)
- Safety Specialist
- Operations Control Center (OCC)
- VMT Maintenance

### Safety

- Fire Retardant Clothing (FRC)

### PROCEDURE

Oil Movements & Storage (OM&S) has the responsibility to verify safe access to the East and West tank farm dike areas. The OM&S LO is the control point for access into the OM&S tank farm dike areas. All personnel are required to obtain authorization from the OM&S LO prior to accessing the tank farm dike areas.

### Normal Entry

1. A Job Loss Analysis (JLA) will be conducted before any work in dike areas when receiving product.
2. If work is to be performed within a tank farm dike area, an appropriate work permit must be obtained from the OM&S LO or Project SPOC.
3. If work in the tank farm dike area includes the use of equipment or tools that may generate a source of ignition, hot work permit requirements must be met in accordance with SA-38.
4. OM&S LO will verify crude oil distribution in tank farm by utilizing PI and or contact OCC to assess which relief tank is active and crude flowing into a designated tank farm dike area.
5. The OM&S LO will contact P/V CRO to communicate work activities before a permit is issued.



## Operating Procedure Oil Movements and Storage

Title: East and West Tank Farm Access Control

Number: OMS-3.14 Page: 2 of 3

Revision: 1

Effective Date: 12/13/07

6. OM&S Tank Farm Operator conducts gas testing and report time with results to OM&S LO/Project SPOC for work permits documentation.
7. The tank farm dike areas will be considered safe to enter with a permit and continuous gas monitoring.
8. When the permit is issued, personnel entering the tank farm dike area are required to wear FRC as the outermost clothing, hard hat, safety glasses, and steel toed boots. Personnel must also observe continuous gas monitoring.
9. Tank farm access points will be posted identifying the requirement for notifying OM&S Tank Farm Operator on radio channel 7 prior to entry of dike area.
10. Personnel working in the tank farm dike areas or tank access platforms are required to monitor one of the following channels (2, 7, 8, 9, 11, or 15) to allow for emergency or special instructions from the P/V CRO.
11. Vehicles and equipment authorized in the tank farm dike areas will be attended at all times while in operation. Park vehicles and place equipment away from areas where tank vents are located.
12. Normal snow removal and operator rounds do not require a work permit.

### Evacuation

1. In case of a tank venting, the P/V CRO will initiate an "ALL CALL" on channels 2, 7, 8, 9, 11, 15, and 16 to evacuate the tank farm. The P/V CRO will activate the tank farm evacuation alarm.
2. Personnel working in the tank farm dike areas during an evacuation must shutdown all sources of ignition and all electrical equipment.
3. Personnel must exit the dike areas and proceed to their designated rally point.
4. OM&S LO and Project SPOC must ensure all personnel have evacuated the area and notify P/V CRO when clear.
5. P/V CRO may deactivate the evacuation alarm at this time.

### Re-Entry after Evacuation

1. The OM&S LO, Project SPOC, OM&S Tank Farm Operator or Safety Specialist must perform a gas test prior to the authorization of re-entry to the tank farm dike area.
2. If the gas test results are negative, the OM&S LO or Project SPOC will request the P/V CRO to announce an "ALL CLEAR" on channels 2, 7, 8, 9, 11, 15, and 16.
3. Work in the tank farm dike areas may resume under the "Normal Entry" criteria.

**Note:** Access control guidelines for East and West Tank Farm during "Scheduled Venting/Purging" of tanks for cleaning and returning to service are covered under PVR-1.95, Purging a Crude Tank.

### END OF PROCEDURE



## Operating Procedure Oil Movements and Storage

Title: East and West Tank Farm Access Control

Number: OMS-3.14 Page: 3 of 3

Revision: 1 Effective Date: 12/13/07

### References

- SA-38, Corporate Safety Manual
  - Requirement 1.15 - Work Permit System
- PVR-1.95, Purging a Crude Tank
- 2007 Tank Farm Daily Operations & Maintenance Risk Assessment

### Records

None

### Revision History

| Revision | Date     | Revision Detail  |
|----------|----------|--|
| 1        | 12/13/07 | Replaces terminal procedure O-21.01.05. Make improvements. |
| 0        | 11/21/07 | Initial issue.   |



## Operating Procedure Occupational Health Unit

Title: Smoking

Number: OHU-8.01

Page: 1 of 2

Revision: 5

Effective Date: 09/19/05

Approved by:

**Julie Anderson, Operations Support Manager**

Approved by:

**Thomas Brady, Occupational Health Supervisor**

Applicable to:

All Alyeska Employees

### Purpose

To establish designated smoking and non-smoking areas and outline Alyeska's Smoking Cessation program.

### Responsible and Accountable Resources

**Corporate Occupational Health Unit:** Alyeska's Corporate OHU administers and interprets this procedure.

### Definitions

See *HR-0.02, Glossary of Terms*

### Procedure

#### A. GENERAL

All smoking areas will be clearly designated. If an area is not so designated, it should be considered a non-smoking area. Employees and visitors must honor the smoking and non-smoking designated areas. All enclosed designated smoking areas will have external exhaust systems. Pipe and cigar smoking is prohibited in all facilities.

Those who violate this procedure will be subject to disciplinary action.

#### B. CESSATION PROGRAMS

Employees who smoke are encouraged to participate in Company sponsored cessation programs that are available for Alyeska employees, spouses, and dependents. Reimbursement at up to \$100.00 per employee, spouse, or dependent, not to exceed \$200.00 per family, is available, and does not preclude or preempt eligibility for reimbursement for other programs under Alyeska's Health Maintenance Program.

#### C. DESIGNATED NON-SMOKING AREAS

The following are examples of non-smoking areas. This is not an exhaustive list. If the designation is unclear, it is the individual's responsibility to ascertain the location of the nearest smoking area.

1. Any public entryway of an office complex and within 25 feet of any office complex, unless there is a designated smoking enclosure provided at that site;
2. Dining rooms, break areas, and indoor recreation areas (i.e., TV and pool rooms);
3. Conference and training rooms;
4. Hallways, stairwells, and lobbies;
5. Restrooms;

anl (9/2/05)



## Operating Procedure Occupational Health Unit

Title: Smoking

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Effective Date: 09/19/05

6. All Company aircraft including charters;
7. Control rooms, including OCC;
8. SERVS communications rooms;
9. Field hazardous areas;
10. Exercise areas (weight rooms, saunas/Jacuzzis);
11. Any Alyeska vehicle, either owned or leased;
12. Common or shared work areas, including offices;
13. Office facilities;
14. PLQ rooms;
15. Shop and warehouse floors at the Marine Terminal unless designated otherwise; and
16. Other areas so designated.

### END OF PROCEDURE

#### Records

None

#### Revision History

| Revision | Date       | Revision Summary  |
|----------|------------|---|
| 5        | 09/19/05   | Updated, formatted to publish to TAPS Document System.    |
| 4        | 11/15/2001 | No information is available about the previous revisions. |

## 1.15 Work Permit System

### 1.15.1 Purpose

The purpose of the Work Permit System is to coordinate, authorize, and communicate work that must be controlled, in order to minimize the hazards associated with operating, maintaining, and modifying the Trans Alaska Pipeline System (TAPS).

### 1.15.2 Scope

Personnel who have not received the requisite training in the Work Permit System and proper orientation shall not be allowed to issue permits for such work at Alyeska facilities. All personnel who perform work that must be controlled, or who issue permits for such work at Alyeska facilities must become familiar with the Work Permit System outlined in this requirement. There may be additional procedures that have been adopted by local supervision.

### 1.15.3 References

- *FG-78, Operating, Maintenance & Emergency Plans for the Fuel Gas Pipeline*
- *MR-48, Trans-Alaska Pipeline Maintenance and Repair Manual*
- *SA-38, Corporate Safety Manual*
- SAF/075, "Work Permit Writing and Issuing"
- 29 CFR 1910, "Occupational Safety and Health Standards"
- 29 CFR 1926, "Safety and Health Standards for Construction"
- 33 CFR 154, "Facilities Transferring Oil or Hazardous Material in Bulk"
- International Safety Guide for Oil Tankers and Terminals (ISGOTT)
- National Fire Protection Association (NFPA) 70E, "Standard for Electrical Safety in the Workplace"

### 1.15.4 Titles and Responsibilities

Position titles may vary within operating areas. At times there may be more than one individual within a position category. When this occurs, responsibilities will be assigned to specific individuals and communicated to all affected parties prior to initiating work. It is everyone's responsibility to prevent an operation from being performed which has the potential to cause the area or equipment to become unsafe while the permit is in effect. Consideration should be given to simultaneous operations. For the purposes of this requirement, the following are example titles of positions and their defined responsibilities:

#### NOTES

1. The SERVS Support Contractor may administer all Work Permit activities germane to their activities at the SERVS base and warehouse complex.
2. The Maintenance Coordinators will issue and administer Pipeline Work Permits.

#### 1.15.4.1 Issuing Authority

This title refers to the First-Line Supervisor, Area Operator, Lead Operator, Control Room Operator, Maintenance Coordinator, or SPOC who has issued the permit.

Responsibilities include but are not limited to:

1. Conduct detailed job discussions, assessment of hazards, and establish precautions needed to accomplish tasks safely.
2. Ensure that all necessary Gas Tests for explosive, flammable, toxic, or other hazardous conditions are conducted.
3. Ensure that all hollow spaces, cavities, or containers are tested and vented to permit the escape of air or gases prior to preheating, burning/cutting, or welding.
4. Ensure safe conditions for the permit and necessary tests are performed for flammable and/or other hazardous conditions immediately prior to the start of Hot Work, or when work is suspended or stopped for cause.
5. Inform Fire Watch of potential fire hazards.
6. Complete the permit questions and checklist to ensure compliance with all items specific to the work.
7. Assure that Energy Isolation is followed consistent with SA-38, Requirement 1.16, "Energy Isolation."
8. Notify all personnel and areas affected by the permit.
9. Notify local supervision, if required by them, that a permit has been requested.

#### NOTE

Hot work permit issuing authority exceptions shall be:

- First line supervisor approves and signs hot work permits in classified areas for
  - Welding / torch cutting / grinding / open flame
  - Standing equipment e.g. tioga heaters, light plants, compressors, pump skids.
- Sr. Management endorsement is required for
  - Standing equipment operated in a classified area over one 12 hour work shift e.g. tioga heaters, light plants, compressors, pump skids.
  - Endorsement shall be annotated on back of permit in designated section.

Hot work permit delegation shall only occur in the absence of the issuing authority.

- Supervisor delegation shall be delegated upward
- Sr. Management delegation will be as outlined in the Approval Authority Guide

10. Ensure that the Person Doing Work knows the location of the nearest communications equipment and applicable safety devices.
11. Sign as authorizing authority for Permits after ensuring that the permit is correctly filled out.
12. A copy of the Work Permit shall be posted in the Control Room or held in clearly marked holders at the place of issue.
13. Advise relief person of any outstanding permits.

14. Verify that all permit closeout sections have been completed.

#### **1.15.4.2 First-Line Supervisor**

This title refers to the Alyeska Supervisor responsible for all work which is permitted under their jurisdiction.

Responsibilities include but are not limited to:

1. Assure Issuing Authority has received appropriate permit training (SAF/075) and has thorough knowledge of the area in which work is being permitted.
2. Ensure that provisions of the Work Permit System are adhered to in their area of responsibility (such as reviewing permits, reviewing work in progress, conducting self-assessments, etc.).
3. Assist Issuing Authority through detailed job discussions, assessment of hazards, and establishment of precautions needed to accomplish tasks safely.
4. Approve requests (may be verbal) for when and where weekly Unit Work Permits may be issued.
5. Conduct Safety Stand-downs as required.
6. Communicate additional local controls as required.

#### **1.15.4.3 Area Operator**

This title refers to the person responsible for the area in which the work is permitted.

Responsibilities include but are not limited to:

1. Acknowledge the permit and awareness of work to be performed by signing Work Permits. In the event the technician cannot sign the permit, technician may verbally acknowledge via radio or telephone. This proxy will be noted by the Issuing Authority who will mark the box "Verbally" on the permit endorsement block designated for the Area Operations Technician and print the Area Operator's name.
2. Perform or verify that all necessary Gas Tests for explosive, flammable, toxic, or other hazardous conditions are conducted.
3. Ensure/Verify combustible materials are covered or removed when cutting, grinding, or welding within a 35 foot area.
4. Perform Energy Isolation per SA-38, Requirement 1.16, "Energy Isolation."
5. Check availability and suitability of fire extinguishing equipment and/or other applicable safety equipment in the area.
6. Monitor the work, as appropriate, to ensure the conditions of the permit are not changing.
7. Inspect the work site to re-verify permit requirements after any interruption/emergency has occurred, prior to resuming work.
8. After work has been completed, at the discretion of the Area Operator, the permitted work area will be checked for safe conditions.
9. Advise the relief operator of any permits still in effect.

#### 1.15.4.4 Person Doing Work

This title refers to the person to whom the permit is issued.

##### NOTE

Permits will only be issued to personnel actually performing the permitted work. Endorsing multiple permits for multiple crews will not be allowed.

Responsibilities include but are not limited to:

1. Read and understand the conditions of the issued Work Permit before starting the job, and signify this understanding by signing the Work Permit.
2. Post the working copy of the permit at the work area or with the Person Doing Work if it cannot be posted at the job site.
3. Comply with Energy Isolation per SA-38, Requirement 1.16, "Energy Isolation."
4. Inspect the area to confirm safe working conditions. Ensure that the work crew knows location and operation of nearest safety and communication equipment such as telephone, fire alarm, emergency communication system, fire extinguisher, safety shower, first aid kit, etc., before starting work.
5. Be constantly aware of conditions in the immediate work area, and be ready to stop work if conditions change. Do not resume work without approval of the Issuing Authority.
6. Notify Issuing Authority when the job is suspended, completed, or when planned work or conditions change. Include such information as condition of site, any hazards, and scope of work completed.
7. Maintain radio contact with Issuing Authority or CRO/area operator as required.
8. Advise other workers of any special precautions or conditions pertaining to the job.
9. Appropriately mark the Closeout or Extension section of all issued Work Permits.
10. Clean up and secure the work area after completion of work each shift. At the end of the shift or upon completion of the work, whichever comes first, notify the Area Operator, return the permit to the Control Room or designated location, and complete the Closeout portion on the permit copy of record.

#### 1.15.4.5 Initiator/Requester

This title refers to the person who initiates or requests the permit. This may or may not be the Person Doing Work.

#### 1.15.4.6 On-site Supervisor of Person(s) Performing the Work

Responsibilities include but are not limited to:

1. Ensure that the necessary permit has been obtained before starting the job.
2. Assist operations/maintenance personnel through detailed job discussions and by helping to establish precautions needed to accomplish tasks safely.
3. Provide input to and help accomplish the safety requirements as outlined in the "special instructions" box of the permit.

4. Ensure that all endorsements have been made and that the Issuing Authority fully understands the job scope for which the permit was issued.
5. Monitor work for compliance to safety requirements.

#### **1.15.4.7 Alyeska or Contractor Safety Specialist**

It is recognized that not all work sites have full time Safety Department coverage, or that Safety Department availability may be minimal. When this is the case, Safety Department responsibilities, as required by the standards of this Safety Manual, may be delegated to a First Line Supervisor or other qualified person with documentation and concurrence.

When requested by Issuing Authority, the Alyeska or Contractor Safety Specialist shall provide an independent assessment of the work area and sign in the Special Instructions box of the permit for any work involving:

1. Burning, grinding, or welding (excluding buffing) on any process piping that has not been depressurized, blinded, or purged.
2. Piping used exclusively in seawater, water service, steam, and for which there is no potential for explosive atmospheres or hydrocarbon entry into the system are excluded from this requirement.

For Confined Spaces, the Alyeska or Contractor Safety Specialist shall:

1. Verify that the space has been properly prepared.
2. Test for oxygen content, flammability, toxic materials, and/or other hazards prior to entry.
3. After the permit is signed by the Issuing Authority, make the first entry into the enclosure, if necessary, to complete the safety evaluation.
4. Coordinate any special precautions and sign the Confined Space Entry Permit.
5. Endorse all Hot Work Permits that might affect the Confined Space Entry Permit, as requested by the Issuing Authority.
6. Participate in the identification of any restrictions that may be imposed on the permit.
7. Ensure the appropriate Alyeska procedures are followed and documented when re-classifying a confined space.
8. Determine whether or not a retrieval system or other emergency response equipment is required at the job site.
9. Assist operations personnel with preparation of Hot Work Permit in conjunction with Confined Space Entry Permit by inspecting job sites, conducting Gas Tests, helping to determine area classification, assigning Confined Space classifications, and reviewing special instructions on permits as needed.
10. Assist supervision in assessing the training of all responsible parties to ensure they can safely perform their work according to permit requirements.
11. Perform safety functions when requested for special projects outside normal routine work (e.g., tank entry, turnarounds, live tie-ins, etc.).
12. Assist in establishing special precautions when warranted by work activities.

#### 1.15.4.8 Fire Watch

A dedicated Fire Watch shall be required,

1. In a classified area, when operating standing equipment, such as heaters, vac-trucks, air compressors, light plants, Heath mixer motors, and other fuel-fire equipment such as hot water/steam pressure washers, etc.
2. Regardless of the NEC classification, whenever activities are conducted such as flame cutting, grinding, welding, soldering, chipping, brazing, dry abrasive blasting, any open flame activities (e.g., burning),
3. And, when any of the following conditions exist:
  - a. Appreciable amounts of combustible material (e.g., building materials) closer than 35 feet away from the point of operation.
  - b. Appreciable amounts of combustibles which can be easily ignited by sparks.
  - c. Wall or floor openings within a 35 foot radius exposure to combustible material in adjacent areas, including concealed spaces in walls or floors.
  - d. Combustible materials that are adjacent to the opposite side of metal partitions, walls, ceilings, or roofs and can possibly be ignited by conduction or radiation.
  - e. Hot Work - A fire watch must be maintained for a minimum of thirty (30) minutes after completion of hot work to detect and extinguish smoldering fires.

##### 1.15.4.8.1 Fire Watch Duties

The Fire Watch is a dedicated individual whose sole function is to perform fire watch duties.

###### NOTE

More than one fire watch shall be required if combustible materials that could be ignited by the hot work operation cannot be directly observed by a single fire watch (e.g., in adjacent rooms where hot work is done on a common wall; multiple floors, in a tank farm where Fire Watch cannot see all equipment from where they are positioned).

The Fire Watch will not perform any other duties that will take their attention away from the area where the hot work is performed. Fire Watch must:

1. On the Hot Work Permit, line 8, ensure Fire Watch Name is printed and includes signature with badge number.
2. Ensure that safe conditions are maintained during the hot work by monitoring conditions to ensure that a fire or explosion does not occur as a result of the work being performed.
3. Inspect area of responsibility to ensure there are no leaks or spills from equipment.
4. Be aware of the inherent hazards involved in hot work and ensure that no condition arises, or actions taken, that will lead to a hazardous situation in the hot work area.
5. Keep at least (2) 20-lb. ABC fire extinguishers at the hot work location.
6. Have means of emergency communication (two-way radio) to report a fire or other emergency.
7. Know the facility protocol to report a fire or other emergency situations.
8. Be familiar with the surrounding facilities to sound an alarm in the event of a fire.

9. Be trained in the facility fire safety procedures and the use of fire extinguishing equipment to extinguish fires only when safe to do so.
10. Remain in a location that allows immediate communication with the individual(s) performing hot work for instant communication if a fire breaks out.
11. Watch for fires in all exposed areas for a minimum of thirty (30) minutes (including lunch and break times) after hot work is completed.
12. Be trained to shut down equipment in case of fire or emergency.

**NOTE**

Due to the complexity of the work or project (i.e., various types of work - classified and non-classified, size of work site, multiple locations, etc.), more than one Fire Watch and Equipment Watch(s) may be required.

**NOTE**

Fire Watch requirements may apply for portable industrial heaters and other heat-producing equipment as per SA-38.

**1.15.4.9 Equipment Watch**

An Equipment Watch(s) is required any time there is standing equipment, a piece of fixed or mobile equipment such as: heaters, fuel-fired equipment such as hot water/steam pressure washers, vac-trucks, Heath mixer motors, etc., that pose an ignition hazard in a non-classified area or outside the area where any of the following conditions exist:

1. Appreciable amounts of combustible material (e.g., building materials) closer than 35 feet away from the point of operation.
2. Appreciable amounts of combustibles which can be easily ignited by sparks.
3. Wall or floor openings within a 35 feet radius exposure to combustible material in adjacent areas, including concealed spaces in walls or floors.
4. Combustible materials that are adjacent to the opposite side of metal partitions, walls, ceilings, or roofs and could possibly be ignited by conduction or radiation.
5. Hot Work - A fire watch must be maintained for a minimum of thirty (30) minutes after completion of hot work to detect and extinguish smoldering fires.

**1.15.4.9.1 Equipment Watch Duties**

1. Ensure safe conditions and good house-keeping are maintained.
2. Inspect area of responsibility to ensure equipment has required drip pans, no leaks or spills.
3. Know the facility protocol to report emergency situations.
4. Be trained to shut down equipment in case of emergency.

## NOTE

Due to the complexity of the work or project (i.e., various types of work - classified and non-classified, size of work site, multiple locations, etc.), more than one Fire Watch and Equipment Watch(s) may be required.

### 1.15.5 Work Permit Requirements

The Work Permit System shall apply to all work activities that must be controlled and is performed by Alyeska personnel, contractors, and sub-contractors at all work locations under Alyeska supervisory responsibility, including pipeline road crossings, Mainline Valve locations, pipeline underground cooling systems, vaults, etc.

1. When completing or initiating the Unit, Hot and Pipeline Work Permits, all fields of the permit must be addressed except as follows:
  - a. *Extended To* and *Extending Shift*, if there was no extension.
  - b. If a Gas Test was checked *No* or *N/A* then no Gas Test Results need be filled in.
  - c. *Check Boxes* not checked that refer to Page 2 need not be marked.
  - d. Optional boxes unless directed there by the permit.
  - e. The use of *N/A*, *No*, *None*, or a slash (/ or -) is acceptable to indicate that a response was considered.
2. For Excavations, any work of a civil nature, or activities that require lifting over the mainline pipe, the local MC should be consulted prior to issuing the permit.
3. For Confined Space Entry Permit, and Work Permits associated with the Confined Space Entry Permit, all fields must be completed.
4. For line-by-line instructions on using the forms of the Work Permit System, see training module SAF/075, which is available from Alyeska Training and Development or on the Alyeska A-Net.

#### 1.15.5.1 Time Limits

##### 1.15.5.1.1 Duration, Extension and Closeout of Permits

###### 1. Duration

All permits should be issued to cover the period required to accomplish the tasks, subject to these limitations:

- a. Unit and Hot Work Permits are normally issued not to exceed one work shift (12 hours) although, with proper endorsement by incoming personnel, they may be extended through the next shift.
- b. Confined Space Entry Permits shall be issued for only one work shift (12 hours) and shall not be extended.
- c. Unit Work Permits may be issued for a maximum of one week as determined by supervision.
- d. Pipeline Work Permits may be issued for the required time to complete a defined job task.

## 2. Extension

Permits will be in effect until job completion and may be extended past the work shift consistent with the following Work Permit Extension Requirements:

- a. Extensions may only be issued to original Persons Doing Work.
- b. A new Gas Test must be performed if required on original issuance.
- c. There is no change in work scope.
- d. Signatures by incoming Issuing Authority and Persons Doing work are required on all permit copies.

### **NOTE**

If work deviates from the permit as issued, a new permit must be issued.

## 3. Permit Closeout

- a. Permits should be returned to Issuing Authority as soon as work is complete or at end of shift, whichever comes first.
- b. The Person Doing Work will complete applicable Permit Closeout section.
- c. Post Work Comments shall be entered on the permit by the person completing that work and will include such things as: work complete, any precautions, information to be passed on, can equipment be operated or not operated, does oil need to be added, etc.

### **1.15.5.2 Stop Work**

It is the responsibility of all personnel working on Alyeska property or facilities to stop any work that may be unsafe to personnel, equipment, facilities or the environment.

If work is stopped for unsafe conditions, applicable permits shall be cancelled.

If work is stopped for tank venting, all work shall be suspended until the work area is deemed safe. The permit can then be used again and work resumed.

### **1.15.5.3 Facility Map**

Each Alyeska location/facility which issues Work Permits must prepare a Facility Map which clearly identifies all United States Coast Guard (USCG) regulated areas (Valdez Marine Terminal and SERVS) and NEC-defined Class I areas.

This map will be used by all Work Permit Issuing Authorities as a guide to determine whether or not a Work Permit is mandated by regulation. Additional areas may be identified on the local Facility Map, as conditions or requirements change, which would also require a Work Permit before any work is to be authorized. Managerial discretion could also authorize this Facility Map to include:

1. Laydown areas where daily, weekly, or longer permits are authorized.
2. Approved "shop" areas where Work Permits are not normally required.
3. Other pertinent markings local management may desire, such as approved smoking areas.
4. Areas where PSM regulations apply.

5. In the absence of such a facility/location map, all areas will be considered to be controlled areas and appropriate Work Permits must be issued.
6. Area maps may be given to contractors to assist them in identifying areas that require Work Permit authorizations.

#### **1.15.5.4 Verbal Approval of Work Permits at Remote Locations on the Pipeline**

The procedures for verbal approvals are intended to enhance the ability to perform work in a timely manner.

When Work Permits at remote locations are issued and/or closed using verbal, telephone/radio, or faxed communication between the Issuing Authority and Person Doing Work, the following requirements must be met:

1. A completed and signed copy of the current Work Permit, in compliance with all sections of this requirement, must be kept by the Issuing Authority.
2. An additional copy of the Work Permit must be posted at the work site.
3. At the completion of the work, the Work Permit must be returned in a timely manner to the Issuing Authority. The copy of the Work Permit at the work site may be signed as closed, and faxed, delivered, or mailed to the Issuing Authority.

#### **1.15.5.5 Unit Work Permit, Form 0161**

The Unit Work Permit is used to authorize work activities that must be controlled but do not present any of the hazards normally associated with Hot Work in Classified Areas or Confined Spaces.

A Unit Work Permit is appropriate for the following types of work:

1. Activities that require work related to general maintenance.
2. Activities that will not introduce a source of ignition into NEC Class I areas.
3. Activities that require Hot Work in unclassified areas.
4. Activities that require work on energized electrical systems over 50 volts in unclassified areas. The following criteria apply:
  - a. Persons Doing Work shall follow safe work practice guidelines per NFPA 70E, and OSHA 29 CFR 1910 and/or 29 CFR 1926.
  - b. Certain cabinets containing control voltages and equipment may also contain exposed terminals that are at a higher potential. Jobs that require electrical rework or personnel exposure in such cabinets may require additional safeguards, including additional qualified persons present as needed for job safety.
  - c. Only qualified persons may work on electrical circuits or equipment that have not been deenergized.
  - d. Two qualified persons may be required when working on electrical circuits or equipment.

#### **NOTE**

Bench work in a shop which is deemed not to be hazardous does not typically require a Work Permit.

5. Excavations, to be performed per guidelines in Requirement 2.6, "Excavation Safety."
6. The use of Ionization Radiation Equipment, The following criteria will apply:
  - a. Positive communication must be established with Area Operator and the operations supervisor whenever radiographic equipment is used within a 500 yard radius of any facility having ultraviolet (UV) detection/fire suppression systems.
  - b. The radiography crew must submit a work plan to the operations supervisor, or designee, describing the area where the radiography equipment will be used, what is to be examined, the expected duration of the job, the Single Point of Contact (SPOC), which areas will be restricted, and any other information that is pertinent to the work.
    - 1) Radiation emitting devices must remain locked within the transporting vehicle while preparations for testing are made. The radiography crew must notify the Area Operator before each test is made, and again after each test is completed.
    - 2) Applicable warning signs must be posted around the work area to warn personnel of radiation hazards.
    - 3) UV detection/fire suppression systems in the affected work area must be bypassed or shielded when radiography is performed at Pump Stations (refer to Requirement 3.4, "Bypassed, Damaged, or Inoperable Safety Devices").
    - 4) Positive communication must be established with Area Operator and the operations supervisor whenever radiographic work is completed and UV/fire suppression systems must be returned to normal conditions as per the work plan.
7. Activities that require work in a Permit Required Confined Space Reclassified as Non-Permit Required Confined Space.
8. Pressure testing.
9. Cutting, grinding, welding in non-classified areas.

#### **1.15.5.6 Hot Work Permit, Form 0162**

The Hot Work Permit is used to authorize activities that require special controls to prevent fire or explosion. The Hot Work Standard minimizes the potential of fire or explosion in Classified Areas by requiring a Hot Work Permit.

## NOTE

Hot work permit issuing authority exceptions shall be:

- First line supervisor approves and signs hot work permits in classified areas for
  - Welding / torch cutting / grinding / open flame
  - Standing equipment e.g. tioga heaters, light plants, compressors, pump skids.
- Sr. Management endorsement is required for
  - Standing equipment operated in a classified area over one 12 hour work shift e.g. tioga heaters, light plants, compressors, pump skids.
  - Endorsement shall be annotated on back of permit in designated section.

Hot work permit delegation shall only occur in the absence of the issuing authority.

- Supervisor delegation shall be delegated upward
- Sr. Management delegation will be as outlined in the Approval Authority Guide

- The Issuing Authority may also require Hot Work Permits based on Facility Operating Guidelines above and beyond SA-38 requirements. Area Classification drawings and applicable industry standards will define the Classified Areas.

### 1.15.5.6.1 Hot Work Permit Activities

A Hot Work Permit is required but not limited to the following activities:

1. Open flame, burning, grinding or welding, within 75 feet of a Classified Area,
2. The use of non-intrinsically safe electrical tools and instruments in a Classified Area,
3. Work on electrical circuits including the opening of explosion proof boxes or junction boxes in a Classified Area,
4. Activities that require work on energized electrical systems in Classified Areas. The following criteria apply:
  - a. The area shall be Gas Tested.
  - b. Person Doing Work shall follow safe work practice guidelines per NFPA 70E, and OSHA 29 CFR 1910 and/or 29 CFR 1926.
  - c. Certain cabinets containing control voltages and equipment may also contain exposed terminals that are at a higher potential. Jobs that require electrical rework or personnel exposure in such cabinets may require additional safeguards, including additional qualified persons present as need for job safety.
  - d. Only qualified persons may work on electrical circuits or equipment that have not been deenergized.
  - e. Two qualified persons may be required when working on electrical circuits or equipment.
5. The use of spark producing devices in a Classified Area.
6. Hot work on portable and mobile containers which contain or have contained flammable or combustible materials.
7. Impedance thawing.
8. Hot Taps, to be performed per guidelines in SA-38, and/or MR-48 and FG-78.

9. Heaters, cranes, and other equipment that may introduce an ignition source, operating within a Classified Area.

#### **1.15.5.6.2 Hot Work Permit Precautions**

The following precautions shall be taken before a Hot Work Permit is issued (if applicable):

1. Ensure compliance with SA-38, Requirement 1.19, "Welding and Flame Cutting," especially Section 1.19.6.4, has been met.
2. Ensure compliance with SA-38, Requirement 1.16, "Energy Isolation," has been met.
3. A qualified person (Alyeska or contractor) will Gas Test the area prior to the start of the work, and if necessary, continue to periodically Gas Test all affected work areas
4. A trained person has been assigned as the designated Fire Watch.
5. Fire and gas detection systems have been isolated or by-passed.
6. Fire blankets and catch basins are in place.
7. Appropriate fire extinguishing equipment is available at the work site.
8. Adequate ventilation has been established.
9. Sumps and drains have been checked and adequately covered within 35 feet of the work site.
10. Welding machines are grounded as close to the welding point as practical.

#### **1.15.5.7 Blinding and Variance Guidelines**

Alyeska's blinding requirements are provided in SA-38, Requirement 1.16, "Energy Isolation," and are consistent with the blinding requirements of the Alaska Safety Handbook with the exception that Alyeska does not require a variance for double block and bleed, including Hot Work Permits.

By Government regulation, variances are not permitted for a double block and bleed in lieu of blinding for cutting or welding on used drums, barrels, tanks, or other containers. Any pipelines or connections to the drum, tank, or vessel must be disconnected or blinded.

In cases of Hot Work on equipment which has been used exclusively in seawater, water service, or steam, and if there is no potential for explosive atmospheres or hydrocarbon entry into the system, a single block, as a minimum, is acceptable for isolation in lieu of blinding.

#### **1.15.5.8 Hot Work in Confined Spaces**

When arc welding is to be suspended (unattended for a period of 30 minutes or more), all electrodes must be removed from the holders and carefully located so that accidental contact cannot occur, and the machine must be disconnected from the power source or turned off.

When gas welding or burning/cutting, the torch valves must be closed and the gas supply to the torch positively shut off at some point outside the Confined Space whenever the torch is not being used for a substantial period of time (unattended for a period of 30 minutes or more). Where practical, the torch and hose must also be removed from the Confined Space.

When welding or burning/cutting is being performed in a Confined Space, the gas cylinders and welding machines must be left outside of the Confined Space.

After welding operations are completed, the welder must mark the hot metal or provide some other means of warning other workers.

Local exhaust and/or general ventilation must be adequate to keep the amount of toxic fumes, gases, or dust below maximum allowable concentrations or appropriate respiratory protection must be utilized.

#### 1.15.5.9 Hot Work on Berths 1, 3, 4, and 5 at VMT

The *International Safety Guide for Oil Tankers and Terminals* defines Hot Work In Uncontrolled Loading Areas as work involving sources of ignition or temperatures sufficiently high enough to cause the ignition of a flammable gas mixture. This includes any work requiring the use of welding, burning, or soldering equipment, blow torches, some power driven tools, portable electrical equipment that is not intrinsically safe or contained within an approved explosion-proof housing, sandblasting, or internal combustion engines. The USCG will issue an annual welding and Hot Work Permit to the Terminal in accordance with 33 CFR 154, "Facilities Transferring Oil or Hazardous Material in Bulk." No further notifications to the USCG are required for work being performed on the berth relating to Hot Work. Specific rules are as follows:

1. Hot Work will not be performed on a berth with a tanker alongside during uncontrolled loading.
2. Hot Work will not be performed in the construction dock area when a tanker is alongside Berth 1 during transfer operations.
3. Hot Work will not be performed at the tug dock or in the immediate onshore area when a tanker is alongside Berth 3 during transfer operations.
4. Approved Hot Work may be permitted with a tanker alongside if all of the following conditions are met:
  - a. Hot Work is limited to the removal of explosion-proof housing in a Classified Area to set, adjust, or inspect electrical connections and limit switches.
  - b. Crude loading is vapor controlled. Hot Work will be immediately discontinued if tanker venting or any unusual conditions occur with the operation of the vapor control system.
  - c. Continuous Gas Testing during work.
  - d. Signs have been placed at the 100-foot mark to show clear delineation.

#### NOTE

Notifications to the USCG may be necessary for Hot Work on the berths.

#### 1.15.5.10 Confined Space Entry Permit, Form 0160

The Confined Space Entry Permit is used to authorize entry into Confined Spaces meeting one or more of the following characteristics:

1. Contains or has the potential to contain a hazardous atmosphere.
2. Contains a material that has the potential for engulfing an entrant.
3. Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross section.
4. Contains any other recognized serious safety or health hazards.

Examples of Confined Spaces that may meet the criteria identified above include, but are not limited to, process vessels, process towers, tanks, sumps, pits, sewers, compartments with a manhole, valve pits, well cellars, pipelines.

Authorization of work requires an appropriate Unit, Pipeline, or Hot Work Permit. In no circumstances will a Confined Space Entry Permit be issued without an appropriate Work Permit. All associated permits must be attached to the Confined Space Entry Permit on completion of work and retained for one year.

#### **1.15.5.10.1 General Considerations**

1. The Confined Space Entry Permit does not authorize work to begin. The Confined Space Entry Permit must be accompanied by an appropriate Unit, Pipeline, or Hot Work Permit.
2. When personnel entry into a Confined Space is required, job specific procedures shall be followed. The procedure will outline the draining, blinding, cleaning, inspection, and work to be performed. The detail of the procedure will be appropriate to the job. The procedure will be reviewed by all involved departments (including FSIH) before work begins.
3. Prior to entry, the contents and hazards of the Confined Space shall be identified. Whenever possible, tanks, vessels, and piping shall be cleaned by water washing, flushing, or steaming. Cleaning by hand should be limited to final cleanup unless no other cleaning process is feasible.
4. Prior to the entry, all potential sources of energy affecting the space shall be isolated in accordance with SA-38, Requirement 1.16, "Energy Isolation." Furthermore, vapor barriers are not an acceptable substitute for blinds.
5. All connecting lines to the vessel shall be physically disconnected and misaligned or blinded at a point as near to the space as possible.
6. Adequate ventilation shall be maintained in the Confined Space throughout the entry operation. All ventilation equipment shall be bonded and grounded. If mechanical ventilation is used, it must be located in such a manner that it will not introduce contaminants such as gas or toxic vapors. In addition, it should be placed in such a manner that it will not prevent egress from the space. This will be verified by the Alyeska or Contractor Safety Specialist, and monitored by the Attendant.
7. An area outside the Confined Space shall be made available for decontamination as necessary.
8. Retrieval Systems shall be used whenever an entrant enters a Confined Space, as covered by this section, unless the retrieval system would increase the overall risk of the entry or would not contribute to the rescue of the entrant. Alyeska or Contractor Safety Specialist will determine when retrieval systems are appropriate.
9. Any Hot Work in a location that may affect the Confined Space shall be approved by all parties who have authorized and signed the Confined Space Entry Permit. Any Hot Work performed within the boundaries of a Confined Space shall be approved and signed off by Alyeska or Contractor Safety Specialist and should be referenced to the Hot Work Section under the "Hot Work in a Confined Space" section. A Gas Test of the atmosphere where the Hot Work is to take place shall be performed by the Alyeska or Contractor Safety Specialist and documented on the Hot Work Permit.
10. Permit-Required Confined Space entry safety plans/procedures must be approved by the local supervisor, entry supervisor, and Field Safety representative and available at the entrance to the Permit-Required Confined Space.

## NOTE

Other work permits as appropriate (Unit, Hot, or Confined Space Entry) shall apply to all locations that are covered by the Pipeline Work Permit.

### 1.15.5.11.1 Pipeline Right-of-Way (ROW)

The pipeline ROW is described as the land within which Alyeska is authorized to install, operate, and maintain the pipeline. For Work Permit activities, this term is normally used to identify any work area within the TAPS and Fuel Gas Line ROW that is outside of the Pump Station and Valdez Terminal perimeter fences.

1. The width of the ROW measured from pipeline centerline is variable and dependent on the landowner, pipeline mode, facilities, and special burial modifications. ROW widths for the pipeline on private lands vary on a case-by-case basis. Typical ROW widths are described in *MR-48* and *FG-78*.
2. Work that will result in the disturbance of vegetation outside the existing workpad embankment even though the work site may be within the formal pipeline ROW requires written landowner approval.

### 1.15.5.11.2 General Considerations

Reference *MR-48, Trans-Alaska Pipeline Maintenance and Repair Manual* or *FG-78, Operating, Maintenance & Emergency Plans for the Fuel Gas Pipeline*, for minimum approved requirements, guidelines, and methods to cover the majority of pipeline maintenance and repair situations.

## 1.15.6 Definitions

### 1.15.6.1 NEC Class I Area

An area in which flammable gases or vapors are or may be present in the air, in quantities sufficient to produce explosive or ignitable mixtures.

### 1.15.6.2 Hot Work In Berth Uncontrolled Loading Areas

Work involving sources of ignition or temperatures sufficiently high enough to cause the ignition of a flammable gas mixture. This includes any work requiring the use of welding, burning, or soldering equipment, blow torches, some power driven tools, portable electrical equipment that is not intrinsically safe or contained within an approved explosion-proof housing, sandblasting, or internal combustion engines. (As defined by the *International Safety Guide for Oil Tankers and Terminals*.)

### 1.15.6.3 Work Permit

A control document that authorizes all work activities that must be controlled in a particular area. Specific federal and state regulations require written Work Permits for Permit-Required Confined Space Entry and for cutting, grinding, and welding operations. Alyeska has also elected to use Unit Work Permits (*Form 0161*), Hot Work Permits (*Form 0162*), and Pipeline Work Permits (*Form 3459*) to control other types of work as well.

## **1.15.7 Training**

N/A

## **1.15.8 Records**

Quality and Non-Quality records driven by this requirement in SA-38 are listed below.

For record retention requirements, see the *Records Retention Schedule* located under Resources\Records\Records Retention Schedule on the A-Net.

### **1.15.8.1 Quality Records**

- *Form 0160, Confined Space Entry Permit* (including all associated work permits)

### **1.15.8.2 Non-Quality Records**

- *Form 0144, Work Log*
- *Form 0161, Unit Work Permit*
- *Form 0162, Hot Work Permit*
- *Form 3459, Pipeline Work Permit*

Figure 6. Form 0160, Confined Space Entry Permit (Page 1)

|   |                    |   |   |   |                      |   |                          |                          |
|---|--------------------|---|---|---|----------------------|---|--------------------------|--------------------------|
|    |                    | <h2 style="margin: 0;">CONFINED SPACE ENTRY PERMIT</h2>                         |   |   |                      |   |                          |                          |
| <b>C-</b>   |                    |   |   |   |                      |   |                          |                          |
| THIS PERMIT IS FOR ENTRY ONLY. IF WORK IS TO BE PERFORMED, A UNIT, HOT, OR PIPELINE WORK PERMIT MUST BE ATTACHED.   |                    |   |   |   |                      |   |                          |                          |
| If this permit requires entry into area subject to vapor releases, the person doing the entry MUST contact the Control Room for permission to enter the area and have continuous radio contact with the Control Room while in the area. This permit may be cancelled by anyone at any time. |                    |   |   |   |                      |   |                          |                          |
| <b>RETURN THIS PERMIT TO ISSUING AUTHORITY WHEN WORK IS COMPLETE, OR BY THE END OF THE SHIFT, WHICHEVER COMES FIRST.</b>  |                    |   |   |   |                      |   |                          |                          |
| Permit Initiator/Company:   |                    | Entry Supervisor:   |   |   | Date:                |   |                          |                          |
| Confined Space Location/Identification:   |                    |   |   |   | Control/MC No.:      |   |                          |                          |
| Confined Space Description:   |                    |   |   | Work Description:   |                      |   |                          |                          |
| Entrants Listed On: <input type="checkbox"/> Badge Board <input type="checkbox"/> Permit page 2   |                    |   |   | Attendant(s):   |                      |   |                          |                          |
| List the Hazards of the Confined Space and those that may be created by the work:   |                    |   |   |   |                      |   |                          |                          |
| <b>ACCEPTABLE ENTRY CONDITIONS OF INTERNAL/EXTERNAL HAZARDS (PLEASE CHECK APPROPRIATE BOXES)</b>  |                    |   |   |   |                      |   |                          |                          |
| Area Posted/Barricaded <input type="checkbox"/> Yes <input type="checkbox"/> N/A  |                    | Purging Complete <input type="checkbox"/> Yes <input type="checkbox"/> N/A      |   | Pressure Relieved <input type="checkbox"/> Yes <input type="checkbox"/> N/A                               |                      | MSDSs On Site <input type="checkbox"/> Yes <input type="checkbox"/> N/A |                          |                          |
| Piping Isolated <input type="checkbox"/> Yes <input type="checkbox"/> N/A   |                    | Ventilation Operating <input type="checkbox"/> Yes <input type="checkbox"/> N/A |   | Electrical Isolation <input type="checkbox"/> Yes <input type="checkbox"/> N/A                            |                      | Other <input type="checkbox"/> Yes <input type="checkbox"/> N/A         |                          |                          |
| Blinding Done <input type="checkbox"/> Yes <input type="checkbox"/> N/A   |                    | Safe Access/Egress <input type="checkbox"/> Yes <input type="checkbox"/> N/A    |   | Rotating Equipment Disconnected <input type="checkbox"/> Yes <input type="checkbox"/> N/A                 |                      |   |                          |                          |
| Safety Plans/Procedures/Variations reviewed and at the work site? <input type="checkbox"/> Yes <input type="checkbox"/> N/A   |                    |   |   | Affected areas, e.g., OCC, Rescue Team notified <input type="checkbox"/> Yes <input type="checkbox"/> N/A |                      |   |                          |                          |
| Will work being done in Confined Space introduce additional hazards? <input type="checkbox"/> Yes <input type="checkbox"/> N/A  |                    |   |   | List associated Work Permits: <input type="checkbox"/> Yes <input type="checkbox"/> N/A                   |                      |   |                          |                          |
| If Yes, will Acceptable Entry Conditions mitigate the hazards? <input type="checkbox"/> Yes <input type="checkbox"/> N/A  |                    |   |   |   |                      |   |                          |                          |
| Is Continuous Gas Test equipment prepared? <input type="checkbox"/> Yes <input type="checkbox"/> N/A  |                    |   |   |   |                      |   |                          |                          |
| Atmospheric Limits:   | % O <sub>2</sub> : | % LEL:  | H <sub>2</sub> S ppm:                               | CO ppm:   | THC ppm:             | Benzene:  | Other (Describe):        |                          |
| Initial Test Results:   | % O <sub>2</sub> : | % LEL:  | H <sub>2</sub> S ppm:                               | CO ppm:   | THC ppm:             | Benzene:  | Other: Time: Tester:     |                          |
| Initial Gas Detection Equipment:  |                    |   | Initial Gas Tester: Verbal <input type="checkbox"/> |   | Recording Frequency: |   |                          |                          |
| Attendant/Entrant Communication <input type="checkbox"/> Direct <input type="checkbox"/> Radio Channel <input type="checkbox"/> Air Horns <input type="checkbox"/> Specified in Safety Plan   |                    |   |   |   |                      |   |                          |                          |
| Equipment Requirements: <input type="checkbox"/> PPE as specified in Safety Plan <input type="checkbox"/> Non-Entry Retrieval System <input type="checkbox"/> Fall Protection <input type="checkbox"/> As listed on page 2  |                    |   |   |   |                      |   |                          |                          |
| Rescue Contact Person or Team:  |                    |   |   | Contact Method:   |                      |   |                          |                          |
| <b>SPECIAL INSTRUCTIONS:</b>  |                    |   |   | <b>PERMIT AUTHORIZATIONS</b>  |                      | Time  | Date                     |                          |
|   |                    |   |   | Area Operator:  |                      |   |                          |                          |
|   |                    |   |   | Safety Rep:   |                      |   |                          |                          |
|   |                    |   |   | Entry Supervisor:   |                      |   |                          |                          |
| Issuing Authority:  |                    |   |   |   |                      |   |                          |                          |
| <b>PERMIT CLOSEOUT OR CANCELLATION</b>  |                    |   |   |   |                      | Yes   | No                       | N/A                      |
| 1. Has the work Area and/or Equipment been cleaned up?  |                    |   |   |   |                      | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Has the Area Operator been notified?   |                    |   |   |   |                      | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. List Problems Encountered:   |                    |   |   |   |                      |   |                          |                          |
| 4. Entry Supervisor:  |                    |   |   | Time:   | Date:                |   |                          |                          |
| <input type="checkbox"/> Permit Canceled  |                    | Time:   | Initials:   | Reasons:  |                      |   |                          |                          |
| 5. Have other affected areas, e.g. OCC, been notified of status of this permit?   |                    |   |   |   |                      | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. All Isolated, By-Passed, or Shutdown systems returned to normal?   |                    |   |   |   |                      | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. Issuing Authority:   |                    |   |   | Time:   | Date:                |   |                          |                          |

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Figure 7. Form 0161, Unit Work Permit (Page 1)



# UNIT WORK PERMIT

| U-   |                    |        |  |                         |               |  |       |           |    |     |
|--|--------------------|--------|--|-------------------------|---------------|--|-------|-----------|----|-----|
| If this work requires entry into area subject to vapor releases, the person doing the work MUST contact the Issuing Authority for permission to enter the area and have continuous radio contact with the Issuing Authority while in the area. This permit may be cancelled by anyone at any time.<br><b>RETURN THIS PERMIT TO ISSUING AUTHORITY WHEN WORK IS COMPLETE, OR BY THE END OF THE SHIFT, WHICHEVER COMES FIRST.</b> |                    |        |  |                         |               |  |       |           |    |     |
| Permit Initiator/Company:  |                    |        | Person Doing Work:   |                         |               | Date:  |       |           |    |     |
| Specific Location/Equipment:   |                    |        | Phone/Radio/Pager #:   | Estimated # of Workers: |               | Control/MC No.:  |       |           |    |     |
| Work Description:  |                    |        |  |                         |               | Time Start:  |       | Time End: |    |     |
| Procedure #:   |                    |        |  |                         | Work Order #: |  |       |           |    |     |
| <b>UNIT WORK PERMIT ITEMS TO CONSIDER (Checked boxes must have associated review on page 2)</b>  |                    |        |  |                         |               |  |       |           |    |     |
| <input type="checkbox"/> Non-Permit Required Confined Space Entry  |                    |        | <input type="checkbox"/> Alternate Procedure Required Confined Space Entry     |                         |               | <input type="checkbox"/> Excavation  |       |           |    |     |
| <input type="checkbox"/> Cutting, Grinding, Welding in Non-Classified Areas  |                    |        | <input type="checkbox"/> Energized Electrical Circuits in Non-Classified Areas |                         |               | <input type="checkbox"/> Energy Isolation  |       |           |    |     |
| <input type="checkbox"/> Pressure Testing  |                    |        | <input type="checkbox"/> Radiography   |                         |               |  |       |           |    |     |
| <b>PLEASE CHECK APPROPRIATE RESPONSE</b>   |                    |        |  |                         |               |  |       | Yes       | No | N/A |
| 1. Have affected personnel been briefed on job safety and requirements and on back of permit?  |                    |        |  |                         |               |  |       |           |    |     |
| 2. Is this work affected by, or does this work affect, other work or processes? If Yes, describe below   |                    |        |  |                         |               |  |       |           |    |     |
| 3. Have fire detection, gas systems, and/or suppression systems been Isolated/By-passed? If Yes, describe below.   |                    |        |  |                         |               |  |       |           |    |     |
| 4. Could work cause Remote Alarms? If Yes, describe below.   |                    |        |  |                         |               |  |       |           |    |     |
| 5. Is equipment monitored or controlled by OCC being taken out of service? If Yes, time OCC notified:  |                    |        |  |                         |               |  |       |           |    |     |
| 6. Have Shutdowns been disabled? If Yes, describe below  |                    |        |  |                         |               |  |       |           |    |     |
| 7. Is Energy Isolation/Lockout necessary? If Yes, Tag or Mastercard Number:  |                    |        |  |                         |               |  |       |           |    |     |
| 8. Is Gas Test Required?   |                    |        |  |                         |               |  |       |           |    |     |
| 9. Is Continuous Gas Test required?  |                    |        |  |                         |               |  |       |           |    |     |
| Initial Gas Test   | % O <sub>2</sub> : | % LEL: | H <sub>2</sub> S ppm   | CO ppm:                 | THC ppm:      | Benzene/Other:   | Time: | Tester:   |    |     |
| Extended/Retest Gas Test   | % O <sub>2</sub> : | % LEL: | H <sub>2</sub> S ppm:  | CO ppm:                 | THC ppm:      | Benzene/Other:   | Time: | Tester:   |    |     |
| <b>SPECIAL INSTRUCTIONS:</b><br><br><br><br><br><br><br><br><br><br>   |                    |        |  |                         |               | <b>PERMIT AUTHORIZATIONS</b>   |       |           |    |     |
|  |                    |        |  |                         |               | <b>INITIATING SHIFT Signature (Badge # If required)</b><br>Area Operator: <input type="checkbox"/> Verbally            |       |           |    |     |
|  |                    |        |  |                         |               | Person Doing the Work:<br><br>Issuing Authority:   |       |           |    |     |
|  |                    |        |  |                         |               | <b>EXTENDING SHIFT (See page 2, Permit Extension Requirements)</b><br>Area Operator: <input type="checkbox"/> Verbally |       |           |    |     |
|  |                    |        |  |                         |               | Person Doing the Work:<br><br>Issuing Authority:   |       |           |    |     |
| <b>PERMIT CLOSEOUT</b>   |                    |        |  |                         |               |  |       | Yes       | No |     |
| 1. Has the work Area and/or Equipment been cleaned up?   |                    |        |  |                         |               |  |       |           |    |     |
| 2. Has the Area Operator been notified?  |                    |        |  |                         |               |  |       |           |    |     |
| 3. Post Work Comments:   |                    |        |  |                         |               |  |       |           |    |     |
| 4. Person Doing The Work:  |                    |        |  |                         |               | Time:  | Date: |           |    |     |
| 5. Have other affected areas, e.g. OCC, been notified of status of this permit?  |                    |        |  |                         |               |  |       |           |    |     |
| 6. All Isolated, By-Passed, or Shutdown systems returned to normal? If not, Have EIT or EOS logs been updated?   |                    |        |  |                         |               |  |       |           |    |     |
| 7. Area Operator/Control Room/SPOC/Issuing Authority or Delegate:  |                    |        |  |                         |               | Time:  | Date: |           |    |     |

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Figure 7. Form 0161, Unit Work Permit (Page 2)



# UNIT WORK PERMIT

Any individual may cancel this work permit at any time if they consider conditions or work methods to be unsafe. Anyone canceling a work permit must: a) Inform the person doing the work; b) Remove the site copy of the permit; and c) Return it to the Issuing Authority/SPOC, giving reasons for their actions.

|   | YES                      | N/A                      | Unit Work Permit Items To Consider  | U-   |
|---|--------------------------|--------------------------|---|--|
| N.P.R.C.S.E.*   | <input type="checkbox"/> | <input type="checkbox"/> | Has a reclassification been certified & signed?   | <input type="checkbox"/> See attached form <input type="checkbox"/> See Special Instructions |
| Cutting, Grinding, Welding in Non-Classified Areas    | <input type="checkbox"/> | <input type="checkbox"/> | Fire Detection/Suppression systems need to be bypassed?   |  |
|   | <input type="checkbox"/> | <input type="checkbox"/> | Fire extinguishers present and in required location?  |  |
|   | <input type="checkbox"/> | <input type="checkbox"/> | Combustible materials removed/covered within 35'?   |  |
|   | <input type="checkbox"/> | <input type="checkbox"/> | Sumps/drains checked and covered?   |  |
|   | <input type="checkbox"/> | <input type="checkbox"/> | Welding screens required?   |  |
|   | <input type="checkbox"/> | <input type="checkbox"/> | Proper eye protection?  |  |
|   | <input type="checkbox"/> | <input type="checkbox"/> | Is a welding procedure required?  |  |
| Pressure Testing                                      | <input type="checkbox"/> | <input type="checkbox"/> | Area posted?  |  |
|   | <input type="checkbox"/> | <input type="checkbox"/> | Testing procedure in place?   |  |
|   | <input type="checkbox"/> | <input type="checkbox"/> | Notification of personnel in test area?   |  |
|   | <input type="checkbox"/> | <input type="checkbox"/> | Spill response discussed?   |  |
| A.P.R.C.S.E.**  | <input type="checkbox"/> | <input type="checkbox"/> | Is the procedure available? If Yes, Procedure #:  |  |
|   | <input type="checkbox"/> | <input type="checkbox"/> | Have the safety requirements of procedure been reviewed and met, including Gas Test?  |  |
| Energized Electrical Circuits in Non-Classified Areas | <input type="checkbox"/> | <input type="checkbox"/> | Visual inspection only?   |  |
|   | <input type="checkbox"/> | <input type="checkbox"/> | Testing/Troubleshooting?  |  |
|   | <input type="checkbox"/> | <input type="checkbox"/> | Removal/Replacement/Re-work required?   |  |
|   | <input type="checkbox"/> | <input type="checkbox"/> | Are safe work practices in place per SA-38?   |  |
| Radiography   | <input type="checkbox"/> | <input type="checkbox"/> | Warning signs/lights/ropes?   |  |
|   | <input type="checkbox"/> | <input type="checkbox"/> | Safe operating limits delineated?   |  |
|   | <input type="checkbox"/> | <input type="checkbox"/> | UV/detection/suppression systems by-passed if necessary?  |  |
|   | <input type="checkbox"/> | <input type="checkbox"/> | Notification of personnel in test area?   |  |
| Excavation  | <input type="checkbox"/> | <input type="checkbox"/> | Has underground electrical, piping, etc. been identified and marked?  |  |
|   | <input type="checkbox"/> | <input type="checkbox"/> | Excavation Plan attached?   |  |
|   | <input type="checkbox"/> | <input type="checkbox"/> | Has MC been advised of work and reviewed requirements?  |  |
|   | <input type="checkbox"/> | <input type="checkbox"/> | Where applicable, has competent person reviewed plan and inspected excavation?  |  |
|   | <input type="checkbox"/> | <input type="checkbox"/> | When deeper than four feet and personnel entry required, has air testing been performed?  |  |
|   | <input type="checkbox"/> | <input type="checkbox"/> | Excavation sides treated to prevent cave-in?  |  |
| Energy Isolation                                      | <input type="checkbox"/> | <input type="checkbox"/> | Single Source Energy Isolation? (List Tag Number on Line 7 of opening section)  |  |
|   | <input type="checkbox"/> | <input type="checkbox"/> | Standard/Mastercard Energy Isolation? (List Tag Numbers/Mastercard Number on Line 7 of opening section)   |  |
|   | <input type="checkbox"/> | <input type="checkbox"/> | Isolation device(s) <input type="checkbox"/> Breakers <input type="checkbox"/> Valve(s) <input type="checkbox"/> Other Listed with: <input type="checkbox"/> Special Instructions <input type="checkbox"/> Mastercard |  |
|   | <input type="checkbox"/> | <input type="checkbox"/> | Method of Isolation listed <input type="checkbox"/> In SOP/SMP <input type="checkbox"/> Document In or with: <input type="checkbox"/> Special Instructions <input type="checkbox"/> Mastercard                        |  |
|   | <input type="checkbox"/> | <input type="checkbox"/> | Verified by Method <input type="checkbox"/> VOM <input type="checkbox"/> Gauge <input type="checkbox"/> Other Listed with: <input type="checkbox"/> Special Instructions <input type="checkbox"/> Mastercard          |  |
| PERMIT EXTENSION REQUIREMENTS                         | <input type="checkbox"/> | <input type="checkbox"/> | Extension will only be issued to the original <i>Person Doing Work</i> .  | No change in work scope.   |
|   | <input type="checkbox"/> | <input type="checkbox"/> | Extension to be signed by incoming <i>Issuing Authority</i> and <i>Person Doing Work</i> .  | New Gas Test will be performed.  |
| Designated Worker                                     | Signature                |                          | Time  | Date   |
| <input type="checkbox"/>                              |                          |                          |   |  |

\*Non-Permit Required Confined Space Entry      \*\*Alternate Procedure Permit Required Confined Space Entry

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Figure 8. Form 0162, Hot Work Permit (Page 1)

|   |                    |  |   |
|---|--------------------|--|---|
|    |                    | HOT WORK PERMIT  |   |
| H-  |                    |  |   |
| For work that uses or generates an ignition source or work on energized electrical circuits in Classified Areas. This permit is automatically suspended in the event of a spill of hydrocarbons in the vicinity, or the sounding of the Emergency Alarm until <i>All Clear</i> is announced. This permit may be cancelled by anyone. <b>RETURN THIS PERMIT TO ISSUING AUTHORITY WHEN WORK IS COMPLETE, OR BY THE END OF THE SHIFT, WHICHEVER COMES FIRST.</b> |                    |  |   |
| Permit Initiator/Company:   |                    | Person Doing Work:   | Date:                                     |
| Specific Location/Equipment:  |                    | Phone/Radio/Pager #:   | Estimated # of Workers:                   |
| Work Description:   |                    | Time Start:  |   |
|   |                    | Time End:  |   |
| Procedure #:  |                    | Work Order #:  |   |
| HOT WORK PERMIT ITEMS TO CONSIDER (Checked boxes must have associated review on page 2)   |                    |  |   |
| <input type="checkbox"/> Cutting, Grinding, Welding in Classified Areas   |                    | <input type="checkbox"/> Energized Electrical Circuits in Classified Areas | <input type="checkbox"/> Hot Tap          |
| <input type="checkbox"/> Non-Intrinsically Safe Equipment in Classified Areas   |                    | <input type="checkbox"/> Heaters and Other Equipment                       | <input type="checkbox"/> Energy Isolation |
| PLEASE CHECK APPROPRIATE RESPONSE   |                    |  |   |
|   |                    | Yes  | No  |
|   |                    | N/A  |   |
| 1. Have affected personnel been briefed on job safety and requirements and on back of permit?   |                    | <input type="checkbox"/>   | <input type="checkbox"/>                  |
| 2. Is this work affected by, or does this work affect, other work or processes? If Yes, describe below  |                    | <input type="checkbox"/>   | <input type="checkbox"/>                  |
| 3. Have fire detection, gas systems, and/or suppression systems been isolated/By-passed? If Yes, describe below.  |                    | <input type="checkbox"/>   | <input type="checkbox"/>                  |
| 4. Could work cause Remote Alarms? If Yes, describe below.  |                    | <input type="checkbox"/>   | <input type="checkbox"/>                  |
| 5. Is equipment monitored or controlled by OCC being taken out of service? If Yes, time OCC notified:   |                    | <input type="checkbox"/>   | <input type="checkbox"/>                  |
| 6. Have Shutdowns been disabled? If Yes, describe below   |                    | <input type="checkbox"/>   | <input type="checkbox"/>                  |
| 7. Is Energy Isolation/Lockout necessary? If Yes, Tag or Mastercard Number:   |                    | <input type="checkbox"/>   | <input type="checkbox"/>                  |
| 8. Has designated fire watch been assigned, with appropriate equipment? List name(s):   |                    | <input type="checkbox"/>   | <input type="checkbox"/>                  |
| Fire Watch Signature: _____ Badge #: _____  |                    |  |   |
| 9. Is Gas Test Required?  |                    | <input type="checkbox"/>   | <input type="checkbox"/>                  |
| 10. Is Continuous Gas Test required?  |                    | <input type="checkbox"/>   | <input type="checkbox"/>                  |
| Initial Gas Test  | % O <sub>2</sub> : | % LEL:   | H <sub>2</sub> S ppm:                     |
|   |                    |  | CO ppm:                                   |
|   |                    |  | THC ppm:                                  |
|   |                    |  | Benzene/Other:                            |
|   |                    |  | Time:                                     |
|   |                    |  | Tester:                                   |
| Extended/Retest Gas Test  | % O <sub>2</sub> : | % LEL:   | H <sub>2</sub> S ppm:                     |
|   |                    |  | CO ppm:                                   |
|   |                    |  | THC ppm:                                  |
|   |                    |  | Benzene/Other:                            |
|   |                    |  | Time:                                     |
|   |                    |  | Tester:                                   |
| SPECIAL INSTRUCTIONS:   |                    | PERMIT AUTHORIZATIONS  |   |
|   |                    | INITIATING SHIFT Signature (Badge # if required)                           |   |
|   |                    | Area Operator: _____ <input type="checkbox"/> Verbally                     |   |
|   |                    | Person Doing the Work: _____   |   |
|   |                    | Issuing Authority: _____   |   |
|   |                    | EXTENDING SHIFT (See page 2, Permit Extension Requirements)                |   |
| Area Operator: _____ <input type="checkbox"/> Verbally  |                    |  |   |
| Person Doing the Work: _____  |                    |  |   |
| Issuing Authority: _____  |                    |  |   |
| PERMIT CLOSEOUT   |                    |  |   |
|   |                    | Yes  | No  |
|   |                    | N/A  |   |
| 1. Has the work Area and/or Equipment been cleaned up?  |                    | <input type="checkbox"/>   | <input type="checkbox"/>                  |
| 2. Has the Area Operator been notified?   |                    | <input type="checkbox"/>   | <input type="checkbox"/>                  |
| 3. Post Work Comments:  |                    |  |   |
| 4. Person Doing The Work:   |                    | Time:  | Date:                                     |
| 5. Have other affected areas, e.g. OCC, been notified of status of this permit?   |                    | <input type="checkbox"/>   | <input type="checkbox"/>                  |
| 6. All Isolated, By-Passed, or Shutdown systems returned to normal? If not, Have EIT or EOS logs been updated?  |                    | <input type="checkbox"/>   | <input type="checkbox"/>                  |
| 7. Area Operator/Control Room/SPOC/Issuing Authority or Delegate:   |                    | Time:  | Date:                                     |
| 0162 Rev. 8 (05/07)   |                    |  |   |

Figure 8. Form 0162, Hot Work Permit (Page 2)



# HOT WORK PERMIT

Any Individual may cancel this work permit at any time if they consider conditions or work methods to be unsafe. Anyone Canceling a work permit must:  
a) Inform the person doing the work; b) Remove the site copy of the permit; and c) Return it to the Issuing Authority/SPOC, giving reasons for their actions.

|   | YES   | N/A                      | Hot Work Permit Items To Consider   |
|---|---|--------------------------|---|
|   |   |                          | <b>H-</b>   |
| Cutting, Grinding, Welding in Classified Areas        | <input type="checkbox"/>  | <input type="checkbox"/> | Fire extinguishers present and in required location?  |
|   | <input type="checkbox"/>  | <input type="checkbox"/> | Reviewed SA-38, Requirement 1.19, <i>Welding and Flame Cutting</i> , especially 1.19.6.4, <i>Fire Prevention and Protection</i> ?   |
|   | <input type="checkbox"/>  | <input type="checkbox"/> | Sumps/drains checked and covered within 35'?  |
|   | <input type="checkbox"/>  | <input type="checkbox"/> | Welding screens required?   |
|   | <input type="checkbox"/>  | <input type="checkbox"/> | Proper eye protection?  |
| Non-Intrinsically Safe Equipment in Classified Areas* | <input type="checkbox"/>  | <input type="checkbox"/> | Power tools, cameras, test equipment, vehicles?   |
|   | <input type="checkbox"/>  | <input type="checkbox"/> | Fire Detection/Suppression systems need to be bypassed?   |
| Energized Electrical Circuits in Classified Areas     | <input type="checkbox"/>  | <input type="checkbox"/> | Fire Detection/Suppression systems need to be bypassed?   |
|   | <input type="checkbox"/>  | <input type="checkbox"/> | Visual inspection only?   |
|   | <input type="checkbox"/>  | <input type="checkbox"/> | Testing/Troubleshooting?  |
|   | <input type="checkbox"/>  | <input type="checkbox"/> | Removal/Replacement/Re-work required?   |
| Heaters and Other Equipment                           | <input type="checkbox"/>  | <input type="checkbox"/> | Are heaters and equipment monitoring requirements specified?  |
|   | <input type="checkbox"/>  | <input type="checkbox"/> | Fire extinguishers present and in required locations?   |
|   | <input type="checkbox"/>  | <input type="checkbox"/> | Have Bonding and Grounding requirements been met?   |
| Hot Tap   | <input type="checkbox"/>  | <input type="checkbox"/> | Proper clearance from equipment (cable trays, piping, fuel tanks, etc.)?  |
|   | <input type="checkbox"/>  | <input type="checkbox"/> | Is Hot Tap procedure in place?  |
|   | <input type="checkbox"/>  | <input type="checkbox"/> | Flow level requirements met?  |
|   | <input type="checkbox"/>  | <input type="checkbox"/> | Pressure requirements met?  |
| Energy Isolation                                      | <input type="checkbox"/>  | <input type="checkbox"/> | Is line clearly surveyed/marked for hot tapping?  |
|   | <input type="checkbox"/>  | <input type="checkbox"/> | Reviewed <i>Cutting, Grinding, Welding in Classified Areas</i> checklist?   |
|   | <input type="checkbox"/>  | <input type="checkbox"/> | Single Source Energy Isolation? (List Tag Number on Line 7 of opening section)  |
|   | <input type="checkbox"/>  | <input type="checkbox"/> | Standard/Mastercard Energy Isolation? (List Tag Numbers/Mastercard Number on Line 7 of opening section)   |
|   | <input type="checkbox"/>  | <input type="checkbox"/> | Isolation device(s) <input type="checkbox"/> Breakers <input type="checkbox"/> Valve(s) <input type="checkbox"/> Other Listed with: <input type="checkbox"/> Special Instructions <input type="checkbox"/> Mastercard |
| Management endorsement                                | <input type="checkbox"/>  | <input type="checkbox"/> | Method of Isolation listed <input type="checkbox"/> In SOP/SMP <input type="checkbox"/> Document In or with: <input type="checkbox"/> Special Instructions <input type="checkbox"/> Mastercard                        |
|   | <input type="checkbox"/>  | <input type="checkbox"/> | Verified by Method <input type="checkbox"/> VOM <input type="checkbox"/> Gauge <input type="checkbox"/> Other Listed with: <input type="checkbox"/> Special Instructions <input type="checkbox"/> Mastercard          |
|   | <input type="checkbox"/>  | <input type="checkbox"/> | Contingency Plan ID'd <input type="checkbox"/> In SOP/SMP <input type="checkbox"/> Document In or with: <input type="checkbox"/> Special Instructions <input type="checkbox"/> Mastercard                             |
| PERMIT EXTENSION REQUIREMENTS                         | <input type="checkbox"/> Name: _____ Badge #: _____   |                          |   |
|   | <input type="checkbox"/> 1. Extension will only be issued to the original <i>Person Doing Work</i> .            |                          |   |
|   | <input type="checkbox"/> 2. No change in work scope.  |                          |   |
|   | <input type="checkbox"/> 3. Extension to be signed by incoming <i>Issuing Authority and Person Doing Work</i> . |                          |   |
|   | <input type="checkbox"/> 4. New Gas Test will be performed.   |                          |   |
| Designated Worker                                     | Signature   | Time                     | Date  |
| <input type="checkbox"/>                              |   |                          |   |

**Close Out Permit With Issuing Authority When Work Is Complete**

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Figure 9. Form 3459, Pipeline Work Permit (Page 1)

|  |   |                       |                       |                       |          |          |         |         |         |                          |                    |        |                       |         |          |        |       |         |
|--|---|-----------------------|-----------------------|-----------------------|----------|----------|---------|---------|---------|--------------------------|--------------------|--------|-----------------------|---------|----------|--------|-------|---------|
|  <h1 style="margin: 0;">PIPELINE WORK PERMIT</h1>   |   |                       |                       |                       |          |          |         |         |         |                          |                    |        |                       |         |          |        |       |         |
| <b>PS-</b>   |   |                       |                       |                       |          |          |         |         |         |                          |                    |        |                       |         |          |        |       |         |
| Due to Security concerns, access roads and gates shall be closed and locked. Report any suspicious activity to Security and local Maintenance Coordinator. This permit may be cancelled by anyone at any time.<br><b>RETURN THIS PERMIT TO ISSUING AUTHORITY WHEN WORK IS COMPLETE, OR BY THE PERMIT COMPLETION DATE.</b>  |   |                       |                       |                       |          |          |         |         |         |                          |                    |        |                       |         |          |        |       |         |
| Permit Initiator/Company:  | Person Doing Work: <span style="float: right;">Date:</span>   |                       |                       |                       |          |          |         |         |         |                          |                    |        |                       |         |          |        |       |         |
| Specific Location:   | Phone/Radio/Pager #: <span style="float: right;">Estimated # of Workers:</span>   |                       |                       |                       |          |          |         |         |         |                          |                    |        |                       |         |          |        |       |         |
| Effective From Time: <span style="float: right;">Date:</span>  | Effective to Time: <span style="float: right;">Date:</span> <span style="float: right;">Extended to Time: <span style="float: right;">Date:</span></span>   |                       |                       |                       |          |          |         |         |         |                          |                    |        |                       |         |          |        |       |         |
| Work Description:  |   |                       |                       |                       |          |          |         |         |         |                          |                    |        |                       |         |          |        |       |         |
| Procedure #:   | Work Order #:   |                       |                       |                       |          |          |         |         |         |                          |                    |        |                       |         |          |        |       |         |
| <b>PIPELINE WORK PERMIT ITEMS TO CONSIDER (Checked boxes must have associated review on page 2)</b>  |   |                       |                       |                       |          |          |         |         |         |                          |                    |        |                       |         |          |        |       |         |
| <input type="checkbox"/> Confined Space Entry <input type="checkbox"/> Utility Locate Required <input type="checkbox"/> Radiography and/or Pressure Testing<br><input type="checkbox"/> Cutting, Grinding, Welding in Non-Classified Areas <input type="checkbox"/> Required Agency Permits <input type="checkbox"/> MC/Alyeska Representative Required On Site<br><input type="checkbox"/> Mining and/or Mineral Materials Required <input type="checkbox"/> Excavation <input type="checkbox"/> Notification to OCC, U/S, D/S Pump Stations Required |   |                       |                       |                       |          |          |         |         |         |                          |                    |        |                       |         |          |        |       |         |
| <b>PLEASE CHECK APPROPRIATE RESPONSE</b>   |   |                       |                       |                       |          |          |         |         |         |                          |                    |        |                       |         |          |        |       |         |
|  | Yes    No    N/A  |                       |                       |                       |          |          |         |         |         |                          |                    |        |                       |         |          |        |       |         |
| 1. Have affected personnel been briefed on job safety and requirements and on back of permit?  | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>  |                       |                       |                       |          |          |         |         |         |                          |                    |        |                       |         |          |        |       |         |
| 2. Is this work affected by, or does this work affect, other work or processes? If Yes, describe below   | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>  |                       |                       |                       |          |          |         |         |         |                          |                    |        |                       |         |          |        |       |         |
| 3. Is Energy Isolation/Lockout necessary? If Yes, Tag or Mastercard Number:  | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>  |                       |                       |                       |          |          |         |         |         |                          |                    |        |                       |         |          |        |       |         |
| 4. Has Person Doing Work been informed of the need to avoid damage to all survey monuments/markers? Immediately report any damage (pre-existing or otherwise) to the local MC.   | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>  |                       |                       |                       |          |          |         |         |         |                          |                    |        |                       |         |          |        |       |         |
| 5. Are Other Work Permits required? If Yes, list:  | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>  |                       |                       |                       |          |          |         |         |         |                          |                    |        |                       |         |          |        |       |         |
| 6. Have Environmental Hazards been identified and mitigated (e.g., Avalanche, Mudslide, Slope Instability, Cut Bank)?  | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>  |                       |                       |                       |          |          |         |         |         |                          |                    |        |                       |         |          |        |       |         |
| 7. Does the work require brush cutting? If Yes, refer to SA-38, Brush Cutting, and MR-48, Workpad and Access Roads.  | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>  |                       |                       |                       |          |          |         |         |         |                          |                    |        |                       |         |          |        |       |         |
| 8. Will the work require excavation dewatering? If Yes, refer to ED-108, Excavation Dewatering (complete Form 3556).   | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>  |                       |                       |                       |          |          |         |         |         |                          |                    |        |                       |         |          |        |       |         |
| 9. Will the work be over or near water? If Yes, refer to SA-38, Personal Flotation Devices, for requirements.  | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>  |                       |                       |                       |          |          |         |         |         |                          |                    |        |                       |         |          |        |       |         |
| 10. Will the work require the use of an All Terrain Vehicle (ATV)? If Yes, refer to SA-38, All Terrain Vehicles, for requirements.   | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>  |                       |                       |                       |          |          |         |         |         |                          |                    |        |                       |         |          |        |       |         |
| 11. Will the work require secondary containment dewatering (i.e., Mainline Vaults, Fuel Gas Line Manhole)? If Yes, refer to EN-43-004, Wastewater Discharges (complete Form 3729, Secondary Containment Water Discharge Report).   | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>  |                       |                       |                       |          |          |         |         |         |                          |                    |        |                       |         |          |        |       |         |
| 12. Will in-stream/bank work be required at a Pipeline, Access, or Workpad Bridge? If Yes, contact Environment or Lands Depts for permits. Contact Systems Integrity if the posted weight limit on Access or Workpad Bridge could be exceeded.   | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>  |                       |                       |                       |          |          |         |         |         |                          |                    |        |                       |         |          |        |       |         |
| 13. Is Gas Test Required?  | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>  |                       |                       |                       |          |          |         |         |         |                          |                    |        |                       |         |          |        |       |         |
| 14. Is Continuous Gas Test required?   | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>  |                       |                       |                       |          |          |         |         |         |                          |                    |        |                       |         |          |        |       |         |
| Initial Gas Test   | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>% O<sub>2</sub>:</td> <td>% LEL:</td> <td>H<sub>2</sub>S ppm:</td> <td>CO ppm:</td> <td>THC ppm:</td> <td>Other:</td> <td>Time:</td> <td>Tester:</td> </tr> <tr> <td>Extended/Retest Gas Test</td> <td>% O<sub>2</sub>:</td> <td>% LEL:</td> <td>H<sub>2</sub>S ppm:</td> <td>CO ppm:</td> <td>THC ppm:</td> <td>Other:</td> <td>Time:</td> <td>Tester:</td> </tr> </table> | % O <sub>2</sub> :    | % LEL:                | H <sub>2</sub> S ppm: | CO ppm:  | THC ppm: | Other:  | Time:   | Tester: | Extended/Retest Gas Test | % O <sub>2</sub> : | % LEL: | H <sub>2</sub> S ppm: | CO ppm: | THC ppm: | Other: | Time: | Tester: |
| % O <sub>2</sub> :   | % LEL:  | H <sub>2</sub> S ppm: | CO ppm:               | THC ppm:              | Other:   | Time:    | Tester: |         |         |                          |                    |        |                       |         |          |        |       |         |
| Extended/Retest Gas Test   | % O <sub>2</sub> :  | % LEL:                | H <sub>2</sub> S ppm: | CO ppm:               | THC ppm: | Other:   | Time:   | Tester: |         |                          |                    |        |                       |         |          |        |       |         |
| SPECIAL INSTRUCTIONS:  | <b>PERMIT AUTHORIZATIONS</b>  |                       |                       |                       |          |          |         |         |         |                          |                    |        |                       |         |          |        |       |         |
|  | INITIATING SHIFT Signature (Badge # if required)  |                       |                       |                       |          |          |         |         |         |                          |                    |        |                       |         |          |        |       |         |
|  | Person Doing the Work: <input type="checkbox"/> Verbally  |                       |                       |                       |          |          |         |         |         |                          |                    |        |                       |         |          |        |       |         |
|  | Issuing Authority:  |                       |                       |                       |          |          |         |         |         |                          |                    |        |                       |         |          |        |       |         |
| SPECIAL INSTRUCTIONS:  | EXTENDING SHIFT (See page 2, Permit Extension Requirements)   |                       |                       |                       |          |          |         |         |         |                          |                    |        |                       |         |          |        |       |         |
|  | Person Doing the Work: <input type="checkbox"/> Verbally  |                       |                       |                       |          |          |         |         |         |                          |                    |        |                       |         |          |        |       |         |
| SPECIAL INSTRUCTIONS:  | Issuing Authority:  |                       |                       |                       |          |          |         |         |         |                          |                    |        |                       |         |          |        |       |         |
|  |   |                       |                       |                       |          |          |         |         |         |                          |                    |        |                       |         |          |        |       |         |
| <b>PERMIT CLOSEOUT</b>   |   |                       |                       |                       |          |          |         |         |         |                          |                    |        |                       |         |          |        |       |         |
|  | Yes    No    N/A  |                       |                       |                       |          |          |         |         |         |                          |                    |        |                       |         |          |        |       |         |
| 1. Has the work Area and/or Equipment been cleaned up?   | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>  |                       |                       |                       |          |          |         |         |         |                          |                    |        |                       |         |          |        |       |         |
| 2. Isolated/By-passed Shutdown systems returned to normal?   | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>  |                       |                       |                       |          |          |         |         |         |                          |                    |        |                       |         |          |        |       |         |
| 3. Have other affected areas, e.g., OCC, been notified of status of this permit?   | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>  |                       |                       |                       |          |          |         |         |         |                          |                    |        |                       |         |          |        |       |         |
| 4. Post Work Comments:   |   |                       |                       |                       |          |          |         |         |         |                          |                    |        |                       |         |          |        |       |         |
| 5. Person Doing The Work:  | Time: <span style="float: right;">Date:</span>  |                       |                       |                       |          |          |         |         |         |                          |                    |        |                       |         |          |        |       |         |
| 6. Issuing Authority:  | Time: <span style="float: right;">Date:</span>  |                       |                       |                       |          |          |         |         |         |                          |                    |        |                       |         |          |        |       |         |

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Figure 9. Form 3459, Pipeline Work Permit (Page 2)



# PIPELINE WORK PERMIT

Any Individual may cancel this work permit at any time if they consider conditions or work methods to be unsafe. Anyone Canceling a work permit must: a) Inform the person doing the work; b) Remove the site copy of the permit; and c) Return it to the Issuing Authority/SPOC, giving reasons for their actions.

|   | YES                      | N/A                                | Pipeline Work Permit Items To Consider  |
|---|--------------------------|------------------------------------|---|
| Confined Space Entry  | <input type="checkbox"/> | <input type="checkbox"/>           | Has a reclassification been certified & signed for Non-Permit Required Confined Space? (see attached form)  |
|   | <input type="checkbox"/> | <input type="checkbox"/>           | Does work require Permit-Required Confined Space (PRCS) or PRCS Using Alternate Entry Procedures? If Yes, obtain Confined Space Entry Permit.   |
|   | <input type="checkbox"/> | <input type="checkbox"/>           | Have the affected employees been trained in compliance with 29 CFR 1910.146?  |
| Cutting, Grinding, Welding in Non-Classified Areas  | <input type="checkbox"/> | <input type="checkbox"/>           | Fire extinguishers present and in required location?  |
|   | <input type="checkbox"/> | <input type="checkbox"/>           | Combustible materials removed/covered within 35'?   |
|   | <input type="checkbox"/> | <input type="checkbox"/>           | Proper eye protection and other Personal Protective Equipment addressed?  |
|   | <input type="checkbox"/> | <input type="checkbox"/>           | Is a welding procedure required?  |
| Mining and/or Mineral Materials Required  | <input type="checkbox"/> | <input type="checkbox"/>           | Has a Fire Watch been assigned? (Name)  |
|   | <input type="checkbox"/> | <input type="checkbox"/>           | Will mined materials be hauled from an Operations Material Site? If Yes, complete Form 10164, Daily Mineral Material Hauling Voucher.   |
| Utility Locate Required (refer to MR-48, Pre-Excavation Activities, or FG-78, Excavation Safety)  | <input type="checkbox"/> | <input type="checkbox"/>           | Will blasting be required? If Yes, refer to Master Specification C-415, Blasting Restrictions Near the Trans-Alaska Pipeline System.  |
|   | <input type="checkbox"/> | <input type="checkbox"/>           | Is work performed in the vicinity of the fiber optics cable (FOC)? If Yes, contact GCI, 1-888-560-2022 for locate.  |
|   | <input type="checkbox"/> | <input type="checkbox"/>           | Is work performed in the vicinity of cathodic protection systems? If Yes, contact Systems Integrity and complete Form 2353, Rectifier Service Record, to document any maintenance, repairs, or other service interruptions.<br><b>NOTE:</b> If excavation is in the direct influence of Enhanced Cathodic Protection, care should be taken to ensure that the rectifier(s) are shut off and tagged out until such time as the excavation is closed. |
| Required Agency Permits   | <input type="checkbox"/> | <input type="checkbox"/>           | Is third party Utility Locate required?   |
|   | <input type="checkbox"/> | <input type="checkbox"/>           | Is a copy of the agency permit posted at job site as required by issuing agency?  |
| Excavation (refer to SA-38, Excavation Safety, or FG-78, Excavation Safety)   | <input type="checkbox"/> | <input type="checkbox"/>           | Has 3-day notification been made to ADF&G for maintenance work on low water crossings/culverts in fish streams?   |
|   | <input type="checkbox"/> | <input type="checkbox"/>           | Is the excavation over 4 feet in depth? If Yes, attach Form 2268, Excavation Plan, completed by a Competent Person.   |
|   | <input type="checkbox"/> | <input type="checkbox"/>           | Where applicable, has competent person reviewed plan and inspected excavation?  |
|   | <input type="checkbox"/> | <input type="checkbox"/>           | When deeper than four feet and personnel entry required, has air testing been performed?  |
|   | <input type="checkbox"/> | <input type="checkbox"/>           | Is a survey required?   |
|   | <input type="checkbox"/> | <input type="checkbox"/>           | Surveyors required on-site?   |
| Radiography   | <input type="checkbox"/> | <input type="checkbox"/>           | Have underground utilities been identified and marked?  |
|   | <input type="checkbox"/> | <input type="checkbox"/>           | Dewatering: If NOD required, has ADEC pre-notification been identified and marked?  |
|   | <input type="checkbox"/> | <input type="checkbox"/>           | Warning signs/lights/ropes?   |
|   | <input type="checkbox"/> | <input type="checkbox"/>           | Safe operating limits delineated?   |
|   | <input type="checkbox"/> | <input type="checkbox"/>           | UV/detection/suppression systems by-passed if necessary?  |
| MC/Alyeska Representative Required On Site  | <input type="checkbox"/> | <input type="checkbox"/>           | Notification of personnel in test area?   |
|   | <input type="checkbox"/> | <input type="checkbox"/>           | Pressure Testing  |
|   | <input type="checkbox"/> | <input type="checkbox"/>           | Is the area posted?   |
|   | <input type="checkbox"/> | <input type="checkbox"/>           | Is the Testing Procedure in place?  |
| Notification to OCC, U/S, D/S Pump Stations Required  | <input type="checkbox"/> | <input type="checkbox"/>           | Notification of personnel in test area?   |
|   | <input type="checkbox"/> | <input type="checkbox"/>           | Has Spill Response been addressed?  |
|   | <input type="checkbox"/> | <input type="checkbox"/>           | Is a Mainline Valve movement required? If Yes, Maintenance Coordinator or designee required on site.  |
| PERMIT EXTENSION REQUIREMENTS   | <input type="checkbox"/> | <input type="checkbox"/>           | Is On-Site Construction Management required per MR-48? If Yes, Maintenance Coordinator or designee, Project, or Baseline Superintendent is required on site.  |
|   | <input type="checkbox"/> | <input type="checkbox"/>           | Are tapping or stopple plugging/retracting operations being performed? If Yes, Alyeska Rep is required on site.   |
|   |                          |                                    | Does the work require Priority 1 Work or Mainline Valve movement? If Yes, notify OCC, Upstream and Downstream pump stations prior to and after completion of work.  |
| 1. Extension will only be issued to the original Person Doing Work.   |                          | 2. No change in work scope.        |   |
| 3. Extension to be signed by incoming Issuing Authority and Person Doing Work.  |                          | 4. New Gas Test will be performed. |   |
| <b>RULES</b>  |                          |                                    |   |
| <p>Rules are designed to protect personnel, the environment, the pipeline and equipment.</p> <p>Maintain 15' travel distance from VSMs when snow conceals the driveline. If a vehicle or equipment leaves the workpad, notify the MC if recovery action is over undisturbed ground.</p> <p>Do not back up toward the above or below ground pipe.</p> <p>If 18" of clearance cannot be maintained when working around the above ground pipe or support assemblies, use of a spotter is required.</p> <p>Never drive onto or over B/G animal crossings without Engineering approval.</p> <p>Notify the MC of any accidents, incidents, or spills as soon as possible.</p> <p>Driving around gates or headache bars is prohibited except for off-road reconnaissance vehicles with a Winter Only Off-ROW Access Permit.</p>      |                          |                                    |   |
| <b>GUIDELINES</b>   |                          |                                    |   |
| <p>Guidelines are aids in the safe and productive use of the workpad.</p> <p>Workpad travel speed should not exceed 25 MPH; conditions may require further speed reduction (i.e. LWCs, bridges, and auleis).</p> <p>Check ice thickness if water depth is unknown at low water crossings.</p> <p>Travel across Transverse levees (water bars) in the driveline; otherwise damage may result from high-centering vehicle or equipment.</p> <p>Winter reconnaissance vehicles may drive around workpad blockpoints while the Winter Only Off-ROW Access Permit (maximum ¼ mile from pipeline) is in effect. Caution should be taken if crossing heavily armored blockpoints.</p> <p>Driveline or track damage may occur when Tuckers are moved after breaking through ice and the tracks become hooked under the ice shell.</p> |                          |                                    |   |
| <b>Close Out Permit With Issuing Authority When Work Is Complete!</b>   |                          |                                    |   |

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## 2.1 Portable Industrial Heaters

### 2.1.1 Purpose

This requirement has been established to provide instructions and information for the safe operation of portable industrial heaters.

### 2.1.2 References

- 29 CFR 1926.151, "Fire Prevention"

### 2.1.3 Responsibilities

Managers and supervisors of activities utilizing portable industrial heaters are responsible for compliance with this requirement.

### 2.1.4 Requirements

#### 2.1.4.1 Fire Watch

A dedicated Fire Watch shall be required,

1. In a classified area when operating standing equipment such as heaters, hot water or steam pressure washers.
2. In a non-classified area:
  - a. Whenever operating standing equipment such as heaters,
  - b. **AND** any of the following conditions exist:
    - 1) Appreciable amounts of combustible materials (e.g., building materials) closer than 35 feet away from the point of operation.
    - 2) Appreciable amounts of combustibles which can be easily ignited by sparks.
    - 3) Hot Work - A fire watch must be maintained by a minimum of **thirty (30) minutes** after completion of hot work to detect and extinguish smoldering fires.

##### 2.1.4.1.1 Fire Watch Duties

The Fire Watch is a dedicated individual whose sole function is to perform fire watch duties.

#### NOTE

More than one fire watch shall be required if combustible materials that could be ignited by the hot work operation cannot be directly observed by a single fire watch (e.g., in adjacent rooms where hot work is done on a common wall; multiple floors, in a tank farm where Fire Watch cannot see all equipment from where they are positioned).

The Fire Watch will not perform any other duties that will take their attention away from the area where the hot work is performed. Fire Watch must:

1. Ensure that safe conditions are maintained during the hot work by monitoring conditions to ensure that a fire or explosion does not occur as a result of the work being performed.

2. Inspect area of responsibility to ensure there are no leaks or spills from equipment.
3. Be aware of the inherent hazards involved in hot work and ensure that no condition arises, or actions taken, that will lead to a hazardous situation in the hot work area.
4. Keep at least (2) 20-lb. ABC fire extinguishers at the hot work location.
5. Have means of emergency communication (two-way radio) to report a fire or other emergency.
6. Know the facility protocol to report a fire or other emergency situations.
7. Be familiar with the surrounding facilities to sound an alarm in the event of a fire.
8. Be trained in the facility fire safety procedures and the use of fire extinguishing equipment to extinguish fires only when safe to do so.
9. Remain in a location that allows immediate communication with the individual(s) performing hot work for instant communication if a fire breaks out.
10. Watch for fires in all exposed areas for a minimum of thirty (30) minutes (including lunch and break times) after hot work is completed.
11. Be trained to shut down equipment in case of fire or emergency.

**NOTE**

Due to the complexity of the work or project (i.e., various types of work - classified and non-classified, size of work site, multiple locations, etc.), more than one Fire Watch and Equipment Watch(s) may be required.

#### **2.1.4.2 Equipment Watch**

An Equipment Watch(s) is required in a non-classified area when operating standing equipment such as portable heaters.

##### **2.1.4.2.1 Equipment Watch Duties**

1. Ensure safe conditions and good house-keeping are maintained.
2. Inspect area of responsibility to ensure equipment has required drip pans, no leaks or spills.
3. Know the facility protocol to report emergency situations.
4. Have means of emergency communication (two-way radio).
5. Be trained to shut down equipment in case of emergency.

#### **2.1.4.3 Heaters**

1. Only kerosene, #1 fuel oil, LPG/catalytic heaters, or gasoline-fueled fresh air heaters will be allowed for use in Alyeska facilities.
2. A *Hot Work Permit, Form 0162* is required for operation of all portable heater applications within 50 feet of a classified area or other areas as identified by facility supervision.
3. Heaters will not be operated within 50 feet of a classified area unless their operations are continuously monitored by a dedicated Fire Watch. Heaters operated outside the 50 foot radius described above shall be operated with *Form 0161, Unit Work Permit*, and no special visual inspection or monitoring is required unless specified in the special instructions of the work permit or work plan.

4. Heaters in operation will be kept level, stable, and set on noncombustible material. Wheeled heaters must have tires chocked.
5. Heaters will not be allowed to operate in or under buildings. Heat will be directed to desired location in or under a building by a fire-resistive duct.
6. Heated areas will be adequately ventilated and tested to prevent carbon monoxide or oxygen deficiency buildup. Indirect fired heaters should be used to heat space which may be occupied by personnel.
7. Heaters will not be operated in the presence of volatile fumes.
8. No combustible material (wood, paper, Visqueen, etc.) will be allowed within 10 feet of any heater. No similar materials will be allowed within 10 feet of the heater outlet. Tarps, canvas, Visqueen, or similar coverings will be secured to prevent the wind from blowing them against the heater, heater outlet, or inlet.
9. Two 20-lb. dry chemical extinguisher will be located not more than 50 feet nor closer than 10 feet from the operating heater. Fire extinguishers are to be provided on a ratio of one to every two operating heaters.
10. Heaters will be shut down and allowed to cool before refueling.

**NOTE**

600K Btu and higher heaters may be left running while refueling.

11. Heater refueling will be done with a properly marked, approved, safety can and fuel storage areas will be kept at least 15 feet from heater location.

**NOTE**

600K Btu and higher heaters will be fueled by a spreader truck.

12. Heater air inlet and discharge areas will be kept away from obstructions that would hinder the free flow of air into and out of the heater.
13. Fire resistive ducts should be of the flexible mat type. However, where metal ducting is used, care must be taken to maintain an 18-inch clearance when penetrating a combustible wall.
14. Oil-fired heaters shall be equipped with a safety control to stop fuel flow in case of flame failure.
15. Fire ducts and insulation material must not contain asbestos in any form.
16. Portable industrial heaters must be kept 15 feet from any combustible structure (e.g., trailer, building, shack, etc.).
17. Portable industrial heaters must be kept 25 feet from any oil, gas, or electric process facilities.

### 2.1.5 Definitions

N/A

### 2.1.6 Training

Fire watch must be trained as a fire watch and have fire extinguisher training.

## 2.1.7 Records

For record retention requirements, see the *Records Retention Schedule* located under Resources\Records\Records Retention Schedule on the A-Net.

**PROBABLE VIOLATION 10:  
Maps and Records**

**PHMSA POSITION**

**Pertinent Regulation:**

49 CFR §195.404 Maps and Records

- (a) Each operator shall maintain current maps and records of its pipeline systems that include at least the following information:
  - (vii) Safety devices to which §195.428 applies.

**Findings:** Alyeska failed to indicate the correct configuration of certain double block and bleed service valves as required by §195.404. The P&ID (Piping & Instrument Drawing) D-39-M1/M201 R23H for Pump Station 9 did not show the double block and bleed service valve configuration for PIT 902R, 905AR, and 905BR as these valves are actually installed.

**Warning:** With respect to Item 10, we have reviewed the circumstances and supporting documents involved in this case and have decided not to conduct additional enforcement action or penalty assessment proceedings at this time. Alyeska is advised to promptly correct these items. Failure to do so may result in Alyeska being subject to additional enforcement action.

**ALYESKA PIPELINE SERVICE COMPANY'S RESPONSE**

**Summary:**

Alyeska Pipeline Service Company (Alyeska) respectfully disagrees with PHMSA's finding that Alyeska failed to indicate the correct configuration of double block and bleed service valves on D-39-M1/M201 R23H. Alyeska requests that the finding be withdrawn.

**Discussion:**

The Piping & Instrument Drawing (P&ID) D-39-M1/M201 R23H was Issued for Review (IFR) as shown in the revision block of the drawing. (See Exhibit 31). IFR drawings are issued for review and comment prior to construction. IFR drawings should not be used for verifying installed equipment as they are not yet final.

Even in review status, the double block and bleed service valves are indicated on the drawing. The symbol used by the Strategic Reconfiguration project, i.e. ½" needle valve with a ½" needle bleed valve, indicates PIT 902R, 905AR, and 905BR

NOPV CPF 5-2007-5041  
Finding No. 10: Maps and Records  
2/26/08

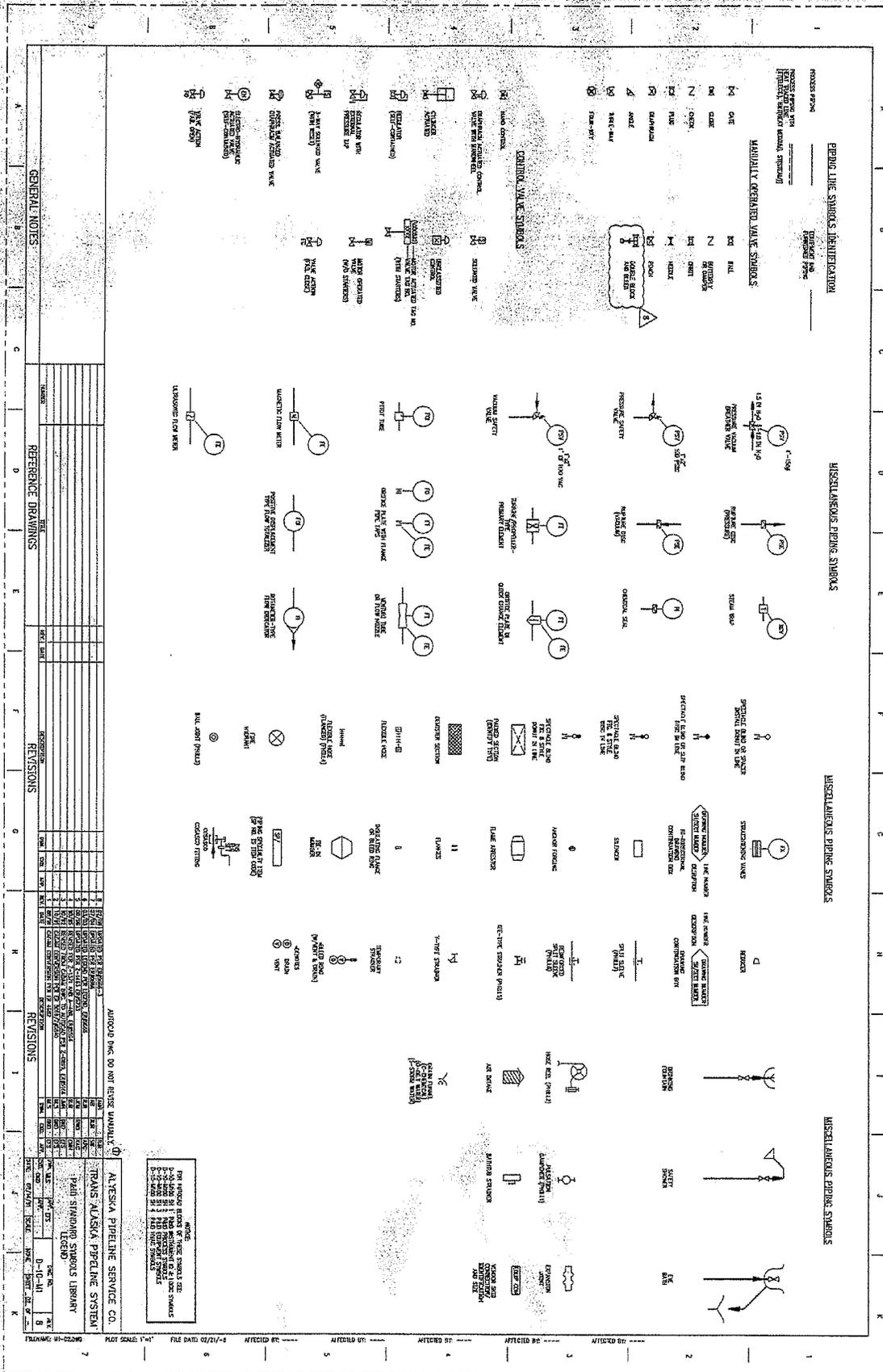
In the future, Alyeska will use a new symbol which has been created to be graphically similar to the physical configuration of a double block and bleed valve. (See Exhibit 32). The symbol has been added to the Alyeska drawing symbol library for future use.

With regard to Finding 10, Alyeska respectfully requests that the finding be withdrawn.

**SUPPORTING DOCUMENTATION**

Exhibit 31 -- Piping & Instrument Drawing (P&ID) D-39-M1/M201 R23H, sheet 1  
Exhibit 32 -- Piping & Instrument Drawing (P&ID) Symbols Library Legend D-10-M1  
R8, sheet 2





**GENERAL NOTES:**

1. ALL SYMBOLS ARE TO BE USED IN ACCORDANCE WITH THE AMERICAN PIPELINE ASSOCIATION (APA) STANDARD SYMBOLS FOR PIPELINE SYSTEMS.

2. THE SYMBOLS FOR VALVES AND PUMPS ARE TO BE USED IN ACCORDANCE WITH THE AMERICAN PIPELINE ASSOCIATION (APA) STANDARD SYMBOLS FOR PIPELINE SYSTEMS.

3. THE SYMBOLS FOR MISCELLANEOUS PIPELINE SYMBOLS ARE TO BE USED IN ACCORDANCE WITH THE AMERICAN PIPELINE ASSOCIATION (APA) STANDARD SYMBOLS FOR PIPELINE SYSTEMS.

**REFERENCE DRAWINGS:**

| NO. | DESCRIPTION | DATE |
|-----|-------------|------|
| 1   | ...         | ...  |
| 2   | ...         | ...  |
| 3   | ...         | ...  |
| 4   | ...         | ...  |
| 5   | ...         | ...  |
| 6   | ...         | ...  |
| 7   | ...         | ...  |

**REVISIONS:**

| NO. | DESCRIPTION | DATE |
|-----|-------------|------|
| 1   | ...         | ...  |
| 2   | ...         | ...  |
| 3   | ...         | ...  |
| 4   | ...         | ...  |
| 5   | ...         | ...  |
| 6   | ...         | ...  |
| 7   | ...         | ...  |

**ALYESKA PIPELINE SERVICE CO.**  
**TRANS ALASKA PIPELINE SYSTEM**  
**PIPELINE SYMBOLS LIBRARY**  
**LEADER**

DATE: 01-10-11  
 DRAWN BY: [Name]  
 CHECKED BY: [Name]

**NOTES:**

1. ALL SYMBOLS ARE TO BE USED IN ACCORDANCE WITH THE AMERICAN PIPELINE ASSOCIATION (APA) STANDARD SYMBOLS FOR PIPELINE SYSTEMS.

2. THE SYMBOLS FOR VALVES AND PUMPS ARE TO BE USED IN ACCORDANCE WITH THE AMERICAN PIPELINE ASSOCIATION (APA) STANDARD SYMBOLS FOR PIPELINE SYSTEMS.

3. THE SYMBOLS FOR MISCELLANEOUS PIPELINE SYMBOLS ARE TO BE USED IN ACCORDANCE WITH THE AMERICAN PIPELINE ASSOCIATION (APA) STANDARD SYMBOLS FOR PIPELINE SYSTEMS.

**PROBABLE VIOLATION 11:  
Pumping Equipment**

**PHMSA POSITION**

**Pertinent Regulation:**

49 CFR §195.262 Pumping Equipment

- (b) The following must be provided in each pump station:
  - (1) Safety devices that prevent overpressuring of pumping equipment, including the auxiliary pumping equipment within the pumping station.

**Findings:** Alyeska failed to provide safety devices to prevent overpressuring of pumping equipment as required by §195.262. Alyeska did not provide operation alarms that would indicate that a relief valve had failed to open when a relief set-point had been reached. Alyeska's current operational alarms provide warnings that a relief set-point is being approached or that relief is occurring; however there are no alarms that would indicate that a relief set-point had been reached but a relief valve had failed to open.

**Warning:** With respect to Item 11, we have reviewed the circumstances and supporting documents involved in this case and have decided not to conduct additional enforcement action or penalty assessment proceedings at this time. Alyeska is advised to promptly correct these items. Failure to do so may result in Alyeska being subject to additional enforcement action.

**ALYESKA PIPELINE SERVICE COMPANY'S RESPONSE**

**Summary:**

Alyeska Pipeline Service Company (Alyeska) respectfully disagrees with PHMSA's finding that Alyeska failed to provide safety devices to prevent overpressuring of pumping equipment per §195.262. Alyeska requests that the finding be withdrawn.

**Discussion:**

Section 195.262 requires safety devices that prevent overpressuring of pumping equipment and auxiliary pumping equipment within the pumping station. Alyeska has several levels of overpressure protection as required by §195.262 and believes adding an alarm in addition to the audio and visual indications already received in the Operations Control Center (OCC) during a pipeline pressure relief event would be redundant.

Alyeska has several safety devices that prevent overpressuring of pumping equipment including the auxiliary pumping equipment within the pumping station. The devices are described in sections 2.1.12.1.1 and 2.1.12.1.2 of DO-14-2-SR, Trans-Alaska Pipeline System Controller Operating Manual (SR) (see Exhibit 33) and summarized below. Setpoints for these controllers are listed in OCC-3.01-SR, Pressure Controller Setpoints. (See Exhibit 34).

| Device            | Purpose  |
|-------------------|--|
| PIC-X01, X02, 549 | The pressure indicating speed loop controller for station X. "01" is for suction control and "02" is for discharge control. 549 is for PS 5 injection pump discharge control.  |
| PIC-X03           | The surge controller that monitors the change of suction pressure with respect to time and a fixed set point. It is calibrated to open the suction relief valves if a pressure rise of 75 psi in five seconds or less is detected. |
| PIC-X04, X05      | The pressure indicating relief controller for station X. "04" is for suction relief and "05" is discharge relief.  |
| PSH-X04, X05      | The pressure switch high instrument for Station X. "04" is for suction high pressure relief and "05" is for discharge high pressure station shutdown.  |
| PAHH-X04, X05     | The SIPPS pressure alarm high high for station X. "04" is for suction high pressure relief switch and "05" is for discharge high pressure station shutdown.  |

The first level of overpressure protection is provided by the PIC-X01, X02, and 549 pressure control loops. Under normal operating conditions, the mainline units are controlled on either suction or discharge pressure. When the flow through any of the mainline pumps exceeds maximum safe operating conditions, the flow controller overrides the pressure controller to limit flow to the units defined by the pump curves. The transient conditions under which the flow controller will take control are on loss of a mainline unit or during a pipeline restart.

The next level of overpressure protection is provided by the PIC-X04 and X05 pressure controllers. They signal their respective (suction or discharge) relief valves to open as necessary to keep the pressure from exceeding the relief set point pressure.

In addition, PIC-X03 is a surge controller that monitors the change of suction pressure with respect to time and a fixed set point. It is calibrated to open the suction relief valves if a pressure rise of 75 psi in five seconds or less is detected.

Finally, PSH-X04 and X05 (legacy stations) and PAHH-X04 and X05 (SR stations) signal their respective (suction or discharge) relief valves to open (if they weren't already opened by PIC-X04 and X05). PSH-X05 and PAHH-X05 also initiate a station shutdown command which shuts down the mainline pumps.

The OCC receives an audible alarm accompanied by a line item appearing on the alarm viewer whenever any of the above overpressure protection actions are initiated. Visual indication of the relief valves opening is provided by a color change of the relief valve(s) (from green to red) and the crude oil flow path from the relief valves to the crude oil relief tank (from grey to blue) on the pipeline controller's graphical display(s) in the OCC. If the relief valves do not open, their status would remain unchanged on the

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graphical display, thereby providing an indication that the relief valves failed to open when the relief setpoint was reached. If the relief valves fail to open when commanded, the pipeline controller executes the instructions in OCC-6.02-SR, "Relief Valves Failed to Open at Setpoint (Abnormal Operating Procedure) (SR). (See Exhibit 35).

With regard to Finding 11, Alyeska respectfully requests that the finding be withdrawn because Alyeska provides for safety devices required by §195.262.

### **SUPPORTING DOCUMENTATION**

Exhibit 33 – DO-14-2-SR, "Trans-Alaska Pipeline System Controller Operating Manual (SR), Section 2.1.12.1.1 and Section 2.1.12.1.2

Exhibit 34 – OCC-3.01-SR, "Pressure Controller Setpoints"

Exhibit 35 – OCC-6.02-SR, "Relief Valves Failed to Open at Setpoint (Abnormal Operating Procedure) (SR)

- Pressure switches will fully open the relief valves if the controllers fail to regulate the pressure, because these switches are set above the controller set points

### 2.1.12.1 Instrumentation

Each pump station, except PS07, has a Westinghouse Electric station controller which senses the suction pressure set point and is equipped with a discharge pressure set point override. PS07 has an Eptak analog microprocessor, which performs the same function. The primary purposes of this equipment are:

- To prevent the station suction pressure from falling below a preset limit, allowing cavitation of the pumping units and possible pump damage.
- To prevent the station discharge from exceeding safe operating pressure limits as established by the design engineers.

The Westinghouse controller and Eptak microprocessor function to hold these particular pressure limits by initiating commands to the Woodward electronic governor that governs the speed of the gas-turbine-driven mainline pumps. The governor can throttle the units to a complete idle, depending upon the pressure flow conditions through the station.

Each controller in the system has an adjustable rate-of-change limiter for the set point value (whether set remotely or locally). This feature functions to limit any rate of change in an overriding signal which in turn is regulating main pump speeds. By limiting abrupt changes in the pump speeds, the possibility of causing a resultant pressure surge within the Pipeline is minimized.

Whenever one of the controllers is placed on local automatic or local manual, the remote set point capabilities will be disabled. A STATION LOCAL alarm will be transmitted to the OCC to alert the controller. A similar alarm will be actuated on the station annunciator.

If the controllers fail to govern the turbine speed upon reaching the discharge or suction controller set point, each station is equipped with spring-loaded, diaphragm-activated, snap switches which automatically shut down the station if the discharge pressure reaches a predetermined setting. In addition, each station is equipped with both suction and discharge pressure relief systems that will relieve into the crude oil tankage, when predetermined set points are reached. These instruments are discussed in more detail in the following sections.

The Pipeline Controller has the responsibility for setting the suction and discharge pressure set points according to DOP *OCC-3.01, Pressure Controller Set Points (ATB 052)*.

#### 2.1.12.1.1 Suction Relief Instrumentation

The suction pressure is monitored by two controllers and a Solon pressure switch. The suction relief valve may be opened by either of the controllers or the pressure switch.

The controlling suction pressure is sensed from a connection on the suction side of the mainline pipe.

The PIC-X03 surge controller monitors the change of suction pressure with respect to time and a fixed set point. It actuates the suction relief valves at the station if an increase in pressure occurs faster than the rate-of-rise value set for the controller. The controller has a floating bias above the suction pressure and reacts only to a rate-of-change in pressure, not a specific pressure set point. PIC-X03 is adjusted internally and is located on the station control panel. It is calibrated so a pressure rise of 75 psi in five seconds or less, will initiate the opening of the suction relief valves.

The PIC-X04 controller monitors the actual suction pressure. PIC-X04 opens the suction relief valves if the suction pressure at the sensing point reaches the set point. The set point for PIC-X04 normally is transmitted from the OCC, but internal automatic (set point adjusted locally) and manual options are available. When manual or internal automatic is selected, an indication of that selection is transmitted to OCC.

**NOTE**

PS01 does not receive a PIC-X04 set point from OCC.

PIC-X04 is set at a safe, predetermined value by OCC in order to protect the upstream mainline piping from over-pressurizing due to a surge caused by an unanticipated station shutdown. PIC-X04 is located on the station control panel.

The output signals from PIC-X03 and PIC-X04 are transmitted to a low signal select device. The low signal select device compares the signals and transmits the lowest one which will cause the suction pressure relief valves to open if the set point is reached.

There exists the capability of sparing one of the suction relief valves at the station control panel. A MANUAL switch located on the station control panel may be used to select any one of the valves for standby. A pressure switch (PSH-X04) is connected to the suction pressure control circuits. If the suction pressure exceeds the set point pressure (normally 25 to 50 psi above the PIC-X04 set point), all suction relief valves, including the standby relief valve, will be signaled to open through this switch.

**2.1.12.1.2 Discharge Relief Instrumentation**

The controlling discharge pressure is sensed from a connection on the discharge line immediately downstream of valve D1. This mode of operation is based on the existing pressure in the line. There is no rate-of-rise controller.

Controller PIC-X05 is mounted on the station control panel and signals the discharge relief valves to open as necessary to keep the discharge pressure from exceeding the relief set point pressure (except at PS04). PIC-X05 set point is normally about 50 psi above the set point for the discharge controller associated with pump speed control (PIC-X02). The set point for PIC-X05 is transmitted from OCC. Automatic internal and manual modes are also available. If automatic internal or manual is selected, an indication of the selection and set point is transmitted to OCC.

There exists the capability of sparing one of the discharge relief valves at the station control panel. The standby relief valve is normally on-line, but with a higher set point. A MANUAL switch, located on the station control panel may be used to select any one (or none) of the discharge pressure relief valves for standby. If the discharge pressure rises 10 psig beyond the set point for PIC-X05, a differential switch built into the controller closes, and the standby valve fully opens.

The high pressure override is similar to that provided for the suction pressure relief system. PSH-X05 is normally set 25 to 50 psig above the set point for PIC-X05 and commands a station shutdown when activated.

**NOTE**

Set Point values for PIC-X04, PSH-X04, PIC-X02, PIC-X05, are established by DOP OCC-3.01, *Pressure Controller Set Points (ATB 052)*.



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Table 5.0. Base Operating Table Bypassing Pump Stations 2, 6, 8, 10 and 12  
i) Configuration: PS 2, 6, 8, 10 & 12 Bypassed - All Other Stations and Relief Systems in Service (1)

| Pump Station | Suction Side                        |                         |                                       | Discharge Side                      |  |                                  | Notes      | Table 5.0 Reference Tables (2) |               |
|--------------|-------------------------------------|-------------------------|---------------------------------------|-------------------------------------|--|----------------------------------|------------|--------------------------------|---------------|
|              | Relief Controller Maximum (PIC-X04) | Relief Switch (PSH-X04) | Pressure Controller Maximum (PIC-X02) | Relief Controller Maximum (PIC-X05) | High Pressure Station S/D Switch (PSH-X05) | For Relief System Out-of-Service |            | For Station Bypassed           |               |
| 1            | 100                                 | 125                     | 1,091                                 | 1,150                               | 1,200                                      | See Table 5.1                    |            |                                |               |
| 2            | ---                                 | ---                     | ---                                   | ---                                 | ---  | Station Not Operating            |            |                                |               |
| 3            | 265                                 | PAHH-304<br>450         | 1,175                                 | 1,235                               | PAHH-305<br>1,275                          | See Table 5.2                    |            |                                |               |
| 4            | 350                                 | 475                     | 1,040                                 | 1,070                               | 1,140                                      | See Table 5.3                    | (3)        |                                |               |
| 5            | 840                                 | PAHH-504<br>900         | PIC-549<br>870                        | 840                                 | PAHH-505<br>900                            | See Table 5.4                    | (4)        |                                |               |
| 6            | ---                                 | ---                     | ---                                   | ---                                 | ---  | Station Not Operating            | (8)        |                                |               |
| 7            | 550                                 | 650                     | 900                                   | 920                                 | 950  | See Table 5.5                    | (5)        |                                | See Table 5.8 |
| 8            | ---                                 | ---                     | ---                                   | ---                                 | ---  | Station Not Operating            |            |                                |               |
| 9            | 230                                 | PAHH-904<br>400         | 1,070                                 | 1,120                               | PAHH-905<br>1,190                          | See Table 5.6                    |            |                                |               |
| 10           | ---                                 | ---                     | ---                                   | ---                                 | ---  | Station Not Operating            |            |                                |               |
| 12           | ---                                 | ---                     | ---                                   | ---                                 | ---  | Station Not Operating            |            |                                |               |
| Valdez       | PIC-5062<br>820                     | PSH-5062A<br>875        | PIC-5059B<br>250                      | PIC-5060<br>300                     | PSH-5061<br>350                            | See Table 5.7 or 5.7.1           | (6)<br>(7) |                                |               |

**Notes:**

- (1) All locations have one spare suction relief valve and, except for PS 5, one spare discharge relief valve. VMT has one spare relief valve.
- (2) Table 5.0 reference tables are only valid for bypassing or taking reliefs out of service at one adjacent station at a time; i.e., the tables are valid for reliefs out-of-service at PS 5 and 9 (non-adjacent stations) at the same time using Tables 5.4 and 5.6, but are not valid for reliefs out-of-service at PS 7 and 9 at the same time (more than one adjacent station).
- (3) No discharge relief. PIC-405 initiates idle station command.
- (4) Two suction relief valves must remain in-service at PS 5. Valve D2 must be locked open. If M2 is closed and the injection pumps are on-line, the discharge relief must also be in-service. If M2 is locked open, the discharge relief valve can be used as one of the two required suction valves.
- (5) Monitor the operating gradient and reduce PIC-702 set point as necessary to keep it below pinch points south of PS 7.
- (6) Monitor the operating gradient and adjust PIC-5059A (backpressure controller) as necessary to keep it below pinch points north of Valdez.
- (7) PIC-5062 is to be set 50 psig above PIC-5059A (backpressure controller) up to the 820 psig maximum.
- (8) Relief switch PSH-604 is replaced by RGV 65. If pressure exceeds 905 psig at RGV 65, SIPPS initiates an AUTO STOP FLOW at PS05.



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| Pump Station | Suction Side                        |                         | Discharge Side                        |                                     |  | Notes      | Specific Exceptions to General Notes   |
|--------------|-------------------------------------|-------------------------|---------------------------------------|-------------------------------------|--|------------|--|
|              | Relief Controller Maximum (PIC-X04) | Relief Switch (PSH-X04) | Pressure Controller Maximum (PIC-X02) | Relief Controller Maximum (PIC-X05) | High Pressure Station S/D Switch (PSH-X05) |            |  |
| 1            | Out-of-service (100)                | Out-of-service (125)    | 1,091                                 | 1,150                               | 1,200                                      |            | Reconfigure PIC-105 to initiate idle station command. Align all producers to Tanks 110 and/or 111 and block the 600# producers from the tightline header. Valves T0 and/or T2, M1, S3, S5, and S7 must be locked open. Valves 320M5, 420M5, 520M5 and 620M5 must be locked closed. |
| 2            | ---                                 | ---                     | ---                                   | ---                                 | ---  |            | Station Not Operating  |
| 3            | 190                                 | PAHH-304<br>450         | 1,175                                 | 1,235                               | PAHH-305<br>1,275                          |            |  |
| 4            | 350                                 | 475                     | 1,040                                 | 1,070                               | 1,140                                      | (2)        |  |
| 5            | 840                                 | PAHH-504<br>900         | PIC-549<br>870                        | 840                                 | PAHH-505<br>900                            | (3)        |  |
| 6            | ---                                 | ---                     | ---                                   | ---                                 | ---  | (7)        | Station Not Operating  |
| 7            | 550                                 | 650                     | 900                                   | 920                                 | 950  | (4)        |  |
| 8            | ---                                 | ---                     | ---                                   | ---                                 | ---  |            | Station Not Operating  |
| 9            | 230                                 | PAHH-904<br>400         | 1,070                                 | 1,120                               | PAHH-905<br>1,190                          |            |  |
| 10           | ---                                 | ---                     | ---                                   | ---                                 | ---  |            | Station Not Operating  |
| 12           | ---                                 | ---                     | ---                                   | ---                                 | ---  |            | Station Not Operating  |
| Valdez       | PIC-5062<br>820                     | PSH-5062A<br>875        | PIC-5059B<br>250                      | PIC-5060<br>300                     | PSH-5061<br>350                            | (5)<br>(6) |  |

**Notes:** (1) All locations have one spare suction relief valve and, except for PS 5, one spare discharge relief valve. VMT has one spare relief valve.  
 (2) No discharge relief. PIC-405 initiates idle station command.  
 (3) Two suction relief valves must remain in-service at PS 5. Valve D2 must be locked open. If M2 is closed and the injection pumps are on-line, the discharge relief must also be in-service. If M2 is locked open, the discharge relief valve can be used as one of the two required suction valves.  
 (4) Monitor the operating gradient and reduce PIC-702 set point as necessary to keep it below pinch points south of PS 7.  
 (5) Monitor the operating gradient and adjust PIC-5059A (backpressure controller) as necessary to keep it below pinch points north of Valdez.  
 (6) PIC-5062 is to be set 50 psig above PIC-5059A (backpressure controller) up to the 820 psig maximum.  
 (7) Relief switch PSH-604 is replaced by RGV 65. If pressure exceeds 905 psig at RGV 65, SIPP5 initiates an AUTO STOP FLOW at PS05.  
**Variations from Table 5.0 (Base) are in bold. Set points in shaded areas are unchanged.**



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Table 5.2. PS 3 Relief System Out-of-Service (1)

**Configuration: PS 2, 6, 8, 10 & 12 Bypassed - PS 3 Relief System Out-of-Service & PS 3 Mainline Pumps Operating**

**Maximum Throughput - 1.15 MMBPD**

| Pump Station | Suction Side                        |                               | Discharge Side                        |                                     |  | Notes      | Specific Exceptions to General Notes   |
|--------------|-------------------------------------|-------------------------------|---------------------------------------|-------------------------------------|--|------------|--|
|              | Relief Controller Maximum (PIC-X04) | Relief Switch (PSH-X04)       | Pressure Controller Maximum (PIC-X02) | Relief Controller Maximum (PIC-X05) | High Pressure Station S/D Switch (PSH-X05) |            |  |
| 1            | 100                                 | 125                           | 1,091                                 | 1,150                               | 1,200                                      | (2)        | At PS 1, both discharge relief valves are required, which leaves no spare.   |
| 2            | ---                                 | ---                           | ---                                   | ---                                 | ---  |            | Station Not Operating  |
| 3            | 125                                 | PAHH-304 Out-of-service (450) | 900                                   | 925                                 | PAHH-305<br>1,000                          |            | Reset the PIC-304 alarm to 100 psig. If the suction pressure reaches 125 psig, immediately idle the mainline pumps. Reset the PIC-305 alarm to 900 psig. If the discharge pressure reaches 925 psig, immediately idle the mainline pumps. PIC-301 to be 100 psig maximum.<br><b>WARNING: If PS 3 pumps idle or shutdown, idle PS 1 within 30 seconds of the start of PS 3 pump change.</b> |
| 4            | 170                                 | 475                           | 1,040                                 | 1,070                               | 1,140                                      | (3)        |  |
| 5            | 840                                 | PAHH-504<br>900               | PIC-549<br>870                        | 840                                 | PAHH-505<br>900                            | (4)        |  |
| 6            | ---                                 | ---                           | ---                                   | ---                                 | ---  | (8)        | Station Not Operating  |
| 7            | 550                                 | 650                           | 900                                   | 920                                 | 950  | (5)        |  |
| 8            | ---                                 | ---                           | ---                                   | ---                                 | ---  |            | Station Not Operating  |
| 9            | 230                                 | PAHH-904<br>400               | 1,070                                 | 1,120                               | PAHH-905<br>1,190                          |            |  |
| 10           | ---                                 | ---                           | ---                                   | ---                                 | ---  |            | Station Not Operating  |
| 12           | ---                                 | ---                           | ---                                   | ---                                 | ---  |            | Station Not Operating  |
| Valdez       | PIC-5062<br>820                     | PSH-5062A<br>875              | PIC-5059B<br>250                      | PIC-5060<br>300                     | PSH-5061<br>350                            | (6)<br>(7) |  |

**Notes:**

- (1) Except as noted, all locations have one spare suction relief valve and, except for PS 5, one spare discharge relief valve. VMT has one spare relief valve.
- (2) No spare relief valve at PS 1 discharge.
- (3) No discharge relief. PIC-405 initiates idle station command.
- (4) Two suction relief valves must remain in-service at PS 5. Valve D2 must be locked open. If M2 is closed and the injection pumps are on-line, the discharge relief must also be in-service. If M2 is locked open, the discharge relief valve can be used as one of the two required suction valves.
- (5) Monitor the operating gradient and reduce PIC-702 set point as necessary to keep it below pinch points south of PS 7.
- (6) Monitor the operating gradient and adjust PIC-5059A (backpressure controller) as necessary to keep it below pinch points north of Valdez.
- (7) PIC-5062 is to be set 50 psig above PIC-5059A (backpressure controller) up to the 820 psig maximum.
- (8) Relief switch PSH-604 is replaced by RGV 65. If pressure exceeds 905 psig at RGV 65, SIPPS initiates AUTO STOP FLOW at PS05.

**Variations from Table 5.0 (Base) are in bold. Set points in shaded areas are unchanged.**



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Table 5.3. PS 4 Relief System Out-of-Service (1)

Configuration: PS 2, 6, 8, 10 & 12 Bypassed - PS 4 Relief System Out-of-Service & PS 4 Mainline Pumps Operating

Maximum Throughput - 1.15 MMBPD

| Pump Station | Suction Side                        |                         | Discharge Side                        |                                     |  | Notes      | Specific Exceptions to General Notes   |
|--------------|-------------------------------------|-------------------------|---------------------------------------|-------------------------------------|--|------------|--|
|              | Relief Controller Maximum (PIC-X04) | Relief Switch (PSH-X04) | Pressure Controller Maximum (PIC-X02) | Relief Controller Maximum (PIC-X05) | High Pressure Station S/D Switch (PSH-X05) |            |  |
| 1            | 100                                 | 125                     | 1,091                                 | 1,150                               | 1,200                                      |            |  |
| 2            | ---                                 | ---                     | ---                                   | ---                                 | ---  |            | Station Not Operating  |
| 3            | 265                                 | PAHH-304<br>450         | 1,020                                 | 1,045                               | PAHH-305<br>1,100                          |            |  |
| 4            | 200                                 | Out-of-service (475)    | 1,020                                 | 1,050                               | 1,100                                      | (2)        | Reconfigure PIC-404 to initiate idle station command. Provide OCC with high suction pressure alarm at 175 psig. PIC-401 to be 175 psig maximum. <b>WARNING: If PS 4 pumps idle or shut down, idle PS 3 within 25 seconds of the start of PS 4 pump change.</b> |
| 5            | 840                                 | PAHH-504<br>900         | PIC-549<br>870                        | 840                                 | PAHH-505<br>900                            | (3)        |  |
| 6            | ---                                 | ---                     | ---                                   | ---                                 | ---  | (7)        | Station Not Operating  |
| 7            | 550                                 | 650                     | 900                                   | 920                                 | 950  | (4)        |  |
| 8            | ---                                 | ---                     | ---                                   | ---                                 | ---  |            | Station Not Operating  |
| 9            | 230                                 | PAHH-904<br>400         | 1,070                                 | 1,120                               | PAHH-905<br>1,190                          |            |  |
| 10           | ---                                 | ---                     | ---                                   | ---                                 | ---  |            | Station Not Operating  |
| 12           | ---                                 | ---                     | ---                                   | ---                                 | ---  |            | Station Not Operating  |
| Valdez       | PIC-5062<br>820                     | PSH-5062A<br>875        | PIC-5059B<br>250                      | PIC-5060<br>300                     | PSH-5061<br>350                            | (5)<br>(6) |  |

**Notes:**

- All locations have one spare suction relief valve and, except for PS 5, one spare discharge relief valve. VMT has one spare relief valve.
- No discharge relief. PIC-405 initiates idle station command.
- Two suction relief valves must remain in-service at PS 5. Valve D2 must be locked open. If M2 is closed and the injection pumps are on-line, the discharge relief must also be in-service. If M2 is locked open, the discharge relief valve can be used as one of the two required suction valves.
- Monitor the operating gradient and reduce PIC-702 set point as necessary to keep it below pinch points south of PS 7.
- Monitor the operating gradient and adjust PIC-5059A (backpressure controller) as necessary to keep it below pinch points north of Valdez.
- PIC-5062 is to be set 50 psig above PIC-5059A (backpressure controller) up to the 820 psig maximum.
- Relief switch PSH-604 is replaced by RGV 65. If pressure exceeds 905 psig at RGV 65, SIPPS initiates AUTO STOP FLOW at PS05.

**Variations from Table 5.0 (Base) are in bold. Set points in shaded areas are unchanged.**



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**Table 5.4. PS 5 Relief System Out-of-Service (1)**

**Configuration: PS 2, 6, 8, 10 & 12 Bypassed - PS 5 Relief System Out-of-Service**

**Maximum Throughput - 0.4 MMBPD (Note: If a problem occurs at PS05 that requires blocking in reliefs, you will need to shut down until the problem can be resolved, or an assessment can be made about starting back up at a max flow rate of 400,000 BPD.)**

| Pump Station | Suction Side                        |                                     | Discharge Side                        |                                     |  | Notes      | Specific Exceptions to General Notes  |
|--------------|-------------------------------------|-------------------------------------|---------------------------------------|-------------------------------------|--|------------|---|
|              | Relief Controller Maximum (PIC-X04) | Relief Switch (PSH-X04)             | Pressure Controller Maximum (PIC-X02) | Relief Controller Maximum (PIC-X05) | High Pressure Station S/D Switch (PSH-X05) |            |   |
| 1            | 100                                 | 125                                 | 1,091                                 | 1,150                               | 1,200                                      |            |   |
| 2            | ---                                 | ---                                 | ---                                   | ---                                 | ---  |            | Station Not Operating   |
| 3            | 265                                 | PAHH-304<br>450                     | 1,175                                 | 1,235                               | PAHH-305<br>1,275                          |            |   |
| 4            | 350                                 | 475                                 | 1,000                                 | 1,030                               | 1,140                                      | (2)        |   |
| 5            | ---                                 | PAHH-504<br>Out-of-service<br>(900) | PIC-549<br>870                        | ---                                 | PAHH-505<br>900                            |            | SIPPS will send a STOP FLOW/CLOSE RGVS 31-34 command on: (1) a non-open status of any RGV in the group 51-80, PS05 M2, PS05 BL2, PS09 BL1, or (2) an AUTO STOP FLOW command |
| 6            | ---                                 | ---                                 | ---                                   | ---                                 | ---  | (6)        | Station Not Operating   |
| 7            | 400                                 | 650                                 | 900                                   | 920                                 | 950  | (3)        |   |
| 8            | ---                                 | ---                                 | ---                                   | ---                                 | ---  |            | Station Not Operating   |
| 9            | 230                                 | PAHH-904<br>400                     | 1,070                                 | 1,120                               | PAHH-905<br>1,190                          |            |   |
| 10           | ---                                 | ---                                 | ---                                   | ---                                 | ---  |            | Station Not Operating   |
| 12           | ---                                 | ---                                 | ---                                   | ---                                 | ---  |            | Station Not Operating   |
| Valdez       | PIC-5062<br>820                     | PSH-5062A<br>875                    | PIC-5059B<br>250                      | PIC-5060<br>300                     | PSH-5061<br>350                            | (4)<br>(5) |   |

**Notes:**

- (1) All locations have one spare suction relief valve and, except for PS 5, one spare discharge relief valve. VMT has one spare relief valve..
- (2) No discharge relief. PIC-405 initiates idle station command.
- (3) Monitor the operating gradient and reduce PIC-702 set point as necessary to keep it below pinch points south of PS 7.
- (4) Monitor the operating gradient and adjust PIC-5059A (backpressure controller) as necessary to keep it below pinch points north of Valdez.
- (5) PIC-5062 is to be set 50 psig above PIC-5059A (backpressure controller) up to the 820 psig maximum.
- (6) Relief switch PSH-604 is replaced by RGV 65 If pressure exceeds 905 psig at RGV 65, SIPPS initiates AUTO STOP FLOW at PS05.

**Variations from Table 5.0 (Base) are in bold. Set points in shaded areas are unchanged.**



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| Table 5.5. PS 7 Relief System Out-of-Service (1)  |                                     |                             |                                       |                                     |  |  |       |                                      |   |
|---|-------------------------------------|-----------------------------|---------------------------------------|-------------------------------------|--|--|-------|--------------------------------------|---|
| Configuration: PS 2, 6, 8, 10 & 12 Bypassed - PS 7 Relief System Out-of-Service & PS 7 Mainline Pumps Operating |                                     |                             |                                       |                                     |  |  |       |                                      |   |
| Maximum Throughput - 1.15 MMBBPD  |                                     |                             |                                       |                                     |  |  |       |                                      |   |
| Pump Station  | Suction Side                        |                             |                                       | Discharge Side                      |  |  | Notes | Specific Exceptions to General Notes |   |
|   | Relief Controller Maximum (PIC-X04) | Relief Switch (PSH-X04)     | Pressure Controller Maximum (PIC-X02) | Relief Controller Maximum (PIC-X05) | High Pressure Station S/D Switch (PSH-X05) |  |       |                                      |   |
| 1   | 100                                 | 125                         | 1,091                                 | 1,150                               | 1,200                                      |  |       |                                      |   |
| 2   | ---                                 | ---                         | ---                                   | ---                                 | ---  |  |       | Station Not Operating                |   |
| 3   | 265                                 | <del>PAHH-304</del><br>450  | 1,175                                 | 1,235                               | <del>PAHH-305</del><br>1,275               |  | (2)   |                                      |   |
| 4   | 350                                 | 475                         | 1,040                                 | 1,070                               | 1,140                                      |  | (3)   |                                      |   |
| 5   | 840                                 | <del>PAHH-504</del><br>900  | <del>PIC-549</del><br>870             | 840                                 | <del>PAHH-505</del><br>900                 |  | (7)   |                                      |   |
| 6   | ---                                 | ---                         | ---                                   | ---                                 | ---  |  | (4)   | Station Not Operating                | Reconfigure PIC-704 and PIC-705 to initiate idle station command. Provide OCC with high suction pressure alarm at 310 psig. PIC-701 to be 310 psig maximum. |
| 7   | 335                                 | Out-of-service (650)        | 900                                   | 920                                 | 950  |  |       | Station Not Operating                |   |
| 8   | ---                                 | ---                         | ---                                   | ---                                 | ---  |  |       |                                      |   |
| 9   | 230                                 | <del>PAHH-904</del><br>400  | 1,070                                 | 1,120                               | <del>PAHH-905</del><br>1,190               |  |       |                                      |   |
| 10  | ---                                 | ---                         | ---                                   | ---                                 | ---  |  |       | Station Not Operating                |   |
| 12  | ---                                 | ---                         | ---                                   | ---                                 | ---  |  |       | Station Not Operating                |   |
| Valdez  | <del>PIC-5062</del><br>820          | <del>PSH-5062A</del><br>875 | <del>PIC-5059B</del><br>250           | <del>PIC-5060</del><br>300          | <del>PSH-5061</del><br>350                 |  | (5)   |                                      |   |
|   |                                     |                             |                                       |                                     |  |  | (6)   |                                      |   |

**Notes:**

- (1) All locations have one spare suction relief valve and, except for PS 5, one spare discharge relief valve. VMT has one spare relief valve.
- (2) No discharge relief. PIC-405 initiates idle station command.
- (3) Two suction relief valves must remain in-service at PS 5. Valve D2 must be locked open. If M2 is closed and the injection pumps are on-line, the discharge relief must also be in-service. If M2 is locked open, the discharge relief valve can be used as one of the two required suction valves.
- (4) Monitor the operating gradient and reduce PIC-702 set point as necessary to keep it below pinch points south of PS 7.
- (5) Monitor the operating gradient and adjust PIC-5059A (backpressure controller) as necessary to keep it below pinch points north of Valdez.
- (6) PIC-5062 is to be set 50 psig above PIC-5059A (backpressure controller) up to the 820 psig maximum.
- (7) Relief switch PSH-604 is replaced by RGV 65. If pressure exceeds 905 psig at RGV 65, SIPPS initiates AUTO STOP FLOW at PS05.

**Variations from Table 5.0 (Base) are in bold. Set points in shaded areas are unchanged.**



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**Table 5.6. PS 9 Relief System Out-of-Service (1)**  
**Configuration: PS 2, 6, 8, 10 & 12 Bypassed - PS 9 Relief System Out-of-Service & PS 9 Mainline Pumps Operating**  
**Maximum Throughput - 1.15 MMBPD**

| Pump Station | Suction Side                        |                                     |                                       | Discharge Side                      |  |            | Notes | Specific Exceptions to General Notes  |
|--------------|-------------------------------------|-------------------------------------|---------------------------------------|-------------------------------------|--|------------|-------|---|
|              | Relief Controller Maximum (PIC-X04) | Relief Switch (PSH-X04)             | Pressure Controller Maximum (PIC-X02) | Relief Controller Maximum (PIC-X05) | High Pressure Station S/D Switch (PSH-X05) |            |       |   |
| 1            | 100                                 | 125                                 | 1,091                                 | 1,150                               | 1,200                                      |            |       |   |
| 2            | ---                                 | ---                                 | ---                                   | ---                                 | ---  |            |       | Station Not Operating   |
| 3            | 265                                 | PAHH-304<br>450                     | 1,175                                 | 1,235                               | PAHH-305<br>1,275                          |            |       |   |
| 4            | 350                                 | 475                                 | 1,040                                 | 1,070                               | 1,140                                      | (2)        |       |   |
| 5            | 840                                 | PAHH-504<br>900                     | PIC-549<br>870                        | 840                                 | PAHH-505<br>900                            | (3)        |       |   |
| 6            | ---                                 | ---                                 | ---                                   | ---                                 | ---  | (6)        |       | Station Not Operating   |
| 7            | 550                                 | 650                                 | 800                                   | 820                                 | 950  |            |       | Station Not Operating   |
| 8            | ---                                 | ---                                 | ---                                   | ---                                 | ---  |            |       | Station Not Operating   |
| 9            | 125                                 | PAHH-904<br>Out-of-service<br>(400) | 1,070                                 | 1,115                               | PAHH-905<br>1,190                          |            |       | Reset the PIC-904 alarm to 100 psig. If the suction pressure reaches 125 psig, immediately idle the mainline pumps. Reset the PIC-905 alarm to 1,050 psig. If the discharge pressure reaches 1,115 psig, immediately idle the mainline pumps. PIC-901 to be 100 psig maximum.<br><b>WARNING: If PS 9 pumps idle or shut down, idle PS 7 within 35 seconds of the start of PS 9 pump change.</b> |
| 10           | ---                                 | ---                                 | ---                                   | ---                                 | ---  |            |       | Station Not Operating   |
| 12           | ---                                 | ---                                 | ---                                   | ---                                 | ---  |            |       | Station Not Operating   |
| Valdez       | PIC-5062<br>820                     | PSH-5062A<br>875                    | PIC-5059B<br>250                      | PIC-5060<br>300                     | PSH-5061<br>350                            | (4)<br>(5) |       |   |

**Notes:**  
 (1) All locations have one spare suction relief valve and, except for PS 5, one spare discharge relief valve. VMT has one spare relief valve.  
 (2) No discharge relief. PIC-405 initiates idle station command.  
 (3) Two suction relief valves must remain in-service at PS 5. Valve D2 must be locked open. If M2 is closed and the injection pumps are on-line, the discharge relief must also be in-service. If M2 is locked open, the discharge relief valve can be used as one of the two required suction valves.  
 (4) Monitor the operating gradient and adjust PIC-5059A (backpressure controller) as necessary to keep it below pinch points north of Valdez.  
 (5) PIC-5062 is to be set 50 psig above PIC-5059A (backpressure controller) up to the 820 psig maximum.  
 (6) Relief switch PSH-604 is replaced by RGV 65. If pressure exceeds 905 psig at RGV 65, SIPPS initiates AUTO STOP FLOW at PS05.  
**Variations from Table 5.0 (Base) are in bold. Set points in shaded areas are unchanged.**



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| Table 5.7. Valdez Relief System Out-of-Service (1)  |                                     |                                   |                                       |                                     |  |  |  |     |       |   |
|---|-------------------------------------|-----------------------------------|---------------------------------------|-------------------------------------|--|--|--|-----|-------|---|
| Configuration: PS 2, 6, 8, 10 & 12 Bypassed - Valdez Relief System Out-of-Service (Two or More Valves Blocked In) |                                     |                                   |                                       |                                     |  |  |  |     |       |   |
| Maximum Throughput - 1.15 MMBPD   |                                     |                                   |                                       |                                     |  |  |  |     |       |   |
| Pump Station  | Suction Side                        |                                   |                                       |                                     | Discharge Side                             |  |  |     | Notes | Specific Exceptions to General Notes  |
|   | Relief Controller Maximum (PIC-X04) | Relief Switch (PSH-X04)           | Pressure Controller Maximum (PIC-X02) | Relief Controller Maximum (PIC-X05) | High Pressure Station S/D Switch (PSH-X05) |  |  |     |       |   |
| 1   | 100                                 | 125                               | 1,091                                 | 1,150                               | 1,200                                      |  |  |     |       |   |
| 2   | ---                                 | ---                               | ---                                   | ---                                 | ---  |  |  |     |       | Station Not Operating   |
| 3   | 265                                 | PAHH-304<br>450                   | 1,175                                 | 1,235                               | PAHH-305<br>1,275                          |  |  |     |       |   |
| 4   | 350                                 | 475                               | 1,040                                 | 1,070                               | 1,140                                      |  |  | (2) |       |   |
| 5   | 840                                 | PAHH-504<br>900                   | PIC-549<br>870                        | 840                                 | PAHH-505<br>900                            |  |  | (3) |       |   |
| 6   | ---                                 | ---                               | ---                                   | ---                                 | ---  |  |  | (5) |       | Station Not Operating   |
| 7   | 550                                 | 650                               | 900                                   | 920                                 | 950  |  |  | (4) |       |   |
| 8   | ---                                 | ---                               | ---                                   | ---                                 | ---  |  |  |     |       | Station Not Operating   |
| 9   | 230                                 | PAHH-904<br>400                   | 1,070                                 | 1,120                               | PAHH-905<br>1,190                          |  |  |     |       |   |
| 10  | ---                                 | ---                               | ---                                   | ---                                 | ---  |  |  |     |       | Station Not Operating   |
| 12  | ---                                 | ---                               | ---                                   | ---                                 | ---  |  |  |     |       | Station Not Operating   |
| Valdez  | PIC-5062<br>Out-of-service (820)    | PSH-5062A<br>Out-of-service (875) | PIC-5059B<br>Out-of-service (250)     | PIC-5060<br>Out-of-service (300)    | PSH-5061<br>Out-of-service (350)           |  |  |     |       | Bypass incoming meters and backpressure control system and lock open valves as required to provide an open flow path to one or more crude tanks. Valves 002, 789, 733 or 735, and individual valves from main headers to one or more tanks must be locked open. |

**Notes:**

- (1) All locations have one spare suction relief valve and, except for PS 5, one spare discharge relief valve. VMT has one spare relief valve.
- (2) No discharge relief. PIC-405 initiates idle station command.
- (3) Two suction relief valves must remain in-service at PS 5. Valve D2 must be locked open. If M2 is closed and the injection pumps are on-line, the discharge relief must also be in-service. If M2 is locked open, the discharge relief valve can be used as one of the two required suction valves.
- (4) Monitor the operating gradient and reduce PIC-702 set point as necessary to keep it below pinch points south of PS 7.
- (5) Relief switch PSH-604 is replaced by RGV 65. If pressure exceeds 905 psig at RGV 65, SIPPS initiates AUTO STOP FLOW at PS05.

**Variations from Table 5.0 (Base) are in bold. Set points in shaded areas are unchanged.**



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| Table 5.7.1 Valdez Relief System Out-of-Service (1) - Turbine Meters In-Service  |                                     |                                   |                                       |                                     |  |                                       |                                     |                       |   |  |  |  |
|--|-------------------------------------|-----------------------------------|---------------------------------------|-------------------------------------|--|---------------------------------------|-------------------------------------|-----------------------|---|--|--|--|
| Configuration: PS 2, 6, 8, 10 & 12 Bypassed - Valdez Relief System Out-of-Service (Two or More Valves Blocked In), Turbine Meters In-Service |                                     |                                   |                                       |                                     |  |                                       |                                     |                       |   |  |  |  |
| Maximum Throughput - 1.10 MMBPD  |                                     |                                   |                                       |                                     |  |                                       |                                     |                       |   |  |  |  |
| Pump Station   | Suction Side                        |                                   |                                       | Discharge Side                      |  |                                       |                                     | Notes                 | Specific Exceptions to General Notes  |  |  |  |
|  | Relief Controller Maximum (PIC-X04) | Relief Switch (PSH-X04)           | Pressure Controller Maximum (PIC-X02) | Relief Controller Maximum (PIC-X05) | High Pressure Station S/D Switch (PSH-X05) | Pressure Controller Maximum (PIC-X02) | Relief Controller Maximum (PIC-X05) |                       |   |  |  |  |
| 1  | 100                                 | 125                               | 1,091                                 | 1,150                               | 1,200                                      |                                       |                                     |                       |   |  |  |  |
| 2  | ---                                 | ---                               | ---                                   | ---                                 | ---  |                                       |                                     | Station Not Operating |   |  |  |  |
| 3  | 265                                 | PAHH-304<br>450                   | 1,175                                 | 1,235                               | PAHH-305<br>1,275                          |                                       |                                     |                       |   |  |  |  |
| 4  | 350                                 | 475                               | 1,040                                 | 1,070                               | 1,140                                      |                                       | (2)                                 |                       |   |  |  |  |
| 5  | 840                                 | PAHH-504<br>900                   | PIC-549<br>870                        | 840                                 | PAHH-505<br>900                            |                                       | (3)                                 |                       |   |  |  |  |
| 6  | ---                                 | ---                               | ---                                   | ---                                 | ---  |                                       | (5)                                 | Station Not Operating |   |  |  |  |
| 7  | 550                                 | 650                               | 900                                   | 920                                 | 950  |                                       | (4)                                 |                       |   |  |  |  |
| 8  | ---                                 | ---                               | ---                                   | ---                                 | ---  |                                       |                                     | Station Not Operating |   |  |  |  |
| 9  | 230                                 | PAHH-904<br>400                   | 1,070                                 | 1,120                               | PAHH-905<br>1,190                          |                                       | (4)                                 |                       |   |  |  |  |
| 10   | ---                                 | ---                               | ---                                   | ---                                 | ---  |                                       |                                     | Station Not Operating |   |  |  |  |
| 12   | ---                                 | ---                               | ---                                   | ---                                 | ---  |                                       |                                     | Station Not Operating |   |  |  |  |
| Valdez   | PIC-5062<br>Out-of-service (820)    | PSH-5062A<br>Out-of-service (875) | PIC-5059B<br>Out-of-service (250)     | PIC-5060<br>Out-of-service (300)    | PSH-5061<br>Out-of-service (350)           |                                       |                                     |                       | Lock open valves 002, 733 or 735, and individual valves from main header to one or more tanks. If flow path becomes blocked at or upstream of the meters, issue STOP FLOW/CLOSE RGV5 121-125 command within 45 seconds, and open valve 789. |  |  |  |

**Notes:** (1) All locations have one spare suction relief valve and, except for PS 5, one spare discharge relief valve. VMT has one spare relief valve.  
 (2) No discharge relief. PIC-405 initiates idle station command.  
 (3) Two suction relief valves must remain in-service at PS 5. Valve D2 must be locked open. If M2 is closed and the injection pumps are on-line, the discharge relief must also be in-service. If M2 is locked open, the discharge relief valve can be used as one of the two required suction valves.  
 (4) Monitor the operating gradient and reduce PIC-X02 set point as necessary to keep it below pinch points south of the pump station.  
 (5) Relief switch PSH-604 is replaced by RGV 65. If pressure exceeds 905 psig at RGV 65, SIPPS initiates AUTO STOP FLOW at PS05.  
**Variations from Table 5.0 (Base) are in bold. Set points in shaded areas are unchanged.**



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Table 5.8. PS 7 Bypassed  
Configuration: PS 2, 6, 8, 10 & 12 Bypassed - PS 7 Mainline Pumps not Operating & Relief System in or Out-of-Service  
Maximum Throughput - 1.15 MMBPD

| Pump Station | Suction Side                        |                         | Discharge Side                        |                                     |  | Notes      | Specific Exceptions to General Notes   |
|--------------|-------------------------------------|-------------------------|---------------------------------------|-------------------------------------|--|------------|--|
|              | Relief Controller Maximum (PIC-X04) | Relief Switch (PSH-X04) | Pressure Controller Maximum (PIC-X02) | Relief Controller Maximum (PIC-X05) | High Pressure Station S/D Switch (PSH-X05) |            |  |
| 1            | 100                                 | 125                     | 1,091                                 | 1,150                               | 1,200                                      |            |  |
| 2            | ---                                 | ---                     | ---                                   | ---                                 | ---  |            | Station Not Operating  |
| 3            | 265                                 | <b>PAHH-304</b><br>450  | 1,175                                 | 1,235                               | <b>PAHH-305</b><br>1,275                   |            |  |
| 4            | 350                                 | 475                     | 1,040                                 | 1,070                               | 1,140                                      | (2)        |  |
| 5            | 870                                 | <b>PAHH-504</b><br>920  | <b>PIC-549</b><br>900                 | 870                                 | <b>PAHH-505</b><br>920                     | (3)        | Regardless of the actual set points used, the exceptions shown for PS 7 being out-of-service (which deal with Segment 7 & 8 auto logic), still apply.  |
| 6            | ---                                 | ---                     | ---                                   | ---                                 | ---  | (6)        | Station Not Operating  |
| 7            | ---                                 | ---                     | ---                                   | ---                                 | ---  | (7)        | SIPPS should automatically lower the PS 5 relief setpoints to 550 psig given a rogue valve in Segments 7 or 8. If the PS 5 relief setpoints do not automatically drop to 550 psig, then OCC should manually send a command to lower the PS 5 relief set points to 550 psig within 150 seconds after any Segment 7 or 8 valve starts closing. |
| 8            | ---                                 | ---                     | ---                                   | ---                                 | ---  |            | Station Not Operating  |
| 9            | 310                                 | <b>PAHH-904</b><br>500  | 1,070                                 | 1,120                               | <b>PAHH-905</b><br>1,190                   |            |  |
| 10           | ---                                 | ---                     | ---                                   | ---                                 | ---  |            | Station Not Operating  |
| 12           | ---                                 | ---                     | ---                                   | ---                                 | ---  |            | Station Not Operating  |
| Valdez       | <b>PIC-5062</b><br>820              | <b>PSH-5062A</b><br>875 | <b>PIC-5059B</b><br>250               | <b>PIC-5060</b><br>300              | <b>PSH-5061</b><br>350                     | (4)<br>(5) |  |

**Notes:**  
 (1) All locations have one spare suction relief valve and, except for PS 5, one spare discharge relief valve. VMT has one spare relief valve.  
 (2) No discharge relief. PIC-405 initiates idle station command.  
 (3) Two suction relief valves must remain in-service at PS 5. Valve D2 must be locked open. If M2 is closed and the injection pumps are on-line, the discharge relief must also be in-service. If M2 is locked open, the discharge relief valve can be used as one of the two required suction valves.  
 (4) Monitor the operating gradient and adjust PIC-5059A (backpressure controller) as necessary to keep it below pinch points north of Valdez.  
 (5) PIC-5062 is to be set 50 psig above PIC-5059A (backpressure controller) up to the 820 psig maximum.  
 (6) Relief switch PSH-604 is replaced by RGV 65. If pressure exceeds 905 psig at RGV 65, SIPPS initiates AUTO STOP FLOW at PS05.  
 (7) These actions are needed to reduce the pressure at the closing valve before it gets closed.  
 Variations from Table 5.0 (Base) are in bold. Set points in shaded areas are unchanged.



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Table 5.8.1. PS 7 Bypassed and PS05 Relief System Out-of-Service

**Note:** Configuration: PS 2, 6, 8, 10 & 12 Bypassed - PS 7 Mainline Pumps not Operating & Relief System in or Out-of-Service and PS05 Relief System Out-of-Service

| Pump Station | Suction Side                        |                                     | Discharge Side                        |                                     |  | Notes      | Specific Exceptions to General Notes   |
|--------------|-------------------------------------|-------------------------------------|---------------------------------------|-------------------------------------|--|------------|--|
|              | Relief Controller Maximum (PIC-X04) | Relief Switch (PSH-X04)             | Pressure Controller Maximum (PIC-X02) | Relief Controller Maximum (PIC-X05) | High Pressure Station S/D Switch (PSH-X05) |            |  |
| 1            | 100                                 | 125                                 | 1,091                                 | 1,150                               | 1,200                                      |            |  |
| 2            | ---                                 | ---                                 | ---                                   | ---                                 | ---  |            | Station Not Operating  |
| 3            | 265                                 | PAHH-304<br>450                     | 1,175                                 | 1,235                               | PAHH-305<br>1,275                          |            |  |
| 4            | 350                                 | 475                                 | 1,040                                 | 1,070                               | 1,140                                      | (2)        |  |
| 5            | ---                                 | PAHH-504<br>Out-of-service<br>(860) | PIC-549<br>840                        | ---                                 | PAHH-505<br>860                            |            | SIPPS will send a STOP FLOW/CLOSE RGVs 31-34 command on: (1) a non-open status of any RGV in the group 51-80, PS05 M2, PS05 BL2, PS09 BL1, or (2) an AUTO STOP FLOW command. |
| 6            | ---                                 | ---                                 | ---                                   | ---                                 | ---  | (5)        | Station Not Operating  |
| 7            | ---                                 | ---                                 | ---                                   | ---                                 | ---  | (6)        | Station Not Operating  |
| 8            | ---                                 | ---                                 | ---                                   | ---                                 | ---  |            | Station Not Operating  |
| 9            | 230                                 | PAHH-904<br>400                     | 1,070                                 | 1,120                               | PAHH-905<br>1,190                          |            |  |
| 10           | ---                                 | ---                                 | ---                                   | ---                                 | ---  |            | Station Not Operating  |
| 12           | ---                                 | ---                                 | ---                                   | ---                                 | ---  |            | Station Not Operating  |
| Valdez       | PIC-5062<br>820                     | PSH-5062A<br>875                    | PIC-5059B<br>250                      | PIC-5060<br>300                     | PSH-5061<br>350                            | (3)<br>(4) |  |

**Notes:**

- (1) All locations have one spare suction relief valve and, except for PS 5, one spare discharge relief valve. VMT has one spare relief valve.
- (2) No discharge relief. PIC-405 initiates idle station command.
- (3) Monitor the operating gradient and adjust PIC-5059A (backpressure controller) as necessary to keep it below pinch points north of Valdez.
- (4) PIC-5062 is to be set 50 psig above PIC-5059A (backpressure controller) up to the 820 psig maximum.
- (5) Relief switch PSH-604 is replaced by RGV 65. If pressure exceeds 905 psig at RGV 65, SIPPS initiates AUTO STOP FLOW at PS05.
- (6) Relief switch PSH-704 can be raised as needed so that it does not interfere with the operating gradient.

**Variations from Table 5.0 (Base) are in bold. Set points in shaded areas are unchanged.**



## Department Operating Procedure Operations Control Center

Subject: Relief Valves Failed to Open at Setpoint (Abnormal Operating Procedure) (SR)

Number: OCC-6.02-SR  
Revision: 1

Page: 1 of 3  
Effective Date: 02/04/08

Approval:

**Michael W. Joynor, Vice President Oil Movements (Approval on File)**

### Purpose

This procedure details the Pipeline Controllers response to relief setpoints that have been reached or exceeded, without the relief valves opening as required by *49 CFR 195.402(d)(1)(v)*. The practices contained here are guidelines for the Controller to use and may be deviated from as required depending on operating conditions, or to protect personnel, the environment or equipment.

### Affects

Operations Control Center (OCC)  
Pipeline  
Valdez Marine Terminal

### Responsible and Accountable Resources

OCC Pipeline Controller  
OCC Supervisor  
Pump Station Control Room Operator (CRO)  
PS03 or PS09 Technician

### Procedure

#### A. If the relief set point has been reached or exceeded, and the relief system is still closed:

**Note:** If the relief valves fail to open, there is a risk the pipeline may be over-pressured. This condition is unlikely to happen on the discharge side of a station because the discharge controller and the discharge relief controller would have to fail simultaneously.

1. Immediately lower the setpoint to 100 psi.
  - a. If relief valves fail to open with the lowered setpoint, instruct the Pump Station CRO to take internal control and attempt to open the valves.
  - b. If relief valves fail to open with the lowered setpoint at PS03 or PS 9, attempt to open valves in MANUAL mode.
  - c. If the CRO is unable to open the relief valves from the SCP, ask the CRO to request the rover to proceed as quickly as possible to the malfunctioning valves and open them by hand if necessary, except at PS03 or PS09.
    - 1) Request the PS03 or PS09 Technician to open malfunctioning valves if they cannot be controlled from OCC.



## Department Operating Procedure Operations Control Center

Subject: Relief Valves Failed to Open at Setpoint (Abnormal Operating Procedure) (SR)      Number: OCC-6.02-SR      Page: 3 of 3  
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### References

- OCC-2.12-SR, Pipeline Shutdown (SR)
- 49 CFR 195.402, Procedural Manual for Operations, Maintenance, and Emergencies
  - 49 CFR 195.402(d)(1)(v)
  - 49 CFR 195.402(d)(4)
  - 49 CFR 195.402(d)(5)
- OM-1, Procedural Manual for Operations, Maintenance and Emergencies, Section 3, Abnormal Pipeline Operations
- SA-38, Corporate Safety Manual, Section SA-38, Corporate Safety Manual, Requirement 1.23, Incident Investigation, Analysis, and Reporting

### Records

|                                      |  |
|--------------------------------------|--|
| "Event Notification," (Form 2124)    | All records generated as a result of this document will be retained in accordance with the Alyeska Records Retention Schedule. |
| OCC Log Books                        |  |
| SCADA System Logged Events Print-Out |  |

### Revision History

| Revision | Date     | Revision Summary  |
|----------|----------|---|
| 1        | 02/04/08 | Updated with SR changes for PS03.   |
| 0        | 09/06/06 | Original issue of procedure with SR changes for PS 9.<br>Revision bars indicate where there are changes from the current OCC-6.02, Rev. 4.<br><br>This procedure will be cancelled once Operational Acceptance has been achieved and will become OCC-6.02 (the SR will be dropped from the procedure number). |

**PROBABLE VIOLATION 12:  
Maps and Records**

**PHMSA POSITION**

**Pertinent Regulation:**

49 CFR §195.404 Maps and Records

(b) Each operator shall maintain for at least 3 years daily operating records that indicate-

(2) Any emergency or abnormal operation to which the procedures under §195.402 apply.

**Findings:** Alyeska failed to maintain daily operating records as required by §195.404(b) by failing to indicate on its daily operating log who or what initiated each command action. When an individual at the Operations Control Center (OCC) takes a command action, the action is logged, and the log indicates who took action, but when the automated SIPPS (Safety Integrity Pressure Protection System) takes action, the logs do not indicate that SIPPS caused the command action. Instead, unidentified command log events are only presumed to be action taken by SIPPS.

**Warning:** With respect to Item 12, we have reviewed the circumstances and supporting documents involved in this case and have decided not to conduct additional enforcement action or penalty assessment proceedings at this time. Alyeska is advised to promptly correct these items. Failure to do so may result in Alyeska being subject to additional enforcement action.

**ALYESKA PIPELINE SERVICE COMPANY'S RESPONSE**

**Summary:**

Alyeska Pipeline Service Company (Alyeska) respectfully disagrees with PHMSA's findings that Alyeska failed to maintain daily operating logs as required by §195.404(b). Alyeska requests that this finding be withdrawn..

**Discussion:**

Alyeska agrees that its daily operating log, required by §195.404, does not indicate when Safety Integrity Pressure Protection System (SIPPS) causes a command action in the same manner as when an individual at OCC takes a command action. When an individual at the Operations Control Center (OCC) takes a command action, the action is logged and the log indicates who took action. The logs do not indicate that the SIPPS caused the command action.

Alyeska maintains that the log does not need to indicate that SIPPS took action, because neither §195.404(b), nor §195.402, incorporated into §195.404(b) by reference, require the log to indicate what took action. The regulations require that Alyeska periodically

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reviews the response of operator personnel to determine the effectiveness of the procedures controlling abnormal operations, normal operations and/ or emergencies and takes corrective action where deficiencies are found. The difference in how the information is captured does not diminish Alyeska's ability to investigate any events or incidents recorded in the daily operating log.

With respect to Finding 12, Alyeska respectfully requests that the finding be withdrawn because Alyeska maintains its daily operating records in compliance with §195.404(b).

**PROBABLE VIOLATION 13:**

**Maps and Records; Overpressure Safety Devices and Overfill Protection System**

**PHMSA POSITION**

**Pertinent Regulations:**

49 CFR §195.404 Maps and Records

(c) Each operator shall maintain the following records for the periods specified:

(3) A record of each inspection and test required by this subpart shall be maintained for at least 2 years or until the next inspection or test is performed, whichever is longer.

And

49 CFR §195.428 Overpressure safety devices and overfill protection system.

(a) Except as provided in paragraph (b) of this section, each operator shall, at intervals not exceeding 15 months, but at least once each calendar year, or in the case of pipelines used to carry highly volatile liquids, at intervals not to exceed 7-1/2 months, but at least twice each calendar year, inspect and test each pressure limiting device, relief valve, pressure regulator, or other item of pressure control equipment to determine that it is functioning properly, is in good mechanical condition, and is adequate from the standpoint of capacity and reliability of operation for the service in which it is used.

**Findings:** Alyeska failed to maintain complete records for each inspection and test of its pressure control equipment as required by §195.404(c). The electronic records system (PASSPORT) data for pressure control calibration “as found” and “as left” condition is only retained if test results are not acceptable. Without the “as found” and “as left” condition information from acceptable tests, the record that the instrument is functioning properly is incomplete. PHMSA notes that PASSPORT does not generally provide the same level of detail of inspections and tests as the paper records system previously in place.

**Warning:** With respect to Item 13, we have reviewed the circumstances and supporting documents involved in this case and have decided not to conduct additional enforcement action or penalty assessment proceedings at this time. Alyeska is advised to promptly correct these items. Failure to do so may result in Alyeska being subject to additional enforcement action.

## **ALYESKA PIPELINE SERVICE COMPANY'S RESPONSE**

### **Summary:**

Alyeska Pipeline Service Company (Alyeska) respectfully disagrees with PHMSA's finding that Alyeska failed to maintain complete records as required by §195.404(c). Alyeska requests that this finding be withdrawn.

### **Discussion:**

Alyeska uses PassPort to maintain complete records for inspection and testing of pressure control equipment. PassPort electronic records contain As Found/As Left information, as well as pertinent data points that were recorded during the performance of a Preventive Maintenance work order, when required by the procedure. Alyeska has an Alyeska Management System (AMS) that governs the required PassPort entries for electronic documentation of maintenance activities. (See Exhibit 36). During the last Review and Revision cycle of AMS-027-004, Attachment 1 was added to clarify Electronic Record documentation requirements, which include:

- ... If Implementer comments are not entered directly into system, record must be scanned and attached.
- ... Attached or referenced procedures: If the procedure was modified, the page(s) with affected steps are required to be retained electronically.
- ... As found/As left readings: 1) If the procedure does not require data recording and is performed with the system left in normal status, readings are not required to be retained electronically. 2) If the procedure requires data recording, it is required to be retained electronically, either by recording equipment readings related to the Work Order or by scanning the appropriate page(s) of the procedure.

With regard to Finding 13, Alyeska respectfully requests that this finding be withdrawn, as the clarification of these requirements provide complete records as required by §195.404(c).

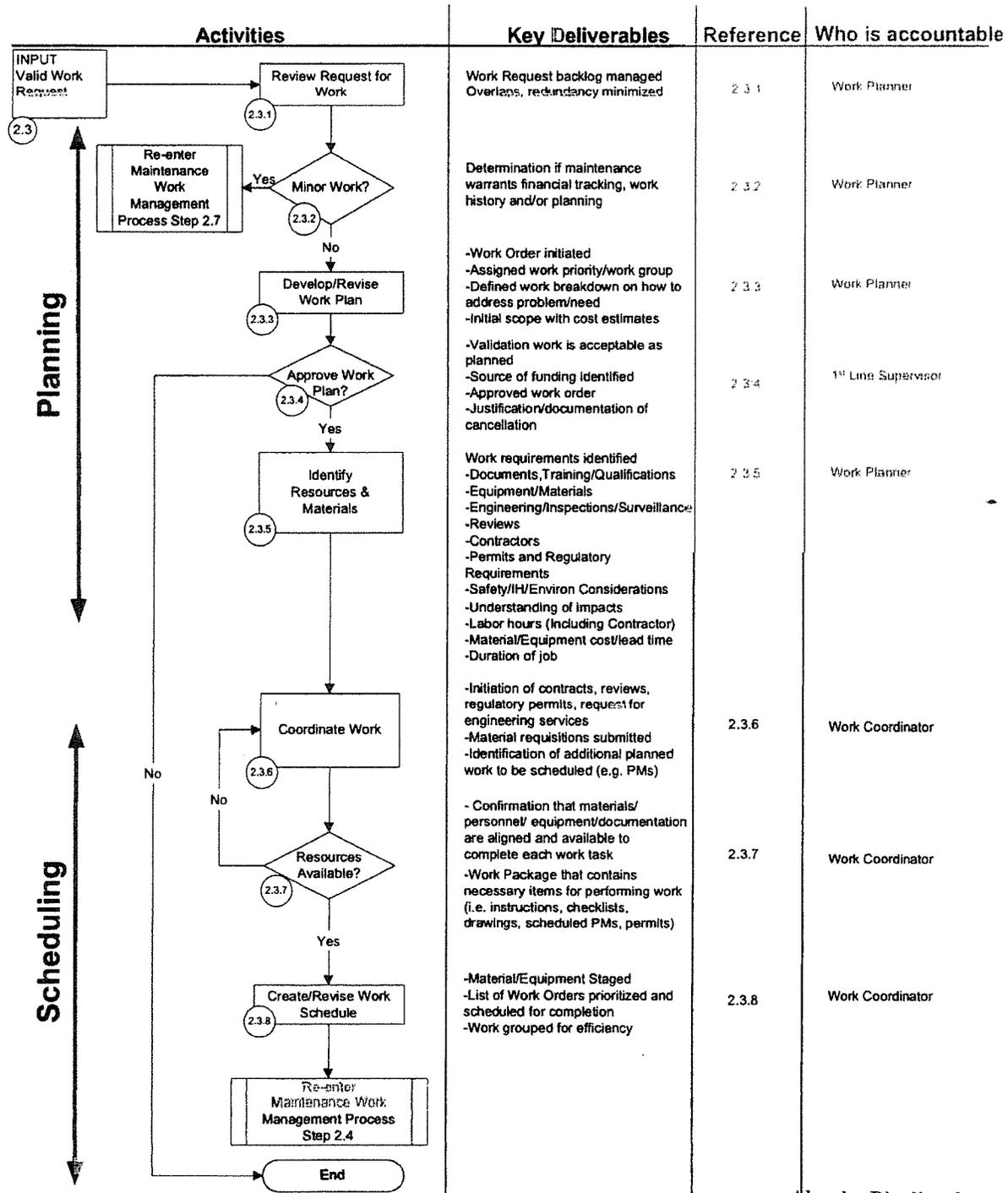
## **SUPPORTING DOCUMENTATION**

Exhibit 36 – AMS-027-004, Electronic Maintenance Records, Rev. 5, December 11,  
2006

**Maintenance Work Management Process**

| Activities and Process   | Key Deliverables  | Reference          | Who is accountable                    |
|--|---|--------------------|---------------------------------------|
| <p>INPUT<br/>Identified need to repair, perform minor modifications, service, test, monitor or maintain equipment, systems, facility, or TAPS Right-of-Way per operation or regulatory requirement</p> <p>(1.3)</p> <p>Define Problem/Need (2.1)</p> | <ul style="list-style-type: none"> <li>-Evaluation of problem/need, alternatives, scope, source, etc.</li> <li>-Informal risk analysis</li> <li>-Subject Matter Expert/Supervisor Review</li> <li>-Work Request               <ul style="list-style-type: none"> <li>* Equipment/System name, location</li> <li>* Unsatisfactory Condition</li> </ul> </li> <li>-Communication of work to appropriate personnel</li> </ul>    | <p>1.3<br/>2.1</p> | <p>Work Initiator</p>                 |
| <p>Valid Request? (2.2)</p> <p>Yes</p>   | <ul style="list-style-type: none"> <li>-Validation of Cost Effectiveness</li> <li>-Determination work is worthy of planning</li> <li>-Assurance request is complete</li> <li>-Identification of existing maint. strategy</li> <li>-Justification for cancellation</li> </ul>  | <p>2.2</p>         | <p>Work Planner</p>                   |
| <p>Work Planning &amp; Scheduling Sub-Process (2.3)</p> <p>No</p>  | <ul style="list-style-type: none"> <li>-Work Evaluated and Planned</li> <li>-Work Prioritized and Optimized</li> <li>-Resources Aligned with work</li> <li>-Cost/Time Estimated</li> <li>-Work Package Delivered for Approval</li> <li>-Materials ordered</li> <li>-Resource availability confirmed</li> <li>-Resources Allocated</li> <li>-Safety/IH/Environmental Conditions Identified</li> <li>-Work Scheduled</li> </ul> | <p>2.3</p>         |                                       |
| <p>Schedule Endorsed? (2.4)</p> <p>Yes</p>   | <ul style="list-style-type: none"> <li>-Source of funding identified</li> <li>-Determination value of work is justified, and acceptable as scheduled</li> <li>-Review and agreement by Maintenance and Operations on validity of schedule</li> <li>-Resources ready to proceed with work</li> </ul>   | <p>2.4</p>         | <p>Work Coordinator</p>               |
| <p>Communicate work plan and schedule (2.5)</p>  | <p>Worker understanding of scheduled work, requirements, hazards, and impacts</p>   | <p>2.5</p>         | <p>1<sup>st</sup> Line Supervisor</p> |
| <p>Valid Schedule? (2.6)</p> <p>No</p> <p>Enter Planning and Scheduling Sub-Process Step 2.3.8</p>   | <p>Validation against 'current' conditions that the work can be completed as scheduled</p>  | <p>2.6</p>         | <p>Implementer</p>                    |
| <p>Perform Work (2.7)</p> <p>No</p>  | <ul style="list-style-type: none"> <li>-Work Permits obtained</li> <li>-Job Hazard Analysis conducted</li> <li>-Completion comments recorded</li> <li>-Labor hours recorded</li> <li>-Supplemental work orders initiated</li> <li>-Documents redlined (i.e.PMs, drawings)</li> <li>-Work Permits closed</li> </ul>  | <p>2.7</p>         | <p>Implementer</p>                    |
| <p>Work Satisfactory? (2.8)</p> <p>Yes</p>   | <p>Agreement work completed as requested and planned and assurance that:</p> <ul style="list-style-type: none"> <li>-Work closed w/closing comments</li> <li>-Work history collected</li> <li>-Redlines / tag information disseminated to appropriate groups for updating</li> </ul> <p>Equipment/System returned to normal operating condition</p>   | <p>2.8</p>         | <p>1<sup>st</sup> Line Supervisor</p> |
| <p>Review/Trend work history (2.9)</p> <p>End</p>  | <p>Patterns and Trends of:</p> <ul style="list-style-type: none"> <li>-Asset Failures</li> <li>-Types of maintenance work planned and scheduled</li> <li>-Reduced impacts to environment and operations</li> <li>-Efficient allocation of resources</li> <li>-Recommendations to evaluate maintenance strategies</li> </ul>   | <p>2.9</p>         | <p>Maintenance Manager</p>            |

**Work Planning and Scheduling Sub-Process**





## 1.0 Introduction

### 1.1 Purpose

The Maintenance Work Management Process uses planning, scheduling, and trending techniques to minimize safety hazards, reduce environmental and cost impacts, improve maintenance strategies, and allocate resources to support operational and regulatory requirements for TAPS assets.

This process is used to manage maintenance for equipment, systems, facilities, right-of-way, and heavy and light vehicles.

Computerized systems are used to electronically enforce Maintenance Work Management process steps. The computerized systems are:

- (1) Indus PassPort for Pipeline, Marine Terminal, and SERVS maintenance,
- (2) ROWMIS for TAPS right-of-way maintenance, and
- (3) Fleet Anywhere for heavy and light vehicle maintenance.

These computerized systems provide security levels for appropriate approvals, documentation and traceability, and a repository for data. Information and guidelines for using these systems are located on the Company intranet.

### 1.2 Responsible and Accountable Resources

Each of the following represents a 'role' in the process. In some cases one person may perform multiple roles. The Work Initiator, Planner, and Coordinator roles are assigned within the computerized systems.

**Work Initiator** – Any TAPS employee who identifies a need to repair, perform minor modifications, service, test, monitor, or maintain equipment, systems, facilities, or the TAPS Right-of-Way per operating or regulatory requirement.

**Work Planner** – Any TAPS employee assigned responsibility to authorize work requests, initiate work orders, and define maintenance work tasks and resources required to address maintenance problems/needs.

**Work Coordinator** – Any TAPS employee assigned responsibility for assuring maintenance work activities are coordinated, prioritized, scheduled, and aligned with maintenance and operation resources.

**1st Line Supervisor** – Any TAPS employee responsible for supervising personnel impacted by maintenance work schedules, and/or perform scheduled maintenance work.

**Implementer** – Skilled worker assigned responsibility for performing maintenance work tasks.

**Maintenance Manager** – Person responsible for leadership/oversight of maintenance activities in an assigned area such as the Pipeline, Marine Terminal, SERVS, TAPS Right-of-Way, and Fleet Management.

**Maintenance Work Management Process Owner** – Chair of the Maintenance Strategy Board and responsible for providing central leadership and oversight of this process to ensure business controls



are in place to manage preventive, predictive, or corrective maintenance work on TAPS assets.

Detailed roles and responsibilities are located in Attachment 1 through Attachment 7.

### **1.3 Input**

The process begins with a need to repair, perform minor modifications, service, test, monitor, or maintain equipment, systems, facilities, or TAPS right-of-way to satisfy operational or regulatory requirements. The need is typically identified during projects, operations, surveillance, testing, and inspections, or when implementing a predictive or preventive maintenance strategy (*AMS-026, Maintenance Strategy Process*).

## **2.0 Process**

### **2.1 Define Problem/Need**

The Work Initiator defines the problem/need by identifying the unsatisfactory condition or compliance violation and determining the equipment name, description, tag number, location, and if known, the type of maintenance work (e.g., repair, replace, service, test, monitor) needed. The Work Initiator consults with supervisors and subject matter experts, as necessary, to evaluate risks, define work scope, and suggest possible solutions.

If the problem directly affects the safety of personnel, environment, or system integrity it is reported directly to the 1<sup>st</sup> Line Supervisor to ensure interim controls (See Attachment 8, "Interim Control Decision Criteria") are in place.

If the work scope is determined to be significant enough in expenditures, risks, or complexity to warrant project management and controls, a Project Work Request (*AMS-003, Project Management Process*) is generated and this process ends.

If the problem/need can be addressed by Maintenance resources, the Work Initiator writes a request for work. Work is requested electronically and is recorded in one of the computerized maintenance management systems. At a minimum, a request identifies:

- (1) Work Description (description of problem/need)
- (2) Asset Description (e.g., tag number, location, name plate information)
- (3) Job Type (e.g., repair, replace-in-kind, preventive, civil)
- (4) Need Date
- (5) Requestor Name (Who to contact for questions related to the work request)
- (6) Interim controls in place

The work request is then routed to a Work Planner.

### **2.2 Valid Request**

The Work Planner validates the completeness and accuracy of the request and initiates interim controls (See Attachment 8, "Interim Control Decision Criteria") when necessary. The Work Planner

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evaluates the complexity, cost and risk of the work scope, and if significant, elevates approval of the request to the 1<sup>st</sup> Line Supervisor.

If the Work Planner recognizes a failure trend, they request an Engineering analysis (*AMS-026, Maintenance Strategy Process*) to determine if a maintenance strategy should be created or revised.

If a Work Initiator has identified a potential compliance issue, the Work Planner consults with Engineering for confirmation and direction. If the work scope requires modifications to equipment or assets, the work request is assigned to Engineering, and becomes input to the Engineering Process, *AMS-004*, and the Maintenance Work Management process ends. The Work Planner determines if the problem/need can be cost effectively addressed by Maintenance resources.

If the work planner determines if the problem/need can be cost effectively addressed by Maintenance personnel, the work request is approved and evaluated for planning, scheduling, and/or implementation. If the request is not valid, the Work Planner documents their assessment, and notifies the Work Initiator.

## 2.3 Work Planning & Scheduling Sub-Process

Planning and scheduling reduces safety hazards, environmental and operational impacts and costs by coordinating activities and allocating resources based on priority.

### 2.3.1 Review Request for Work

The Work Planner reviews the work request in a timely manner to minimize backlog, eliminate redundancies, and identify opportunities to combine new requests with outstanding work requests or work orders. Work requests are either approved or canceled based on this review.

### 2.3.2 Minor Work

The Work Planner evaluates the work request to determine if it qualifies as 'minor' work. 'Minor' work does not warrant

- (1) formal planning,
- (2) financial tracking, and
- (3) recording of work history.

In addition, 'minor' work meets the following criteria:

- (1) takes less than 4 hours to complete (for Pipeline locations, this does not include planning, material requests, travel time, etc.)
- (2) is replacement-in-kind or involves no material or uses stocked/consumable material
- (3) requires no inspection
- (4) is non TAPS critical

Minor work labor hours are reported on blanket work orders.

Emergency work may be initiated as expedited/unplanned work orders, and sent directly to implementation. Expedited/unplanned work orders for emergency work can be initiated



after-the-fact to document the work performed and resources expended.

If the work is not minor or emergency, a work plan is developed.

### **2.3.3 Develop/Revise Work Plan**

The Work Planner develops and documents a work plan (e.g., Work Identifier or work order). The Work Planner defines a work breakdown structure of the tasks, estimated time and cost required to address the problem/need.

In reviewing the scope and tasks, the Work Planner may note or identify a compliance violation. If the Work Planner is uncertain if a violation exists, or uncertain of a method to address the violation, the Work Planner consults with Engineering for confirmation and direction. The assigned engineer documents the technical basis for their determination in the work order. Work order tasks that address compliance violations are designated as "CV," and reference a specific code or requirement. Once a compliance violation is validated and a work order task is designated as "CV", the task may only be canceled or closed when the work is completed or with authorization from the appropriate Regulatory Specialist.

### **2.3.4 Approve Work Plan**

The 1<sup>st</sup> Line Supervisor reviews the work plan for the scope of work, cost estimates, accounting codes, estimated resource and material requirements, and work priority. If the work scope is significant enough in expenditures, risks, or complexity to warrant project management and controls, a Project Work Request (PWR) is generated and this process ends.

The 1<sup>st</sup> Line Supervisor may request additional information from the Work Planner prior to approval of the plan. If the plan is approved, the Work Planner creates a detailed work package.

The 1<sup>st</sup> Line Supervisor may cancel the work plan if the scope is worthy of project management or the work can be performed under an existing project or work order. If canceled, the 1<sup>st</sup> Line Supervisor or Work Planner communicates the decision to the Work Initiator. If a compliance violation will be addressed by a project or existing work order, the project or work order number is noted and the CV work order remains open until the work is completed.

### **2.3.5 Identify Resources and Materials**

The Work Planner consults with the Work Initiator, Material Coordinators, Work Coordinators, Regulatory Specialists, Engineering, or others to understand the impact and verify the accuracy of the work scope, estimation of job duration, and resource commitment and cost. The Work Planner creates a detailed work plan by considering the significance and priority of work, safety, environmental, and quality requirements, and impact to operations. The specific content and level of detail contained in a work plan varies based on the level of risk and complexity of the work. The following is provided to guide the Work Planner through important points of consideration.

- (1) Are Contract services needed? (If so, identify source and estimate labor hours)
- (2) Is work non identical replacement-in-kind? (If so, reference *AMS-027-001, Replacement-in-Kind*, and include Form 10362, "Replacement in Kind Evaluation.")

- (3) What equipment operating status is necessary to perform work?
- (4) Are special certifications needed for implementers? (For example, Certification of Fitness, Fire System Permit, Welding Certification, Pressure Safety Valve)
- (5) Does work require verification by either an Electrical or Mechanical Administrator? (Reference *AMS-027-002, Certificate of Fitness*).
- (6) Is the work associated with fire detection and suppression systems? (If so, reference *AMS-027-003, Permit Requirements for Working on Fire and Gas Systems*.)
- (7) Are subtasks needed to update the equipment tag data (If so, reference *AMS-004-06, Alyeska Equipment Tag Philosophy and Update Procedure*).
- (8) Are subtasks needed to revise or create Bill of Material? (If so, reference *AMS-026-002, BOM Development Procedure*, and include Form 7248, "Bill of Materials Data Sheet.")
- (9) Are special work procedures (operating or maintenance, functional check out, welding, etc.) needed? (If so, collect those available, and state how others will be developed)
- (10) What material or equipment is needed and when will it be available?
- (11) What is the source of funding? (AFE or baseline)
- (12) What permits are needed (e.g., regulatory, building, temporary power, etc.)?
- (13) Are engineering reviews required? (Reference Attachment 9, "Work Activities Requiring Engineering Review") (Reference *AMS-004-05, Engineering Work Management Procedure for Non-Project Activities*, for requesting engineering)
- (14) Are engineering documents required prior to performing work? (Reference *AMS-004, Engineering Process*) (Reference *AMS-004-05, Engineering Work Management Procedure for Non-Project Activities*, for requesting engineering)
- (15) What supporting documents (e.g., data sheets, drawings, vendor manuals) are needed to perform to the work?
- (16) Are inspections required? (If so, include inspection documents, and identify labor source)
- (17) Are erosion and sedimentation control measures needed? (If so, consult with Environmental Generalist)
- (18) Will measuring and test equipment be used?
- (19) Will there be ground disturbances on ROW or in areas near fiber optic cable? (If so, identify required notifications, reference *MR-48, Trans-Alaska Pipeline Maintenance and Repair Manual*, Section 1.9, "Third Party Utilities.")
- (20) Does the work involve risk elements on the 'Safe Work Planning Checklist'? (Reference Form 0166, *Safe Work Planning Checklist*)

The Work Planner initiates requests for Contracts, Engineering/Regulatory Specialist reviews, Material Requisitions, or Inspections as identified in the work plan.

Once the Work Planner has compiled the information in a work plan, they put it on the appropriate schedule or forward it to the Work Coordinator for scheduling.

### **2.3.6 Coordinate Work**

The Work Coordinator periodically reviews the backlog of approved planned and Preventive Maintenance (PM) Work Orders to identify opportunities to group, prioritize, and schedule work. The Work Coordinator consults with the Work Planner, Implementer, Material Coordinator, and if required, other support service personnel to organize and schedule the work tasks identified.

If a regulatory-driven Preventive Maintenance Work Order can not be accomplished by its due date, the Work Coordinator documents the reason for deferral and informs the Regulatory Specialist who notifies the appropriate agency. Once the Regulatory Specialist informs the Work Coordinator of the agency's response, the Work Coordinator reschedules the PM as appropriate.

### **2.3.7 Resources Available**

The Work Coordinator confirms availability of resources prior to scheduling. Confirmation includes assuring that required documents are assembled, materials and equipment are on site or expected to arrive in time for implementation, and that necessary personnel (i.e., Inspectors, Contractors, Technicians) are available to implement the scope of work.

If resources are not available, the work is placed in a 'hold' status.

### **2.3.8 Create/Revise Work Schedule**

The Work Coordinator may use reporting tools, scheduling software, or other methods to create the work schedule. The schedule specifies the date(s) or date range and crew(s) that will implement the work order. The Work Coordinator may identify specific personnel for each task in order to verify that the appropriate qualified individual is available. In addition, work progress and priorities are reviewed to ensure resources (personnel, tools, and equipment) are effectively used.

After confirmation that resources necessary to implement the scope of work are available, the Work Coordinator considers the following to group the work:

- (1) Work priority
- (2) Desired completion date
- (3) Current projects and program activities (e.g. inspections, corrosion, or tank programs)
- (4) Location/Equipment (e.g. can multiple jobs in a single location be performed under the same isolation or using the same equipment)
- (5) Transportation requirements (e.g. light vehicles and lodging availability)
- (6) Operations and Maintenance needs (e.g. some maintenance may not be allowed while sampling or proving is being performed at metering facilities)
- (7) Outage or shutdown priority (e.g. is the work best performed during a scheduled outage or shutdown)
- (8) Seasonal condition that best supports the work

Based on the grouping of work and review of backlog an efficient and effective work schedule is created. The review of the schedule and backlog may be conducted daily, weekly, or monthly



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depending on the complexity and criticality of the work plan. Operations personnel assist in setting the priorities and coordinating equipment outages.

The Work Coordinator ensures material and equipment is staged and provides a list of prioritized work orders and schedule for completion to the 1<sup>st</sup> Line Supervisor of the Implementers.

## 2.4 Schedule Endorsed

The Work Coordinator is responsible for obtaining an endorsement of the work schedule from personnel impacted (e.g., Operations and Maintenance). The endorsement is typically obtained through an informal or formal meeting with those impacted, depending on the work scope. If the schedule is not endorsed, the Work Coordinator adjusts the schedule.

## 2.5 Communicate Work Plan and Schedule

The 1<sup>st</sup> Line Supervisor communicates the work plan and schedule to the Implementers. This communication provides the opportunity to improve the plan and identify hazards and impacts of performing the work at the work site.

## 2.6 Valid Schedule

The Implementer(s) review and validate the plan and schedule with current conditions (i.e., time may have lapsed since development of the schedule). If the work plan/schedule is impacted by unforeseen circumstances, it is put on hold and rescheduled (Return to Section 2.3.8 on page 8) by the Work Coordinator. Examples of what may impact the schedule are bad weather, emergencies, shut-downs, safety hazards, or unplanned events. If there are no impacts, the Implementer begins the work as scheduled.

## 2.7 Perform Work

The Implementer is responsible for performing the work as directed. Prior to beginning, job hazard analysis is performed (*AMS-017, Risk Management Process*) and work permits are obtained (Corporate Safety Requirement 1.5 Work Permit System, *SA-38*). Anytime during the course of the work the need for engineering is identified, changes to existing engineering requirements are identified, as-found conditions make the plan unworkable, or the work instructions are insufficient to guide the work, the Implementer consults with the Work Coordinator or Engineer to determine if a revision to the work plan or schedule is necessary. The Implementer is also responsible for informing the 1<sup>st</sup> Line Supervisor of equipment tag number errors and redlining procedures, PMs and drawings to reflect technical discrepancies and safety concerns noted during the work.

If a portion of the scope of a Preventive Maintenance Work Order can not be completed by its due date because of unforeseen circumstances such as weather, safety conditions, or parts unavailability, a Supplemental Work Order is generated. New work which is identified and is beyond the scope of work of the PM should be initiated with a separate work request. Supplemental Work Orders will reflect an appropriate priority relevant to the importance of the PM. When it appears that a regulatory-driven PM deadline will be exceeded, the 1st Line Supervisor (or designee) requests deferral from the appropriate Regulatory Specialist. Once approval is given by the Regulatory Specialist, the PM is deferred.



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The Implementer is responsible for providing the necessary information to document the work. Work completion comments are recorded in the appropriate Company maintenance management system. For each task the Implementer typically answers the following as completion comments:

- (1) What was done? (task performed)
- (2) When was it done? (date, meter reading, etc.)
- (3) Where was it done? (shop, online, vendor)
- (4) Who performed the work? (initials and badge number)
- (5) How was it performed? (any special events or problems?)
- (6) What drawings and procedures were redlined?

The Implementer also ensures all labor hours, failure and action taken codes, measuring and test equipment (M&TE) used, equipment readings, Preventive Maintenance exceptions, and Uniquely Tracked Commodity (UTC) change-outs are recorded in the appropriate Company computerized maintenance management system.

### 2.7.1 Instrument Calibration Records

At the completion of a successful calibration, the Technician will attach a calibration sticker to the device, on a tag attached to the device, or on a convenient place near the device. This calibration/verification sticker includes the following information:

- instrument tag number (or other unique identifier);
- initials of the individual performing the calibration;
- date of calibration; and
- calibrated range, set point or results of functional checkout, as appropriate.

**Note:** Individual fire and gas detectors need not have calibration stickers affixed to them. Functional checkout results of these instruments is recorded on the PM/Work Order.

### 2.7.2 Out of Tolerance Instruments

If a process instrument is found to be out of tolerance, the calibration interval has been exceeded, or the instrument has been replaced, then the instrument is calibrated using appropriate procedures. If the instrument can not be brought into tolerance, it is replaced.

If a process instrument, identified per AMS-026, is found to be out of tolerance during its use or calibration, the Responsible Engineer will perform an impact assessment to determine the impact on facilities and/or equipment, and any necessary corrective actions to be taken. This impact assessment will be filed with the work order that records the out of tolerance condition.

## 2.8 Work Satisfactory

The Implementer notifies the 1<sup>st</sup> Line Supervisor when work is complete. The 1<sup>st</sup> Line Supervisor is responsible for ensuring that work was performed satisfactorily and addressed the problem/need by reviewing the comments, visiting the work site, and consulting with the Implementer. In addition the

1<sup>st</sup> Line Supervisor ensures:

- (1) Completion comments are recorded in the appropriate Company maintenance management system,
- (2) required inspections are satisfactorily completed prior to returning the item to service,
- (3) Maintenance item tags (e.g. danger, caution, isolation) have been removed if applicable,
- (4) Supplemental Work Orders are generated to complete unfinished PM work.

If the work is not satisfactory, the 1<sup>st</sup> Line Supervisor tells the Implementer what has to be done for the work to be acceptable.

The 1<sup>st</sup> Line Supervisor ensures redlined documents (e.g. drawings, procedures, PMs) are forwarded to Document Specialists for dissemination to appropriate work groups. For example, redlined drawings are sent to Engineering for review and approval (*AMS-004, Engineering Process* and *AMS-009, Alyeska Master Drawing Update Process*). Redlined procedures are sent to the Document Owner (*AMS-001, Documents Process*) and redlined Preventive Maintenance Work Orders are sent to the PM Specialist (*AMS-026-001, Preventive Maintenance (PM) Change/New Process*). If document retention and record archival is required, *AMS-016, Records Management Process* is followed. See *AMS-027-004, Electronic Maintenance Records* for additional information on records created under *AMS-027, Maintenance Work Management Process* and *AMS-004-01, TAPS Engineering Guidance Manual* for modification files.

After work is determined to be satisfactory the Work Planner ensures work completion comments have been input and records are complete.

## 2.9 Review/Trend Work History

Periodically the Maintenance Manager reviews work history to identify patterns or trends of asset failures and the types of maintenance work (e.g., repair, minor modifications, emergency, preventive, predictive monitoring, etc.) being planned and scheduled. Work history is retrieved from maintenance management systems and understanding of the patterns or trends is gained through communication with Implementers, Operators, Work Planners, and Work Coordinators.

Results of trending and analysis are used to identify opportunities for reducing environmental and operational impacts, and improving resource allocation effectiveness. If trending identifies the need to improve or change maintenance strategies or implementation methods, the Maintenance Manager uses *AMS-026, Maintenance Strategy Process*.

## 3.0 References

*AMS-001, Documents Process*  
*AMS-003, Project Management Process*  
*AMS-004, Engineering Process*  
*AMS-004-01, TAPS Engineering Guidance Manual*  
*AMS-004-05, Engineering Work Management Procedure for Non-Project Activities*  
*AMS-004-06, Alyeska Equipment Tag Philosophy and Update Procedure*  
*AMS-009, Alyeska Master Drawing Update Process*



Title: Maintenance Work Management Process

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- AMS-016, Records Management Process*
- AMS-017, Risk Management Process*
- AMS-026, Maintenance Strategy Process*
- AMS-026-001, Preventive Maintenance (PM) Change/New PM Process*
- AMS-026-002, Bill of Materials Development*
- AMS-027, Maintenance Work Management Process*
- AMS-027-001, Replacement-in-Kind Process*
- AMS-027-002, Certificate of Fitness*
- AMS-027-003, Permit Requirements for Working on Fire and Gas Systems*
- AMS-027-004, Electronic Maintenance Records*
- AMS-028, Emergency Response Process*
- AMS-031, Inspection and Testing Process*

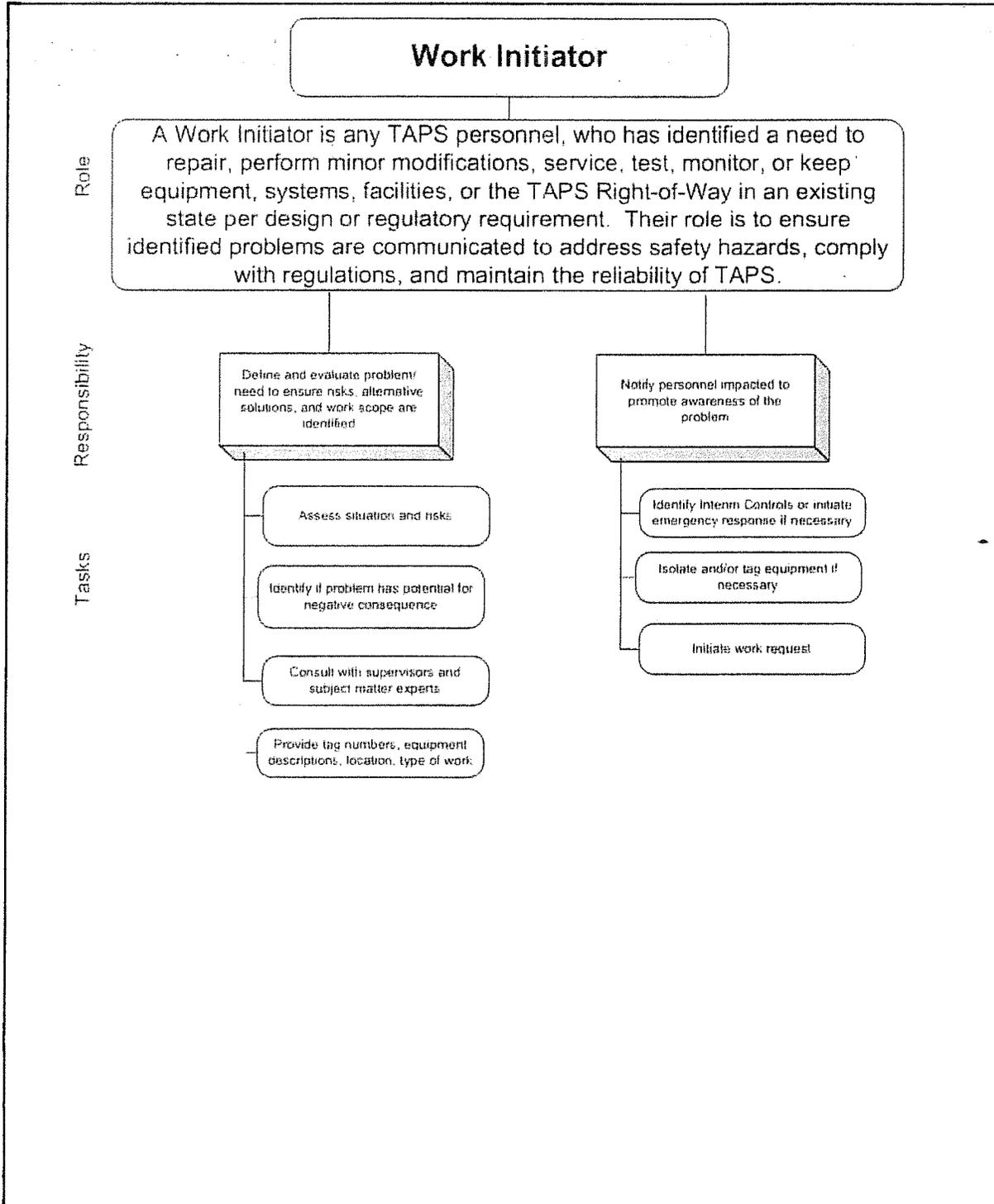
**4.0 Records**

| Records   | Record Holder  | Retention Period |          | File Code |
|---|--|------------------|----------|-----------|
|   |  | Interim          | Archival |           |
| Completed Procedures                                  | All records generated as a result of this document will be retained in accordance with the Alyeska Records Retention Schedule. |                  |          |           |
| Work Orders per AMS-027                               |  |                  |          |           |
| Completed Safe Maintenance Procedures                 |  |                  |          |           |
| Form 1241, Preventive Maintenance (PM) Change Request |  |                  |          |           |

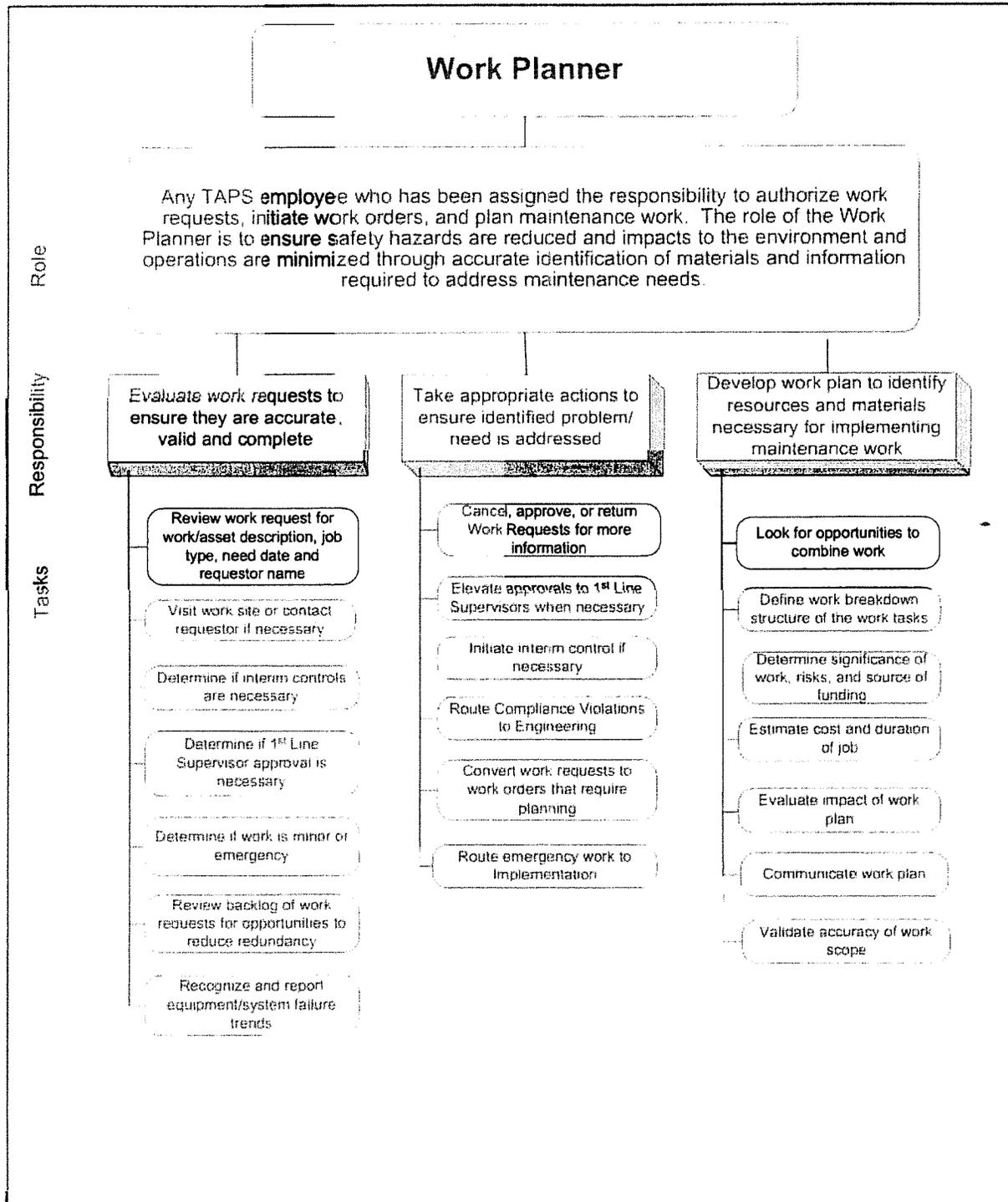
**5.0 Revision History**

| Approved by: William Amberg, Valdez Marine Terminal Maintenance Manager |          |   |
|---|----------|---|
| Revision  | Date     | Revision Summary  |
| 5   | 12/11/06 | Scheduled Full Review. Section 2.8. provided clarity regarding records retention and archival. Eliminated redundancy in Attachment 8. Corrected initial publication date. |
| 4   | 11/2/05  | Replaced Attachment 3 with correct graphic. Correction in Section 2.2.  |
| 3   | 8/31/05  | Scheduled Full Review. Added Sections 2.7.1 and 2.7.2 (excerpts from soon to be cancelled PIP 12.2.) Updated title of reference, AMS-004-06.                              |
| 2   | 7/12/05  | Revised to correct as a result of the Alyeska Management System (AMS) Assessment.   |
| 1   | 1/5/05   | Revised to correct references.  |
| 0   | 9/20/04  | Initial publication   |

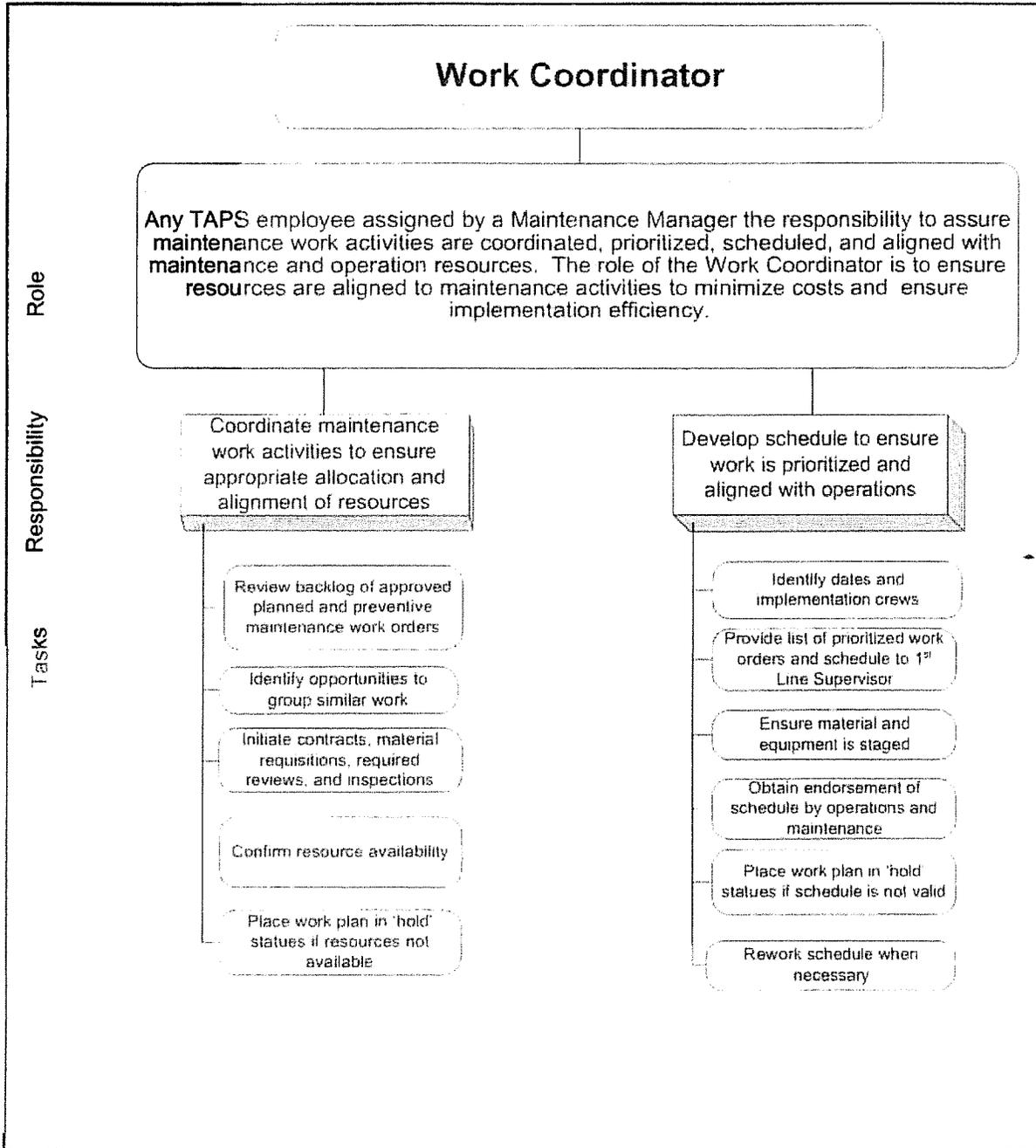
**Attachment 1. Roles and Responsibilities - Work Initiator**



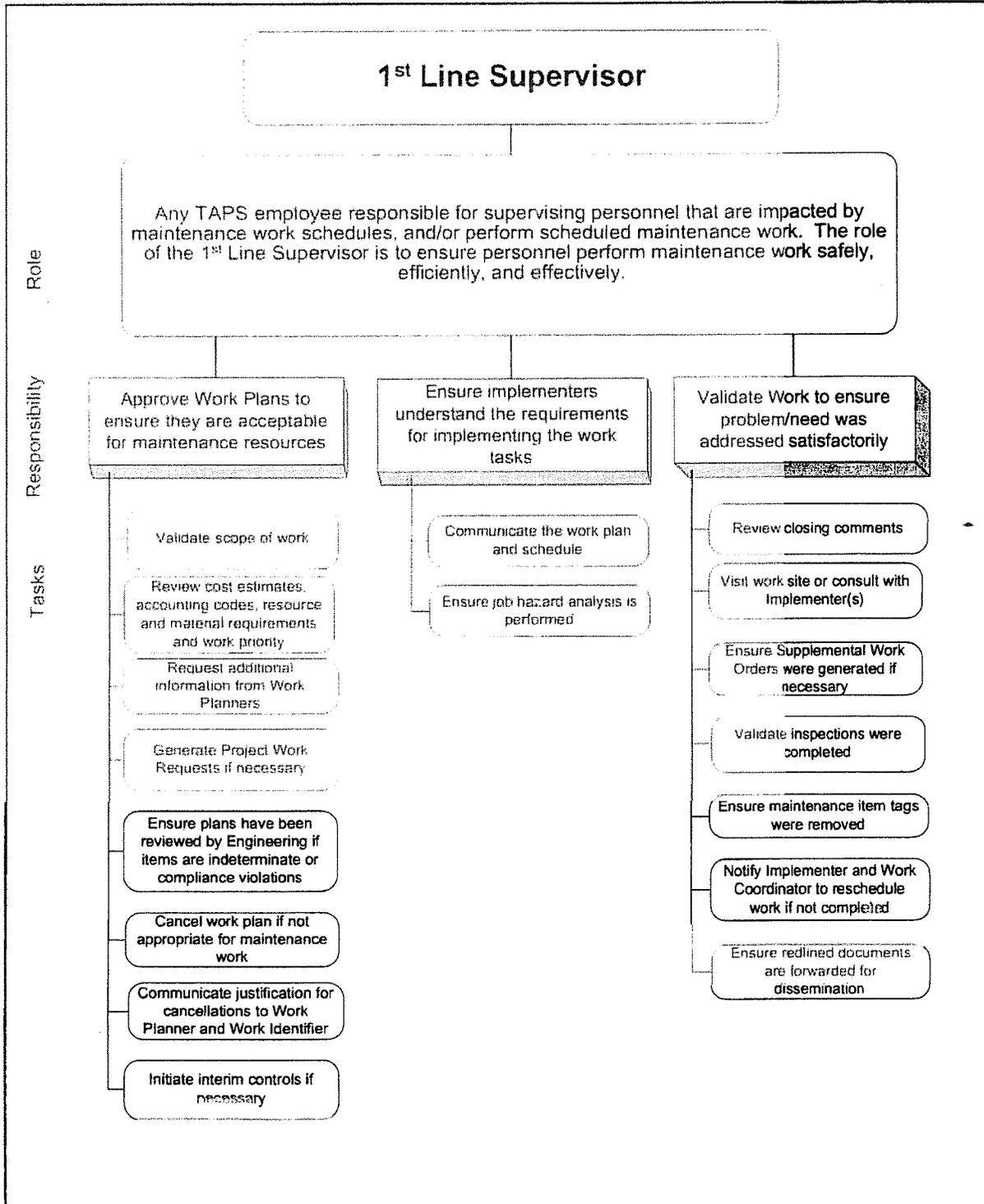
**Attachment 2. Roles and Responsibilities - Work Planner**



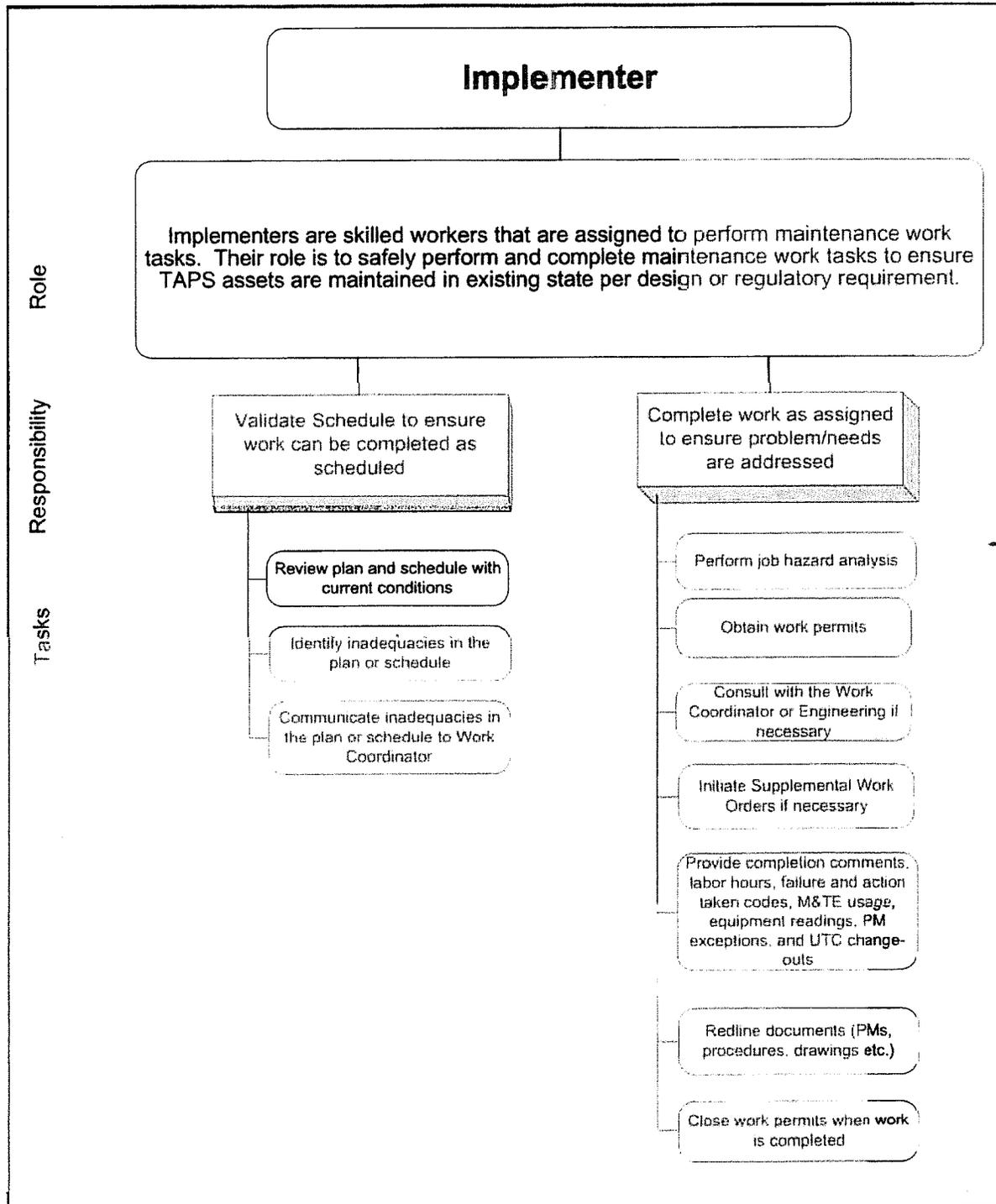
**Attachment 3. Roles and Responsibilities - Work Coordinator**



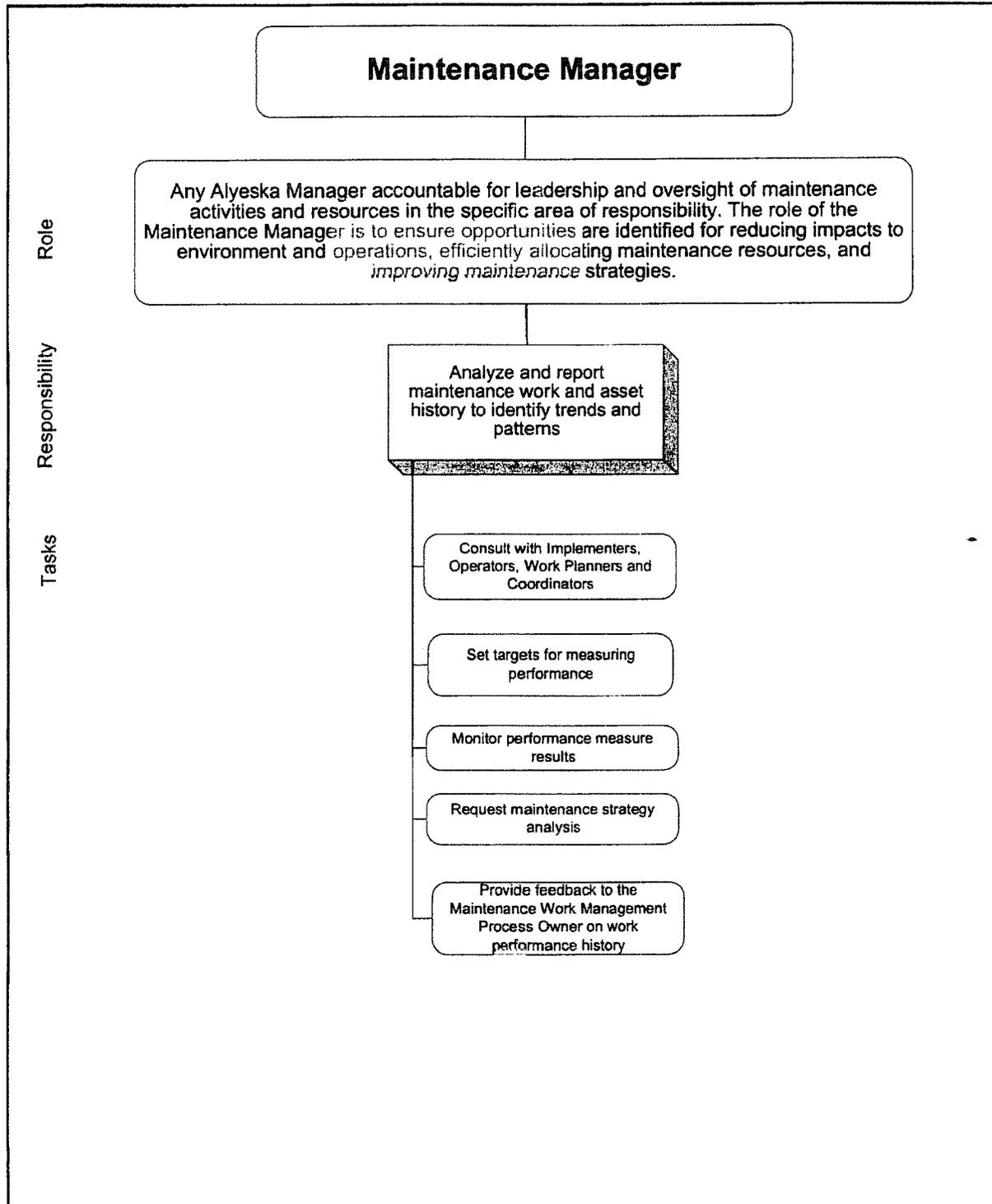
**Attachment 4. Roles and Responsibilities - 1st Line Supervisor**



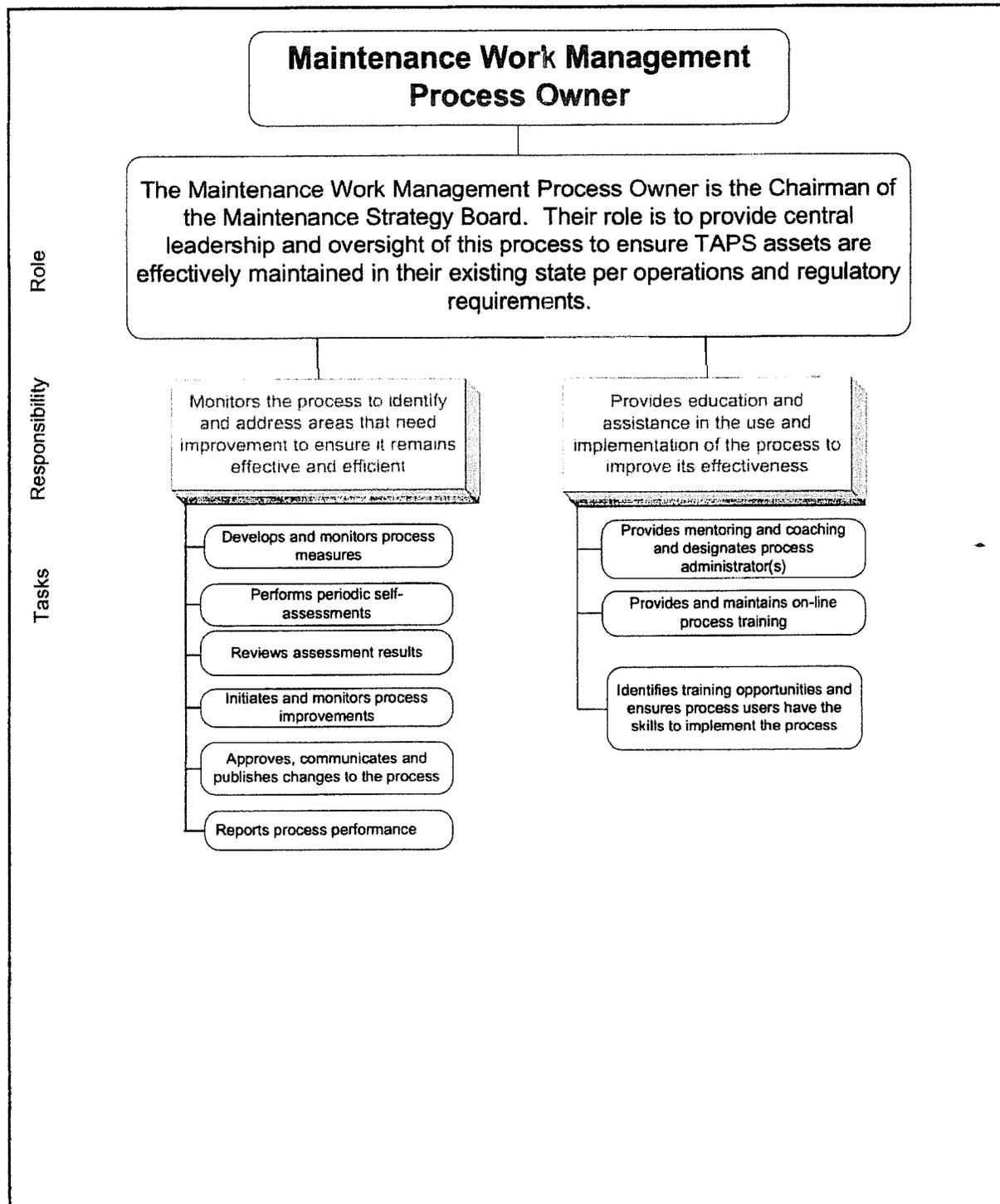
**Attachment 5. Roles and Responsibilities - Implementer**



**Attachment 6. Roles and Responsibilities - Maintenance Manager**



**Attachment 7. Roles and Responsibilities - Maint. Work Mgmt. Process Owner**





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### **Attachment 8. Interim Control Decision Criteria**

When determining the interim controls for an item, the following questions are asked:

- 1) Will the continued use of the item pose a safety hazard?
- 2) Will the continued use of the item substantially impact system integrity?
- 3) Will the continued use of the item adversely affect the environment?
- 4) Will the continued use of the item cause substantial degradation to asset?
- 5) Will the continued use of the item result in a Notice of Violation (NOV)?
- 6) Will the item need to have a functional checkout prior to being placed in service?
- 7) Will the item be un-traceable in the event the final disposition calls for the removal/replacement of the item?

If the answer to all of the above questions is *no*, then an item may be used without restrictions.

If the answer to any of the above is *yes*, then determine:

- 1) Does the item need to be held or removed from service to prevent inadvertent use? If yes, identify the item to ensure that it is held or removed from service.
- 2) Does the item need restrictive instructions for moving, handling, using, or processing? If yes, implement interim controls to restrict the use of the item. Describe measures to be taken while the item is in use. Some examples include, "operate under reduced pressure," "use protective absorbent in case of leaks," "monitor this item for . . ."

If physical tagging of the item is unrealistic, the item may be isolated physically, or through an isolation device or method (See SA-38, Corporate Safety Manual), or by documenting a communication in the appropriate control room.

**Note:** If physical tagging of the item is unrealistic, the item may be isolated physically, or through an isolation device or method (See SA-38, *Corporate Safety Manual*), or by documenting a communication in the appropriate control room. If there is more than one control point, consider hanging multiple tags.



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### **Attachment 9. Work Activities Requiring Engineering Review**

The following are typical examples of work that require engineering review prior to implementing maintenance work. Engineering recommendations, modification instructions or inspection requirements are normally documented through an engineering work order task. Review of work completed under the Maintenance Work Management Process is documented in the computerized maintenance management system by the engineer.

- 1) An item that is being replaced with an item that is not an exact replacement, unless the replacement item is listed on the Bill of Materials or is an alternative replacement item pre-approved by Engineering
- 2) Use-As-Is resolution to an as found maintenance item that will not be repaired and does not meet other criteria in this attachment.
- 3) An item is indeterminate (i.e. it cannot be determined that an item's existing state meets requirements due to insufficient documentation or deficient processing)
- 4) A modification to an existing system, including process software. This includes installation or removal of existing equipment
- 5) Modification or repairs on the structural components of process enclosures, buildings, bridges, etc.
- 6) Welding
- 7) New installations or modification of electrical or instrument systems
- 8) Bolt-ups on crude oil systems greater than 12 inches
- 9) Coatings on process systems
- 10) Structural concrete or grouting
- 11) Excavating and/or back-filling under roadways or equipment including around buried piping or utilities
- 12) Secondary containment lining repairs
- 13) Repair or reconditioning of lifting devices unless conducted by a manufacturer's representative or other certified individual
- 14) When test procedures are needed, e.g., pressure testing, electrical testing, concrete testing or functional checkout
- 15) When installing temporary power and/or temporary electrical installations
- 16) When inspection criteria need to be assigned (See *AMS-031, Inspection and Testing Process*)
- 17) Completed as-built markups (redline drawings)
- 18) For process control software or configuration changes (Reference *CS-238, Control System Software Management*) including software for equipment operation or protection, or for emergency shutdown
- 19) For changes to any fire detection/suppression system or gas detection system software configuration

The following are examples of work that generally do not need to be reviewed by engineering:

- 1) Routine building and grounds maintenance
- 2) Cosmetic repairs to buildings or equipment
- 3) Repair or rework of existing equipment or systems using exact replacement parts or parts pre-approved by engineering

**PROBABLE VIOLATION 14:  
Operator Qualification Program**

**PHSMA POSITION**

**Pertinent Regulation:**

49 CFR §195.505 Each operator shall have and follow a written qualification program. The program shall include provisions to:

- (h) After December 16, 2004, provide training, as appropriate, to ensure that individuals performing covered tasks have the necessary knowledge and skills to perform the tasks in a manner that ensures the safe operation of pipeline facilities; and...

**Findings:** Alyeska does not provide training in detecting and mitigating stress or fatigue that could impact controller performance to ensure safe operation of the pipeline facilities as required by §195.505.

**Warning:** With respect to Item 14, we have reviewed the circumstances and supporting documents involved in this case and have decided not to conduct additional enforcement action or penalty assessment proceedings at this time. Alyeska is advised to promptly correct these items. Failure to do so may result in Alyeska being subject to additional enforcement action.

**ALYESKA PIPELINE SERVICE COMPANY'S RESPONSE**

**Summary:**

Alyeska Pipeline Service Company (Alyeska) does not dispute PHMSA's finding that Alyeska had not provided stress or fatigue training to its controllers prior to the September 11, 2006 Hazardous Liquid, Control System Overview Audit. This training was provided to OCC controllers in March 2007.

**Discussion:**

On March 27 and 28, 2007, Alyeska provided training titled "Managing Fatigue in APSC Operations: Enhancing Safety & Performance" to OCC Controllers and other interested personnel. (See Exhibit 37). This course covered four major areas related to stress and fatigue, including:

- Fatigue risks in pipeline operations: effects on performance, alertness and health
- The physiological factors that underlie fatigue: sleep loss, sleep disorders, and circadian rhythm disruption
- Shift work: scheduling challenges and approaches
- Maximizing alertness both on and off the job: fatigue countermeasure strategies. (See Exhibit 38).

NOPV CPF 5-2007-5041  
Finding No. 14: Operator Qualification Program  
2/26/08

With regard to Finding 14, Alyeska respectfully requests that the warning be withdrawn as Alyeska has already provided the required training.

**SUPPORTING DOCUMENTATION**

Exhibit 37 – External 0221 Training Roster for March 27 and 28, 2007

Exhibit 38 – Training Course Description – 0221 – Managing Fatigue in APSC  
Operations: Enhancing Safety & Performance

# Item Status

## Items

Item:

EXTERNAL 0221 (Rev 2/6/2007 03:30 PM America/Anchorage)

Description:

0221 - Managing Fatigue in APSC Operations: Enhancing Safety & Performance

| Students | Student ID | Student Name         | Completion Date                         | Status                     |
|----------|------------|----------------------|---|----------------------------|
|          | 138578     | WILSON, MICHAEL L    | 3/27/2007 12:00 PM<br>America/Anchorage | External Course - Attended |
|          | 149849     | CONROY, SCOTT A      | 3/27/2007 12:00 PM<br>America/Anchorage | External Course - Attended |
|          | 158048     | DERIFIELD, MICHAEL P | 3/28/2007 05:00 PM<br>America/Anchorage | External Course - Attended |
|          | 163345     | STARBUCK, CLAY D     | 3/27/2007 12:00 PM<br>America/Anchorage | External Course - Attended |
|          | 164244     | HIEBERT, VALENCIA A  | 3/28/2007 12:00 PM<br>America/Anchorage | External Course - Attended |
|          | 164285     | PARK, JEFFREY K      | 3/28/2007 05:00 PM<br>America/Anchorage | External Course - Attended |
|          | 165811     | GABRIELSON, KRIS E   | 3/28/2007 05:00 PM<br>America/Anchorage | External Course - Attended |
|          | 165985     | PRESTON, ROBERT      | 3/27/2007 05:00 PM<br>America/Anchorage | External Course - Attended |
|          | 167486     | RUBINCAN, TERRY I    | 3/28/2007 12:00 PM<br>America/Anchorage | External Course - Attended |
|          | 168179     | MORRESEY, LEO K      | 3/28/2007 12:00 PM<br>America/Anchorage | External Course - Attended |
|          | 168427     | MARTIN, JOHN C       | 3/27/2007 05:00 PM<br>America/Anchorage | External Course - Attended |
|          | 172049     | GEEERDES, MONTE S    | 3/27/2007 12:00 PM<br>America/Anchorage | External Course - Attended |
|          | 173112     | ELDRIDGE, ROBERT K   | 3/28/2007 05:00 PM<br>America/Anchorage | External Course - Attended |
|          | 180158     | GLENNY, NANCY S      | 3/27/2007 05:00 PM<br>America/Anchorage | External Course - Attended |
|          | 180372     | PATRICK, GOODMAN A   | 3/27/2007 12:00 PM<br>America/Anchorage | External Course - Attended |
|          | 181412     | TIULANA, ELIZA G     | 3/28/2007 12:00 PM<br>America/Anchorage | External Course - Attended |

| <b>Students</b> | <b>Student ID</b> | <b>Student Name</b>    | <b>Completion Date</b>                  | <b>Status</b>              |
|-----------------|-------------------|------------------------|---|----------------------------|
|                 | 181669            | GLENNY III, EDMUND J   | 3/27/2007 05:00 PM<br>America/Anchorage | External Course - Attended |
|                 | 181891            | WILSON JR, JAMES W     | 3/27/2007 05:00 PM<br>America/Anchorage | External Course - Attended |
|                 | 182394            | TAPANGCO, SATURNINO B  | 3/27/2007 12:00 PM<br>America/Anchorage | External Course - Attended |
|                 | 183012            | STOLTENBERG, CYNTHIA K | 3/28/2007 12:00 PM<br>America/Anchorage | External Course - Attended |
|                 | 183889            | VANNEST, KARL E        | 3/28/2007 12:00 PM<br>America/Anchorage | External Course - Attended |
|                 | VC1532            | WALLER, DONNA L.       | 3/27/2007 12:00 PM<br>America/Anchorage | External Course - Attended |

# Item Data

## Item

**Item:** EXTERNAL 0221 (Rev 2/6/2007 03:30 PM America/Anchorage)  
**Item Title:** 0221 - Managing Fatigue In APSC Operations: Enhancing Safety & Performance  
**Domain:** Default Public Access Domain  
**Source:** External Vendor  
**Requirement Type:** Other Technical Training  
**Creation Date:** 2/6/2007  
**Contact:** Initiator: Jarid Kling  
**Safety Related:** No  
**Active:** Yes  
**Lesson:**  
**Description:** The workshops will focus on four major areas: 1) fatigue risks in pipeline operations: effects on performance, alertness and health, 2) the physiological factors that underlie fatigue: sleep loss, sleep disorders, and circadian rhythm disruption, 3) shift work: scheduling challenges and approaches, and 4) maximizing alertness both on and off the job: fatigue countermeasure strategies.  
**Comments:**  
Vendor: Alertness Solutions  
1601 S. DeAnza Blvd.  
Suite 200  
Cupertino, CA 95014  
Dr Mark Rosekind  
President & Chief Scientist  
Ph: (408) 253-1019  
Fax: (408) 253-2317  
Admin: Collette Staump  
www.alertsol.com  
**Audience:** Primarily Controllers and Controller Supervisors, and any APSC personnel that can attend.  
**Cost (\$):** 0.00  
**Price (\$):** 0.00

### Revision Information

**Revision Date:** 2/6/2007 03:30 PM America/Anchorage  
**Revision Number:**  
**Reviser:**  
**Approved:** Yes  
**Approval Date:** 2/6/2007  
**Approver:** No Owner Needed

**Learning Requirements Information**

Initial Period:  
Initial Number:  
Initial Basis:  
Retraining Period:  
Retraining Number:  
Retraining Basis:

**Delivery Information**

Length (hours):  
Prep Time (hours):  
Max Registration:  
Min Registration:

**Credit Information**

Credit Hour: 4.00  
Contact Hour: 4.00  
CPE:

**PROBABLE VIOLATION 15:  
Operator Qualification Database**

**PHMSA POSITION**

**Pertinent Regulation:**

49 CFR §195.507 Recordkeeping

- (b) Records supporting an individual's current qualification shall be maintained while the individual is performing the covered task. Records of prior qualification and records of individuals no longer performing covered tasks shall be retained for a period of five years.

**Findings:** Alyeska's operator qualification (OQ) database reflects inaccurate information about the current qualification of individuals. The database shows that several controllers are overdue for required refresher training to maintain their qualifications, when it appears that these controllers are actually qualified. One such record shows an individual who, in September 2006, was 7 years 10 months late regarding the completion of all items in JR-3118, Operations Control Center Controller Requalification. This appears to be a problem with the database as this time period would have required the individual to be requalified prior to the requirement for an OQ program. Alyeska has acknowledged that the database does not work properly. Alyeska has identified the need to remedy the problem.

**Warning:** With respect to Item 15, we have reviewed the circumstances and supporting documents involved in this case and have decided not to conduct additional enforcement action or penalty assessment proceedings at this time. Alyeska is advised to promptly correct these items. Failure to do so may result in Alyeska being subject to additional enforcement action.

**ALYESKA PIPELINE SERVICE COMPANY'S RESPONSE**

**Summary:**

Alyeska Pipeline Service Company (Alyeska) respectfully disagrees with PHMSA's finding that Alyeska's Operator Qualification (OQ) database contains inaccurate information. The eLITE Database is accurate and Alyeska has not acknowledged otherwise. Alyeska requests that this finding be withdrawn.

**Discussion:**

Section 195.507 requires qualification records to be maintained while an individual is performing a covered task and records of prior qualification and records of individuals no longer performing covered tasks to be retained for a period of five years. Operations Control Center (OCC) personnel are assigned training tasks and Performance Checklists (PC) through curricula in Alyeska's Learning Management Database System, eLITE. Curricula are groupings of classes, courses, and PCs, usually done by job function or

location. OCC personnel are assigned DOT Covered PCs through curriculum JR-3119, OCC DOT Requalification – OQ (see Exhibit 39). However, curriculum JR-3118, OCC Controller Requalification – OQ, cited in this finding does not contain any DOT Covered tasks. It contains core and non-covered tasks only. (See Exhibit 40). Therefore, JR-3118 is not subject to §195.507.

Alyeska acknowledges that an internal audit discovered that OCC was not following the Alyeska OQ Program requirement for Pipeline Controller Re-Qualification on DOT Covered Tasks. However, no DOT Covered tasks were actually performed by non-qualified individuals at any time.

During Training & Qualification Processes Audit 0614, conducted from July 20 through September 13, 2006, of the OCC OQ Program, Alyeska discovered that OCC was not following the Alyeska OQ Program requirement for Pipeline Controller Re-Qualification on DOT Covered Tasks every three (3) years (1095 days) from last qualification. At that time, OCC was using a three (3) calendar-year schedule for training and requalification. In contrast, eLITE calculates 1095 days from the actual date of last qualification. Using the three (3) calendar-year format to schedule and deliver training classes and requalification sessions resulted in exceeding 1095 days on certain OCC Controller PCs.

Management was notified in August 2006, while the internal audit was ongoing. OCC corrected the process to use the 1095 day cycle between requalification on Controller PCs. Subsequent audits have demonstrated that all required OCC Controller qualification dates are current and in alignment with eLITE database records.

With regard to Finding 15, Alyeska respectfully requests that this finding be withdrawn, as Alyeska's Operator Qualification database is accurate and working as designed.

#### **SUPPORTING DOCUMENTATION**

Exhibit 39 – JR-3119, OCC DOT Requalification – OQ

Exhibit 40 – JR-3118, OCC Controller Requalification – OQ

# Curriculum Content

## Curriculum

**Curriculum:** JR-3119 (OCC DOT Requalification - OQ)  
**Domain:** PUBLIC (Default Public Access Domain)  
**Active:** Yes  
**Date Created:** 2/26/2002 12:00 AM America/Anchorage  
**Description:** Owner: Mike Joynor and his designees: OCC Supervisors  
 OCC DOT Covered Performance Checklists  
 Requalification: Every 3 years  
 This qualification should be assigned to an OCC Controller on the 3rd year after completion of QDPOCC/101 - OCC Controller Certification  
**Force Incomplete:** No

## Items

| Item  | Title   | Requirement Type | Initial Period | Initial Number | Initial Basis | Retraining Period | Retraining Number | Retraining Basis | Effective Date |
|---|---|------------------|----------------|----------------|---------------|-------------------|-------------------|------------------|----------------|
| PC PC-OCC/012 (Rev 8/5/2001 12:00 AM America/Anchorage)   | PC-OCC/012 - React to crude tank high-/low-pressure alarms                                    | PC - DOT         | Days           |                | Even          | Days              | 1095              | Even             | 8/20/2002      |
| PC PC-OCC/017 (Rev 8/5/2001 12:00 AM America/Anchorage)   | PC-OCC/017 - Respond to fire alarm in East or West Tank Farms                                 | PC - DOT         | Days           |                | Even          | Days              | 1095              | Even             | 8/20/2002      |
| PC PC-OCC/022 (Rev 8/5/2001 12:00 AM America/Anchorage)   | PC-OCC/022 - Isolate Petro Star/North Pole metering   | PC - DOT         | Days           |                | Even          | Days              | 1095              | Even             | 8/20/2002      |
| PC PC-OCC/023 (Rev 8/5/2001 12:00 AM America/Anchorage)   | PC-OCC/023 - Determine need to run pump station in internal auto                              | PC - DOT         | Days           |                | Even          | Days              | 1095              | Even             | 8/20/2002      |
| PC PC-OCC/024 (Rev 10/31/2006 12:00 AM America/Anchorage) | PC-OCC/024 - Participate in a programmable logic controller (PLC) preventive maintenance (PM) | PC - DOT         | Days           |                | Even          | Days              | 1095              | Even             | 10/31/2006     |
| PC PC-OCC/025 (Rev 10/31/2006 12:00 AM America/Anchorage) | PC-OCC/025 - Participate In Remote Gate Valve (RGV) Preventive Maintenance (PM)               | PC - DOT         | Days           |                | Even          | Days              | 1095              | Even             | 10/31/2006     |
| PC PC-OCC/027 (Rev 10/31/2006 12:00 AM America/Anchorage) | PC-OCC/027 - Respond to pump station alarms   | PC - DOT         | Days           |                | Even          | Days              | 1095              | Even             | 10/31/2006     |
| PC PC-OCC/028 (Rev 10/21/2006 12:00 AM America/Anchorage) | PC-OCC/028 - Respond to loss of communications with pump station                              | PC - DOT         | Days           |                | Even          | Days              | 1095              | Even             | 10/21/2006     |
| PC PC-OCC/029 (Rev 8/5/2001 12:00 AM America/Anchorage)   | PC-OCC/029 - Monitor operation of the pipeline (normal operation)                             | PC - DOT         | Days           |                | Even          | Days              | 1095              | Even             | 8/20/2002      |

Items

| Item  | Title  | Requirement Type | Initial Period | Initial Number | Initial Basis | Retraining Period | Retraining Number | Retraining Basis | Effective Date |
|---|--|------------------|----------------|----------------|---------------|-------------------|-------------------|------------------|----------------|
| PC PC-OCC/030 (Rev 8/5/2001 12:00 AM America/Anchorage)   | PC-OCC/030 - Monitor the Operation of Pipeline Using the RTM (Real Time Model)                                 | PC - DOT         | Days           |                | Even          | Days              | 1095              | Even             | 8/20/2002      |
| PC PC-OCC/031 (Rev 8/5/2001 12:00 AM America/Anchorage)   | PC-OCC/031 - Determine the validity of a Crude Oil or Fuel Gas leak alarm                                      | PC - DOT         | Days           |                | Even          | Days              | 1095              | Even             | 8/20/2002      |
| PC PC-OCC/032 (Rev 8/5/2001 12:00 AM America/Anchorage)   | PC-OCC/032 - Monitor the Operation of Pipeline Valves during Pigging.  | PC - DOT         | Days           |                | Even          | Days              | 1095              | Even             | 8/20/2002      |
| PC PC-OCC/034 (Rev 10/31/2006 12:00 AM America/Anchorage) | PC-OCC/034 - Respond to Computer Actuated Auto Controls  | PC - DOT         | Days           |                | Even          | Days              | 1095              | Even             | 10/31/2006     |
| PC PC-OCC/037 (Rev 8/5/2001 12:00 AM America/Anchorage)   | PC-OCC/037 - Respond to an abnormal loss of pump stations  | PC - DOT         | Days           |                | Even          | Days              | 1095              | Even             | 8/20/2002      |
| PC PC-OCC/038 (Rev 10/31/2006 12:00 AM America/Anchorage) | PC-OCC/038 - Perform Emergency Operation Related to Valve 972 Intransit & Automatic RGV Logic is Not Inhibited | PC - DOT         | Days           |                | Even          | Days              | 1095              | Even             | 10/31/2006     |
| PC PC-OCC/054 (Rev 8/5/2001 12:00 AM America/Anchorage)   | PC-OCC/054 - Perform emergency operation related to no flow path into Terminal tankage                         | PC - DOT         | Days           |                | Even          | Days              | 1095              | Even             | 8/20/2002      |
| PC PC-OCC/055 (Rev 10/31/2006 12:00 AM America/Anchorage) | PC-OCC/055 - Perform standard PM/DOT procedure related to 972  | PC - DOT         | Days           |                | Even          | Days              | 1095              | Even             | 10/31/2006     |
| PC PC-OCC/056 (Rev 8/5/2001 12:00 AM America/Anchorage)   | PC-OCC/056 - Perform emergency operation related to unexpected total loss of power                             | PC - DOT         | Days           |                | Even          | Days              | 1095              | Even             | 8/20/2002      |
| PC PC-OCC/063 (Rev 10/31/2006 12:00 AM America/Anchorage) | PC-OCC/063 - Analyze Communications Display  | PC - DOT         | Days           |                | Even          | Days              | 1095              | Even             | 10/31/2006     |
| PC PC-OCC/064 (Rev 10/31/2006 12:00 AM America/Anchorage) | PC-OCC/064 - Exchange mainline units remotely  | PC - DOT         | Days           |                | Even          | Days              | 1095              | Even             | 10/31/2006     |
| PC PC-OCC/065 (Rev 10/31/2006 12:00 AM America/Anchorage) | PC-OCC/065 - Inject from relief tank at PS 05  | PC - DOT         | Days           |                | Even          | Days              | 1095              | Even             | 10/31/2006     |
| PC PC-OCC/066 (Rev 10/31/2006 12:00 AM America/Anchorage) | PC-OCC/066 - Inject from a relief tank other than PS 05  | PC - DOT         | Days           |                | Even          | Days              | 1095              | Even             | 10/31/2006     |

Items

| Item   | Title   | Requirement Type | Initial Period | Initial Number | Initial Basis | Retrain Period | Retrain Number | Retrain Basis | Effective Date |
|--|---|------------------|----------------|----------------|---------------|----------------|----------------|---------------|----------------|
| PC PC-OCC/067 (Rev 8/5/2001<br>12:00 AM America/Anchorage)   | PC-OCC/067 -<br>Respond to meter<br>station alarms                            | PC - DOT         | Days           |                | Event         | Days           | 109<br>5       | Event         | 2/26/2002      |
| PC PC-OCC/068 (Rev 8/5/2001<br>12:00 AM America/Anchorage)   | PC-OCC/068 -<br>Respond to<br>operational requests<br>from refineries         | PC - DOT         | Days           |                | Event         | Days           | 109<br>5       | Event         | 8/20/2002      |
| PC PC-OCC/069 (Rev 8/5/2001<br>12:00 AM America/Anchorage)   | PC-OCC/069 -<br>Perform controlled<br>relief at a pump<br>station             | PC - DOT         | Days           |                | Event         | Days           | 109<br>5       | Event         | 8/20/2002      |
| PC PC-OCC/070 (Rev 8/5/2001<br>12:00 AM America/Anchorage)   | PC-OCC/070 -<br>Respond to gas line<br>problems                               | PC - DOT         | Days           |                | Event         | Days           | 109<br>5       | Event         | 8/20/2002      |
| PC PC-OCC/074 (Rev 10/31/2006<br>12:00 AM America/Anchorage) | PC-OCC/074 -<br>Conduct a normal<br>pipeline shutdown                         | PC - DOT         | Days           |                | Event         | Days           | 109<br>5       | Event         | 10/31/2006     |
| PC PC-OCC/075 (Rev 10/31/2006<br>12:00 AM America/Anchorage) | PC-OCC/075 -<br>Conduct an<br>emergency pipeline<br>shutdown                  | PC - DOT         | Days           |                | Event         | Days           | 109<br>5       | Event         | 10/31/2006     |
| PC PC-OCC/076 (Rev 10/31/2006<br>12:00 AM America/Anchorage) | PC-OCC/076 -<br>Conduct a normal<br>pipeline start-up                         | PC - DOT         | Days           |                | Event         | Days           | 109<br>5       | Event         | 10/31/2006     |
| PC PC-OCC/077 (Rev 10/31/2006<br>12:00 AM America/Anchorage) | PC-OCC/077 -<br>Conduct a pipeline<br>start-up after an<br>emergency shutdown | PC - DOT         | Days           |                | Event         | Days           | 109<br>5       | Event         | 10/31/2006     |
| PC PC-OCC/080 (Rev 11/1/2006<br>12:00 AM America/Anchorage)  | PC-OCC/080 - DOT<br>Testing for Valves<br>without Auto Controls<br>Logic (SR) | PC - DOT         | Days           |                | Event         | Days           | 109<br>5       | Event         | 11/3/2006      |

# Curriculum Content

## Curriculum

**Curriculum:** JR-3118 (OCC Controller Requalification - OQ)  
**Domain:** PUBLIC (Default Public Access Domain)  
**Active:** Yes  
**Date Created:** 2/26/2002 12:00 AM America/Anchorage  
**Description:** Owner: Mike Joynor and his designees: OCC Supervisors

OCC Core and Non-Core Performance Checklists

Re-qualification: Every 5 years

This qualification should be assigned to an OCC Controller on the 3rd year after completion of QDPOCC/101 - OCC Controller Certification.

OCC Controllers initially qualify on all Core and DOT tasks. Re-qualification will be on all Core/Non-core PCs no later than 1825 days from date when each PC was last completed and signed.

The re-qualification of these PCs will be completed by the individuals in conjunction with the re-qualification of the OCC DOT Covered PCs.

Amended 8/28/06 to include all OCC Core & Non Core PC's per Dean Bearden.

**Force Incomplete:** No

## Items

| Item  | Title   | Requirement Type | Initial Period | Initial Number | Initial Basis | Retrain Period | Retrain Number | Retrain Basis | Effective Date |
|---|---|------------------|----------------|----------------|---------------|----------------|----------------|---------------|----------------|
| PC PC-OCC/001 (Rev 10/31/2006 12:00 AM America/Anchorage) | PC-OCC/001 - Calculate tank switch times                                  | PC - CORE        | Days           |                | Evening       | Days           | 1825           | Evening       | 12/13/2006     |
| PC PC-OCC/002 (Rev 10/31/2006 12:00 AM America/Anchorage) | PC-OCC/002 - Perform Crude Tank Bottom Drop                               | PC - CORE        | Days           |                | Evening       | Days           | 1825           | Evening       | 12/13/2006     |
| PC PC-OCC/003 (Rev 10/31/2006 12:00 AM America/Anchorage) | PC-OCC/003 - Prove meters during loading                                  | PC - CORE        | Days           |                | Evening       | Days           | 1825           | Evening       | 12/13/2006     |
| PC PC-OCC/004 (Rev 10/31/2006 12:00 AM America/Anchorage) | PC-OCC/004 - Determine the reason(s) for and when to batch and load       | PC - CORE        | Days           |                | Evening       | Days           | 1825           | Evening       | 12/13/2006     |
| PC PC-OCC/005 (Rev 10/31/2006 12:00 AM America/Anchorage) | PC-OCC/005 - Perform custody transfer without meters                      | PC - CORE        | Days           |                | Evening       | Days           | 1825           | Evening       | 11/6/2006      |
| PC PC-OCC/006 (Rev 10/31/2006 12:00 AM America/Anchorage) | PC-OCC/006 - Increase/Decrease Meter Runs as Directed by Flow (Automatic) | PC - CORE        | Days           |                | Evening       | Days           | 1825           | Evening       | 11/7/2006      |
| PC PC-OCC/007 (Rev 10/31/2006 12:00 AM America/Anchorage) | PC-OCC/007 - Increase/Decrease Meter Runs as Directed by Flow (Manually)  | PC - CORE        | Days           |                | Evening       | Days           | 1825           | Evening       | 11/7/2006      |
| PC PC-OCC/010 (Rev 10/31/2006 12:00 AM America/Anchorage) | PC-OCC/010 - Perform local water draw & complete paperwork                | PC - CORE        | Days           |                | Evening       | Days           | 1825           | Evening       | 11/7/2006      |

Items

| Item   | Title  | Requirement Type   | Initial Period | Initial Number | Initial Basis | Retrain Period | Retrain Number | Retrain Basis | Effective Date |
|--|--|--------------------|----------------|----------------|---------------|----------------|----------------|---------------|----------------|
| PC PC-OCC/011 (Rev 10/31/2006<br>12:00 AM America/Anchorage) | PC-OCC/011 -<br>Recognize power<br>distribution alarms and<br>communications                     | PC -<br>CORE       | Days           |                | Even          | Days           | 182<br>5       | Even          | 11/7/2006      |
| PC PC-OCC/014 (Rev 10/31/2006<br>12:00 AM America/Anchorage) | PC-OCC/014 -<br>Respond to Marine<br>Department alarms   | PC -<br>CORE       | Days           |                | Even          | Days           | 182<br>5       | Even          | 11/7/2006      |
| PC PC-OCC/015 (Rev 10/31/2006<br>12:00 AM America/Anchorage) | PC-OCC/015 -<br>Perform normal berth<br>operations and normal<br>shutdown                        | PC -<br>CORE       | Days           |                | Even          | Days           | 182<br>5       | Even          | 11/7/2006      |
| PC PC-OCC/016 (Rev 10/31/2006<br>12:00 AM America/Anchorage) | PC-OCC/016 -<br>Troubleshoot berth<br>operations   | PC -<br>CORE       | Days           |                | Even          | Days           | 182<br>5       | Even          | 11/7/2006      |
| PC PC-OCC/018 (Rev 10/31/2006<br>12:00 AM America/Anchorage) | PC-OCC/018 -<br>Respond to berth fire<br>alarm   | PC -<br>CORE       | Days           |                | Even          | Days           | 182<br>5       | Even          | 11/7/2006      |
| PC PC-OCC/019 (Rev 10/31/2006<br>12:00 AM America/Anchorage) | PC-OCC/019 -<br>Respond to Fire Alarm<br>in the Terminal<br>Administration<br>Building           | PC -<br>CORE       | Days           |                | Even          | Days           | 182<br>5       | Even          | 11/7/2006      |
| PC PC-OCC/021 (Rev 10/31/2006<br>12:00 AM America/Anchorage) | PC-OCC/021 -<br>Perform High S&W<br>and NGL Slug<br>Tracking                                     | PC -<br>CORE       | Days           |                | Even          | Days           | 182<br>5       | Even          | 11/7/2006      |
| PC PC-OCC/026 (Rev 10/31/2006<br>12:00 AM America/Anchorage) | PC-OCC/026 -<br>Respond to Digital<br>Strong Motion<br>Accelerometer<br>(DSMA) alarm             | PC -<br>CORE       | Days           |                | Even          | Days           | 182<br>5       | Even          | 11/7/2006      |
| PC PC-OCC/033 (Rev 10/31/2006<br>12:00 AM America/Anchorage) | PC-OCC/033 -<br>Respond to data<br>requests  | PC -<br>CORE       | Days           |                | Even          | Days           | 182<br>5       | Even          | 11/7/2006      |
| PC PC-OCC/035 (Rev 10/31/2006<br>12:00 AM America/Anchorage) | PC-OCC/035 -<br>Manually calculate a<br>hydraulic gradient                                       | PC -<br>CORE       | Days           |                | Even          | Days           | 182<br>5       | Even          | 11/7/2006      |
| PC PC-OCC/036 (Rev 10/31/2006<br>12:00 AM America/Anchorage) | PC-OCC/036 -<br>Provide Input on the<br>Decision to Perform<br>Maintenance on a<br>Mainline Unit | PC -<br>Noncovered |                |                |               |                |                |               | 12/18/2006     |
| PC PC-OCC/039 (Rev 10/31/2006<br>12:00 AM America/Anchorage) | PC-OCC/039 -<br>Analyze crude<br>temperatures  | PC -<br>CORE       | Days           |                | Even          | Days           | 182<br>5       | Even          | 11/7/2006      |
| PC PC-OCC/040 (Rev 8/6/2001<br>12:00 AM America/Anchorage)   | PC-OCC/040 - Set up<br>metering system for<br>berth loading                                      | PC -<br>CORE       | Days           |                | Even          | Days           | 182<br>5       | Even          | 1/15/2007      |
| PC PC-OCC/041 (Rev 8/5/2001<br>12:00 AM America/Anchorage)   | PC-OCC/041 - Prove<br>meters during normal<br>throughput   | PC -<br>CORE       | Days           |                | Even          | Days           | 182<br>5       | Even          | 1/10/2007      |
| PC PC-OCC/042 (Rev 8/5/2001<br>12:00 AM America/Anchorage)   | PC-OCC/042 -<br>Troubleshoot metering<br>valve movements   | PC -<br>CORE       | Days           |                | Even          | Days           | 182<br>5       | Even          | 1/10/2007      |

Items

| Item   | Title   | Requirement Type | Initial Period | Initial Number | Initial Basis | Retrainin g Period | Retrainin g Number | Retrainin g Basis | Effective Date |
|--|---|------------------|----------------|----------------|---------------|--------------------|--------------------|-------------------|----------------|
| PC PC-OCC/043 (Rev 8/5/2001 12:00 AM America/Anchorage)  | PC-OCC/043 - Perform over-/short-metering analyses  | PC - CORE        | Days           |                | Eve nt        | Days               | 182 5              | Eve nt            | 1/10/2007      |
| PC PC-OCC/044 (Rev 8/6/2001 12:00 AM America/Anchorage)  | PC-OCC/044 - Evaluate proof reports   | PC - CORE        | Days           |                | Eve nt        | Days               | 182 5              | Eve nt            | 1/10/2007      |
| PC PC-OCC/045 (Rev 8/6/2001 12:00 AM America/Anchorage)  | PC-OCC/045 - Respond to Fire Alarm on the OCC Fire Alarm Control Panel                                    | PC - CORE        | Days           |                | Eve nt        | Days               | 182 5              | Eve nt            | 1/10/2007      |
| PC PC-OCC/046 (Rev 8/6/2001 12:00 AM America/Anchorage)  | PC-OCC/046 - Troubleshoot meter performance   | PC - CORE        | Days           |                | Eve nt        | Days               | 182 5              | Eve nt            | 1/10/2007      |
| PC PC-OCC/047 (Rev 8/6/2001 12:00 AM America/Anchorage)  | PC-OCC/047 - Complete a vessel schedule   | PC - CORE        | Days           |                | Eve nt        | Days               | 182 5              | Eve nt            | 1/10/2007      |
| PC PC-OCC/048 (Rev 8/6/2001 12:00 AM America/Anchorage)  | PC-OCC/048 - Align BWT manifold valves to accomplish routing  | PC - CORE        | Days           |                | Eve nt        | Days               | 182 5              | Eve nt            | 1/10/2007      |
| PC PC-OCC/049 (Rev 8/6/2001 12:00 AM America/Anchorage)  | PC-OCC/049 - Calculate Available Capacity in BWT Tanks and Allocate the Available Capacity to the Vessels | PC - CORE        | Days           |                | Eve nt        | Days               | 182 5              | Eve nt            | 1/10/2007      |
| PC PC-OCC/050 (Rev 8/6/2001 12:00 AM America/Anchorage)  | PC-OCC/050 - Perform a ballast water tank switch  | PC - CORE        | Days           |                | Eve nt        | Days               | 182 5              | Eve nt            | 1/10/2007      |
| PC PC-OCC/051 (Rev 8/6/2001 12:00 AM America/Anchorage)  | PC-OCC/051 - Align recovered crude to vessel/tankage  | PC - CORE        | Days           |                | Eve nt        | Days               | 182 5              | Eve nt            | 1/10/2007      |
| PC PC-OCC/052 (Rev 8/6/2001 12:00 AM America/Anchorage)  | PC-OCC/052 - Establish Crude Flow Paths with Elevation Dependent Variables                                | PC - CORE        | Days           |                | Eve nt        | Days               | 182 5              | Eve nt            | 1/10/2007      |
| PC PC-OCC/053 (Rev 8/6/2001 12:00 AM America/Anchorage)  | PC-OCC/053 - Analyze crude level variances  | PC - CORE        | Days           |                | Eve nt        | Days               | 182 5              | Eve nt            | 1/10/2007      |
| PC PC-OCC/057 (Rev 8/6/2001 12:00 AM America/Anchorage)  | PC-OCC/057 - Receive a scraper  | PC - CORE        | Days           |                | Eve nt        | Days               | 182 5              | Eve nt            | 1/10/2007      |
| PC PC-OCC/058 (Rev 8/6/2001 12:00 AM America/Anchorage)  | PC-OCC/058 - Demonstrate use of the Comm. Panel   | PC - CORE        | Days           |                | Eve nt        | Days               | 182 5              | Eve nt            | 1/10/2007      |
| PC PC-OCC/061 (Rev 8/6/2001 12:00 AM America/Anchorage)  | PC-OCC/061 - Respond to a bomb threat   | PC - CORE        | Days           |                | Eve nt        | Days               | 182 5              | Eve nt            | 1/10/2007      |
| PC PC-OCC/062 (Rev 8/6/2001 12:00 AM America/Anchorage)  | PC-OCC/062 - Edit custody transfer tickets  | PC - CORE        | Days           |                | Eve nt        | Days               | 182 5              | Eve nt            | 1/10/2007      |
| PC PC-OCC/071 (Rev 8/5/2001 12:00 AM America/Anchorage)  | PC-OCC/071 - Respond to high TVP  | PC - CORE        | Days           |                | Eve nt        | Days               | 182 5              | Eve nt            | 1/10/2007      |
| PC PC-OCC/072 (Rev 3/17/2001 12:00 AM America/Anchorage) | PC-OCC/072 - Prepare for and track instrument pig   | PC - CORE        | Days           |                | Eve nt        | Days               | 182 5              | Eve nt            | 1/10/2007      |

Items

| Item   | Title  | Requirement Type | Initial Period | Initial Number | Initial Basis | Retraining Period | Retraining Number | Retraining Basis | Effective Date |
|--|--|------------------|----------------|----------------|---------------|-------------------|-------------------|------------------|----------------|
| PC PC-OCC/073 (Rev 8/6/2001<br>12:00 AM America/Anchorage)   | PC-OCC/073 -<br>Respond to opacity                         | PC -<br>CORE     | Days           |                | Evening       | Days              | 182<br>5          | Evening          | 1/10/2007      |
| PC PC-OCC/078 (Rev 8/6/2001<br>12:00 AM America/Anchorage)   | PC-OCC/078 -<br>Loading Berth 4 & 5<br>with Vapor Recovery | PC -<br>CORE     | Days           |                | Evening       | Days              | 182<br>5          | Evening          | 1/10/2007      |
| PC PC-OCC/081 (Rev 11/12/2007<br>12:00 AM America/Anchorage) | PC-OCC/081 - Pump<br>Station 9 Power<br>Management         | PC -<br>CORE     |                |                |               | Days              | 182<br>5          | Evening          | 1/15/2008      |

**PROBABLE VIOLATION 16a:  
External Corrosion Control**

**PHMSA POSITION**

**Pertinent Regulations:**

49 CFR §195.402 Procedural manual for operations, maintenance, and emergencies

- (a) General. Each operator shall prepare and follow for each pipeline system a manual of written procedures for conducting normal operations and maintenance activities and handling abnormal operations and emergencies. This manual shall be reviewed at intervals not exceeding 15 months, but at least once each calendar year, and appropriate changes made as necessary to insure that the manual is effective. This manual shall be prepared before initial operations of a pipeline system commence, and appropriate parts shall be kept at locations where operations and maintenance activities are conducted.
- (c) Maintenance and normal operations. The manual required by paragraph (a) of this section must include procedures for the following to provide safety during maintenance and normal operations:
  - (3) Operating, maintaining, and repairing the pipeline system in accordance with each of the requirements of this subpart and subpart H of this part.

*Background Regulations*

49 CFR §195.573 What must I do to monitor external corrosion control?

- (e) Corrective action. You must correct any identified deficiency in corrosion control as required by §195.401(b). However, if the deficiency involves a pipeline in an integrity management program under §195.452, you must correct the deficiency as required by §195.452(h).

49 CFR §195.571 What criteria must I use to determine the adequacy of cathodic protection?

Cathodic protection required by this subpart must comply with one or more of the applicable criteria and other considerations for cathodic protection contained in paragraphs 6.2 and 6.3 of NACE Standard RP 0169.

**Findings:**

Alyeska's Integrity Management Engineering Monitoring Program Procedures MP-166-3.19 are grossly deficient because they are written to allow for up to three years before some areas of low cathodic protection must be remediated. It is inappropriate for more

than one (1) year to pass before areas of low protection are remediated. However, in some instances remediation must occur in less than one (1) year.

Specifically, Section 5.1.3 of the Alyeska MP-166-3.19 allows for continued inadequate cathodic protection levels in areas of TAPS that Alyeska has determined have corrosion growth that Alyeska describes as occurring at a low rate. Alyeska uses ILI data and a process that includes the development of "statistically active corrosion" as part of the basis for making decisions about mitigation of cathodic protection deficiencies. Section 195.571 does not permit Alyeska to use corrosion growth rates to determine the adequacy of cathodic protection.

As indicated in previous PHMSA Final Orders issued to Alyeska<sup>1</sup>, ILI results cannot substitute for an adequate cathodic protection (CP) system. Adequate CP provides continuous protection against corrosion, whereas ILI only provides a snapshot of some types of existing corrosion. In order for CP to be considered adequate, it must comply with §195.571, and the NACE RP0169-96 standards incorporated by reference.

**Proposed Civil Penalty:**

Regarding Item 16a, the Compliance Officer has reviewed the circumstances and supporting documentation involved in the probable violation(s) and has recommended that Alyeska be preliminarily assessed a civil penalty in the amount of \$74,000.00.

**Proposed Compliance Order:**

In regard to Item Number 16a of the Notice pertaining to Alyeska's deficient procedures for the mitigation of inadequate cathodic protection when levels are found by monitoring activities to be low, Alyeska must revise its procedures to require remediation of areas of inadequate cathodic protection within one (1) year of detection of cathodic protection that does not comply with one or more of the applicable criteria and other considerations for cathodic protection contained in paragraphs 6.2 and 6.3 of the NACE Standard RP0169 (incorporated by reference, see §195.3). Within sixty (60) days of receipt of the Final Order, Alyeska shall submit the revised procedures to the Director, for approval or modification. Within sixty (60) days of the Director's approval or modification Alyeska shall implement the revised procedures.

**ALYESKA PIPELINE SERVICE COMPANY'S RESPONSE**

**Summary:**

While Alyeska Pipeline Service Company (Alyeska) respectfully disagrees with PHMSA's finding that MP-166-3.19 is grossly deficient, by allowing more than one (1) year to remediate a low cathodic protection (CP) condition when supported by ILI data showing little or no corrosion or an assessment showing a low corrosion rate, Alyeska

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<sup>1</sup> See in the Matter of Alyeska Pipeline Service Company, Final Order, CPF No. 5-2003-5002; and In the Matter of Alyeska Pipeline Service Company Final Order, CPF No. 5-2004-5015.

agrees to modify its procedures to address PHMSA's concerns. However, Alyeska requests that PHMSA reconsider the proposed civil penalty.

**Discussion:**

Alyeska agrees to rewrite its Integrity Management Engineering Monitoring Program Procedures related to:

1. Criteria used for the determination of CP adequacy – 49 CFR §195.571
2. The time-frame for correction of inadequate CP – 49 CFR §195.401(b).

In so doing, Alyeska will address perceived criteria deficiencies with the following significant changes to MP-166-3.19, *Integrated Monitoring*:

1. Remove reference to ILI data and corrosion rate assessment as a basis to determine the adequacy of CP or urgency of corrective action.
2. Determine the adequacy of CP using criteria defined by NACE, SP-0169-2007 (formally RP-0169-2002) section 6.2.2.1.2 (negative polarized potential of at least 850 mV CSE) or section 6.2.2.1.3 (minimum of 100 mV of cathodic polarization CSE). (See Exhibit 41). These criteria are consistent with sections 6.2 and 6.3 of NACE RP-0169-96, (see Exhibit 42) and RP-0169-96-2002 incorporated by reference within 49 CFR Part 195.
3. Use CP monitoring coupons and telluric nulled close interval survey (CIS) data in combination to determine the adequacy of CP.
4. Where CP is determined inadequate, corrective action will be taken as described in response to Finding 16b.

Alyeska will also modify procedures MP-166-3.22 *Pipeline Cathodic Protection*, consistent with revisions of procedure MP-166-3.19.

Alyeska contends that the proposed civil penalty is unsupported by the Finding and inapplicable to the proposed compliance order to amend procedures. There does not appear to be any rationale for calculating the proposed civil penalty. 49 U.S.C. § 60122(b) provides the Secretary of Transportation guidance for determining the severity of the proposed penalty. The Secretary must consider the nature, circumstances, and gravity of the violation, including adverse impact on the environment. 49 U.S.C. §60122(b)(1)(A). The failure to have adequate corrosion control procedures, while significant, does not rise to the level of almost the maximum penalty per violation per day. 49 U. S.C. §60122(a). There was no adverse impact on the environment, nor was there damage to the facility.

PHMSA has been aware of Alyeska's CP criteria and procedures since early 2000 with the formulation of the Corrosion Control Management Plan (CCMP) (see Exhibit 43). While PHMSA has previously expressed opinions regarding its approval of the CCMP, the use of CP coupons, CIS, and ILI data in making CP corrective action decisions in southern sections of TAPS, it did not previously direct Alyeska to change its procedures.

The current finding is the first time Alyeska has been directed by PHMSA to modify its procedures. Even though the Final Order in CPF 5-2004-5015 states that the finding of violation will be considered a prior offense in subsequent enforcement actions, this Finding is not the same nor substantially similar enough to be considered a subsequent offense. (See Exhibit 44). First, the order in CPF 5-2004-5015 was to remediate a specific location for low CP readings. This Finding references the CP monitoring program procedures. Second, the Final Order in CPF 5-2004-5015 was issued on September 24, 2007. The inspections conducted which resulted in this Finding were held in August, September and October of 2007. As the Finding is not specific enough to identify the timeframe of inspection, to link the amount of the proposed civil penalty, Alyeska believes there is not enough information to confirm that PHMSA had issued the Final Order prior to the inspection. Therefore, the proposed civil penalty is excessive under the circumstances.

With regard to Finding 16a, Alyeska will modify its procedures. With regard to the proposed civil penalty, Alyeska requests that PHMSA reconsider the proposed civil penalty.

#### **SUPPORTING DOCUMENTATION**

Exhibit 41 – NACE Standard Practice – Control of External Corrosion on Underground or Submerged Metallic Piping Systems – SP 0169-2007, Sections 6.2.2.1.2 and 6.2.2.1.3.

Exhibit 42 – NACE Standard Practice – Control of External Corrosion on Underground or Submerged Metallic Piping Systems – RP-0169-96, Sections 6.2 and 6.3.

Exhibit 43 – Government Letter 3677, Letter from JPO to Alyeska re: Corrosion Control Management Plan Procedures, dated February 23, 2000.

Exhibit 44 – CPF No. 5-2004-5015, Final Order, dated Sept 24, 2007.

drops other than those across the structure-to-electrolyte boundary must be considered for valid interpretation of this voltage measurement.

NOTE: Consideration is understood to mean the application of sound engineering practice in determining the significance of voltage drops by methods such as:

6.2.2.1.1.1 Measuring or calculating the voltage drop(s);

6.2.2.1.1.2 Reviewing the historical performance of the CP system;

6.2.2.1.1.3 Evaluating the physical and electrical characteristics of the pipe and its environment; and

6.2.2.1.1.4 Determining whether or not there is physical evidence of corrosion.

6.2.2.1.2 A negative polarized potential (see definition in Section 2) of at least 850 mV relative to a saturated copper/copper sulfate reference electrode.

6.2.2.1.3 A minimum of 100 mV of cathodic polarization between the structure surface and a stable reference electrode contacting the electrolyte. The formation or decay of polarization can be measured to satisfy this criterion.

#### 6.2.2.2 Special Conditions

6.2.2.2.1 On bare or ineffectively coated pipelines when long-line corrosion activity is of primary concern, the measurement of a net protective current at predetermined current discharge points from the electrolyte to the pipe surface, as measured by an earth current technique, may be sufficient.

6.2.2.2.2 In some situations, such as the presence of sulfides, bacteria, elevated temperatures, acid environments, and dissimilar metals, the criteria in Paragraph 6.2.2.1 may not be sufficient.

6.2.2.2.3 When a pipeline is encased in concrete or buried in dry or aerated high-resistivity soil, values less negative than the criteria listed in Paragraph 6.2.2.1 may be sufficient.

#### 6.2.2.3 PRECAUTIONARY NOTES

6.2.2.3.1 The earth current technique is often meaningless in multiple pipe rights-of-way, in high-resistivity surface soil, for deeply buried

pipe, in stray-current areas, or where local corrosion cell action predominates.

6.2.2.3.2 Caution is advised against using polarized potentials less negative than -850 mV for CP of pipelines when operating pressures and conditions are conducive to stress corrosion cracking (see references on stress corrosion cracking at the end of this section).

6.2.2.3.3 The use of excessive polarized potentials on externally coated pipelines should be avoided to minimize cathodic disbondment of the coating.

6.2.2.3.4 Polarized potentials that result in excessive generation of hydrogen should be avoided on all metals, particularly higher-strength steel, certain grades of stainless steel, titanium, aluminum alloys, and prestressed concrete pipe.

#### 6.2.3 Aluminum Piping

6.2.3.1 The following criterion shall apply: a minimum of 100 mV of cathodic polarization between the structure surface and a stable reference electrode contacting the electrolyte. The formation or decay of this polarization can be used in this criterion.

#### 6.2.3.2 PRECAUTIONARY NOTES

6.2.3.2.1 Excessive Voltages: Notwithstanding the minimum criterion in Paragraph 6.2.3.1, if aluminum is cathodically protected at voltages more negative than -1,200 mV measured between the pipe surface and a saturated copper/copper sulfate reference electrode contacting the electrolyte and compensation is made for the voltage drops other than those across the pipe-electrolyte boundary, it may suffer corrosion as the result of the buildup of alkali on the metal surface. A polarized potential more negative than -1,200 mV should not be used unless previous test results indicate that no appreciable corrosion will occur in the particular environment.

6.2.3.2.2 Alkaline Conditions: Aluminum may suffer from corrosion under high-pH conditions, and application of CP tends to increase the pH at the metal surface. Therefore, careful investigation or testing should be done before applying CP to stop pitting attack on aluminum in environments with a natural pH in excess of 8.0.

#### 6.2.4 Copper Piping

5.3.3 New External Coating System Qualification

5.3.3.1 The purpose of this method is to qualify a new external coating material by subjecting it to laboratory tests appropriate for the intended service. After laboratory tests have been conducted and indicate that the external coating system appears to be suitable, application and installation are conducted in accordance with recommended practices. In-service field performance tests are made to confirm the success of the previous steps. The steps of the method are (1) laboratory tests, (2) application under recommended practices, (3) installation under recommended practices, and (4) in-service field performance tests. If good results are obtained after five years, only Steps 2 and 3 are required thereafter.

5.3.3.1.1 Applicable sections of Tables 3 and 4 are recommended for the initial laboratory test methods.

5.3.3.1.2 Applicable sections of Tables 1 and 2 are recommended for conditional use during Steps 2 and 3.

5.3.3.1.3 During a period of five years or more, the use of the evaluation methods given in Table 5, Item 1 or 2 are recommended. The test method in Item 3 may be used as a supplementary means for obtaining data for correlation with laboratory tests.

5.3.4 Method for Evaluating an External Coating System by In-Service Field Performance Only

5.3.4.1 The purpose of this method is to qualify an external coating system when none of the first three methods given in Paragraph 5.3 has been or will be used. It is intended that this method should be limited to minor pilot installations.

5.3.4.1.1 The use of at least one of the first two methods given in Table 5 is recommended on the basis of at least one investigation per year for five consecutive years.

---

**Section 6: Criteria and Other Considerations for CP**

6.1 Introduction

6.1.1 This section lists criteria and other considerations for CP that indicate, when used either separately or in combination, whether adequate CP of a metallic piping system has been achieved (see also Section 1, Paragraphs 1.2 and 1.4).

6.1.2 The effectiveness of CP or other external corrosion control measures can be confirmed by visual observation, by measurements of pipe wall thickness, or by use of internal inspection devices. Because such methods sometimes are not practical, meeting any criterion or combination of criteria in this section is evidence that adequate CP has been achieved. When excavations are made for any purpose, the pipe should be inspected for evidence of corrosion and coating condition.

6.1.3 The criteria in this section have been developed through laboratory experiments or verified by evaluating data obtained from successfully operated CP systems. Situations in which a single criterion for evaluating the effectiveness of CP may not be satisfactory for all conditions may exist. Often a combination of criteria is needed for a single structure.

6.1.4 Sound engineering practices shall be used to determine the methods and frequency of testing required to satisfy these criteria.

6.1.5 Corrosion leak history is valuable in assessing the effectiveness of CP. Corrosion leak history by itself, however, shall not be used to determine whether adequate levels of CP have been achieved unless it is impractical to make electrical surveys.

6.2 Criteria

6.2.1 It is not intended that persons responsible for external corrosion control be limited to the criteria listed below. Criteria that have been successfully applied on existing piping systems can continue to be used on those piping systems. Any other criteria used must achieve corrosion control comparable to that attained with the criteria herein.

6.2.2 Steel and Cast Iron Piping

6.2.2.1 External corrosion control can be achieved at various levels of cathodic polarization depending on the environmental conditions. However, in the absence of specific data that demonstrate that adequate CP has been achieved, one or more of the following shall apply:

6.2.2.1.1 A negative (cathodic) potential of at least 850 mV with the CP applied. This potential is measured with respect to a saturated copper/copper sulfate reference electrode contacting the electrolyte. Voltage

given in Table 6, Item 1 or 2 is recommended. The test method in Item 3 may be used as a supplementary means for obtaining data for correlation with laboratory tests.

5.3.4 Method for Evaluating an External Coating System by In-Service Field Performance Only

5.3.4.1 The purpose of this method is to qualify an external coating system where none of the

first three methods given in Paragraph 5.3 have been or will be used. It is intended that this method should be limited to minor pilot installations.

5.3.4.1.1 The use of at least one of the first two methods given in Table 6 is recommended on the basis of at least one investigation per year for five consecutive years.

**Section 6: Criteria and Other Considerations for Cathodic Protection**

6.1 Introduction

6.1.1 This section lists criteria and other considerations for cathodic protection that will indicate, when used either separately or in combination, whether adequate cathodic protection of a metallic piping system has been achieved (see also Section 1, Paragraphs 1.2 and 1.4).

6.1.2 The effectiveness of cathodic protection or other external corrosion control measures can be confirmed by visual observation, by measurements of pipe wall thickness, or by use of internal inspection devices. Because such methods sometimes are not practical, meeting any criterion or combination of criteria in this section is evidence that adequate cathodic protection has been achieved. When excavations are made for any purpose, the pipe should be inspected for evidence of corrosion and/or coating condition.

6.1.3 The criteria in this section have been developed through laboratory experiments and/or verified by evaluating data obtained from successfully operated cathodic protection systems. Situations may exist where a single criterion for evaluating the effectiveness of cathodic protection may not be satisfactory for all conditions. Often a combination of criteria is needed for a single structure.

6.1.4 Sound engineering practices shall be used to determine the methods and frequency of testing required to satisfy these criteria.

6.1.5 Corrosion leak history is valuable in assessing the effectiveness of cathodic protection. Corrosion leak history by itself, however, shall not be used to determine whether adequate levels of cathodic protection have been achieved unless it is impractical to make electrical surveys.

6.2 Criteria

195 CFR 571 ↓

NACE International

6.2.1 It is not intended that persons responsible for external corrosion control be limited to the criteria listed below. Criteria that have been successfully applied on existing piping systems can continue to be used on those piping systems. Any other criteria used must achieve corrosion control comparable to that attained with the criteria herein.

6.2.2 Steel and Cast Iron Piping

6.2.2.1 External corrosion control can be achieved at various levels of cathodic polarization depending on the environmental conditions. However, in the absence of specific data that demonstrate that adequate cathodic protection has been achieved, one or more of the following shall apply:

6.2.2.1.1 A negative (cathodic) potential of at least 850 mV with the cathodic protection applied. This potential is measured with respect to a saturated copper/copper sulfate reference electrode contacting the electrolyte. Voltage drops other than those across the structure-to-electrolyte boundary must be considered for valid interpretation of this voltage measurement.

NOTE: Consideration is understood to mean the application of sound engineering practice in determining the significance of voltage drops by methods such as:

6.2.2.1.1.1 Measuring or calculating the voltage drop(s);

6.2.2.1.1.2 Reviewing the historical performance of the cathodic protection system;

6.2.2.1.1.3 Evaluating the physical and electrical characteristics of the pipe and its environment; and

6.2.2.1.1.4 Determining whether or not there is physical evidence of corrosion.

6.2.2.1.2 A negative polarized potential (see definition in Section 2) of at least 850 mV relative to a saturated copper/copper sulfate reference electrode.

6.2.2.1.3 A minimum of 100 mV of cathodic polarization between the structure surface and a stable reference electrode contacting the electrolyte. The formation or decay of polarization can be measured to satisfy this criterion.

6.2.2.2 Special Conditions

6.2.2.2.1 On bare or ineffectively coated pipelines where long-line corrosion activity is of primary concern, the measurement of a net protective current at predetermined current discharge points from the electrolyte to the pipe surface, as measured by an earth current technique, may be sufficient.

6.2.2.2.2 In some situations, such as the presence of sulfides, bacteria, elevated temperatures, acid environments, and dissimilar metals, the criteria in Paragraph 6.2.2.1 may not be sufficient.

6.2.2.2.3 When a pipeline is encased in concrete or buried in dry or aerated high-resistivity soil, values less negative than the criteria listed in Paragraph 6.2.2.1 may be sufficient.

6.2.2.3 PRECAUTIONARY NOTES

6.2.2.3.1 The earth current technique is often meaningless in multiple pipe rights-of-way, in high-resistivity surface soil, for deeply buried pipe, in stray-current areas, or where local corrosion cell action predominates.

6.2.2.3.2 Caution is advised against using polarized potentials less negative than -850 mV for cathodic protection of pipelines when operating pressures and conditions are conducive to stress corrosion cracking (see references on stress corrosion cracking at the end of this section).

6.2.2.3.3 The use of excessive polarized potentials on externally coated pipelines

should be avoided to minimize cathodic disbondment of the coating.

6.2.2.3.4 Polarized potentials that result in excessive generation of hydrogen should be avoided on all metals, particularly higher strength steel, certain grades of stainless steel, titanium, aluminum alloys, and prestressed concrete pipe.

6.2.3 Aluminum Piping

6.2.3.1 The following criterion shall apply: a minimum of 100 mV of cathodic polarization between the structure surface and a stable reference electrode contacting the electrolyte. The formation or decay of this polarization can be used in this criterion.

6.2.3.2 PRECAUTIONARY NOTES

6.2.3.2.1 Excessive Voltages: Notwithstanding the minimum criterion in Section 6.2.3.1, if aluminum is cathodically protected at voltages more negative than -1200 mV measured between the pipe surface and a saturated copper/copper sulfate reference electrode contacting the electrolyte and compensation is made for the voltage drops other than those across the pipe-electrolyte boundary, it may suffer corrosion as the result of the buildup of alkali on the metal surface. A polarized potential more negative than -1,200 mV should not be used unless previous test results indicate that no appreciable corrosion will occur in the particular environment.

6.2.3.2.2 Alkaline Conditions: Aluminum may suffer from corrosion under high-pH conditions and application of cathodic protection tends to increase the pH at the metal surface. Therefore, careful investigation or testing should be made before applying cathodic protection to stop pitting attack on aluminum in environments with a natural pH in excess of 8.0.

6.2.4 Copper Piping

6.2.4.1 The following criterion shall apply: a minimum of 100 mV of cathodic polarization between the structure surface and a stable reference electrode contacting the electrolyte. The formation or decay of this polarization can be used in this criterion.

6.2.5 Dissimilar Metal Piping

6.2.5.1 A negative voltage between all pipe surfaces and a stable reference electrode contacting the electrolyte equal to that required for the protection of the most anodic metal should be maintained.

6.2.5.2 PRECAUTIONARY NOTE

6.2.5.2.1 Amphoteric materials that could be damaged by high alkalinity created by cathodic protection should be electrically isolated and separately protected.

6.3 Other Considerations

6.3.1 Methods for determining voltage drop(s) shall be selected and applied using sound engineering practices. Once determined, the voltage drop(s) may be used for correcting future measurements at the same location, providing conditions such as pipe and cathodic protection system operating conditions, soil characteristics, and external coating quality remain similar. (Note: Placing the reference electrode next to the pipe surface may not be at the pipe-electrolyte interface. A reference electrode placed at an externally coated pipe surface may not significantly reduce soil voltage drop in the measurement if the nearest coating holiday is remote from the reference electrode location.)

6.3.2 When it is impractical or considered unnecessary to disconnect all current sources to correct for voltage drop(s) in the structure-to-electrolyte potential measurements, sound engineering practices should be used to ensure that adequate cathodic protection has been achieved.

6.3.3 Where feasible and practicable, in-line inspection of pipelines may be helpful in determining the presence or absence of pitting corrosion damage. Absence of external corrosion damage or the halting

of its growth may indicate adequate external corrosion control. The in-line inspection technique, however, may not be capable of detecting all types of external corrosion damage, has limitations in its accuracy, and may report as anomalies items that are not external corrosion. For example, longitudinal seam corrosion and general corrosion may not be readily detected by in-line inspection. Also, possible thickness variations, dents, gouges, and external ferrous objects may be detected as corrosion. The appropriate use of in-line inspection must be carefully considered.

6.3.4 Situations involving stray currents and stray electrical gradients may exist that require special analysis. For additional information, see Section 9, "Control of Interference Currents."

6.4 Alternative Reference Electrodes

6.4.1 Other standard reference electrodes may be substituted for the saturated copper/copper sulfate reference electrode. Two commonly used reference electrodes are listed below along with their voltage equivalent (at 25°C [77°F]) to -850 mV referred to a saturated copper/copper sulfate reference electrode:

6.4.1.1 Saturated KCl calomel reference electrode: -780 mV; and

6.4.1.2 Saturated silver/silver chloride reference electrode used in 25 ohm-cm seawater: -800 mV.

6.4.2 In addition to these standard reference electrodes, an alternative metallic material or structure may be used in place of the saturated copper/copper sulfate reference electrode if the stability of its electrode potential is ensured and if its voltage equivalent referred to a saturated copper/copper sulfate reference electrode is established.

Bibliography for Section 6

Criteria for Copper

Schwerdtfeger, W.J. "Criteria for Cathodic Protection—Highly Resistant Copper Deteriorates in Severely Corrosive Soil." *Materials Protection* 57, 9 (1968): p. 43.

Criteria for Aluminum

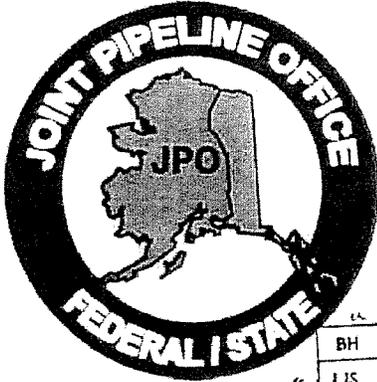
CP1021. "Code of Practice for Cathodic Protection." London, England: British Standards Institution, August, 1973, pp. 13-14.

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NACE Publication 2M363. "Recommended Practice for Cathodic Protection of Aluminum Pipe Buried in Soil or Immersed in Water." *Materials Performance* 2,10 (1963): p. 106.

Schwerdtfeger, W.J. "Effects of Cathodic Current on the Corrosion of An Aluminum Alloy." National Bureau

- AK. Dept. of Environmental Conservation
- U.S. Bureau of Land Management
- AK. Dept. of Fish & Game
- U.S. Environmental Protection Agency
- AK. Dept. of Natural Resources
- U.S. Dept. of Transportation
- AK. Division of Governmental Coordination
- AK. Dept. of Labor



# JOINT PIPELINE OFFICE

411 West 4th Avenue, Suite 2  
 Anchorage, Alaska 99501  
 (907) 271-5070/271-4336  
 FAX # (907) 272-0690

February 23, 2000

| BH  | KMM   | ESN | DEP | LDW | WHN |
|-----|---|-----|-----|-----|-----|
|     |   |     |     |     | RAS |
| LJS | RECEIVED  |     |     |     | JBL |
| PKB | MAR 09 2000   |     |     |     | JDB |
| DCL | Lon Trotter<br>Vice President<br>Corporate Services |     |     |     |     |
| WJS |   |     |     |     |     |
| RJS |   |     |     |     |     |

Letter No.: 00-008-JH  
 File No.: PT 5.35  
 DD.: N/A

Mr. Denis C. LeBlanc  
 Vice President and General Audit Manager  
 Alyeska Pipeline Service Company  
 1835 South Bragaw Street, MS 541  
 Anchorage, AK 99512

Action  Info Only   
 CARTS No.: 3677  
 Assigned To: L. Trotter - 4547  
 Dept.: FBU  
 Due Date: 2/24

Re: Corrosion Monitoring and Control of TAPS Mainline 48 inch Pipe

Dear Mr. LeBlanc:

Joint Pipeline Office (JPO), USDO/BLM, ADNR and USDOT/OPS, has reviewed the final draft Corrosion Control Management Plan Procedures (CCMP Procedures) submitted by Alyeska. JPO will take the following actions relating to TAPS corrosion monitoring and control after acceptance of the final CCMP procedures:

1. The Alyeska "Corrosion Control Management Plan," dated March 11, 1999 will be approved. (Attachment 1).
2. All out-standing-actions will be closed associated with:

JPO/Alyeska Agreement "Agreed Plan For Cathodic Protection Monitoring on TAPS" (1996 Agreement), dated March 1996 (Attachment 2).

JPO agrees Alyeska has met the requirements set forth in Section 8 of the 1996 Agreement. The proposed CCMP methodology, 1) is an effective and practical method of monitoring cathodic protection on TAPS, 2) meets industry standards and regulatory requirements, 3) provides specific implementing procedures in Alyeska Manuals OM-1 and MP-166), and 4) identifies records that will be used to determine regulatory compliance. The records to be used by Alyeska include:

- Corrosion monitoring overlay reports.
- Close interval survey reports.
- Smart Pig survey reports.
- Rectifier location and CP influence reports.
- Pipe-to-soil potential reports.

Alyeska Pipeline Service Company  
 CPF No. 5-2007-5041  
 Exhibit 43  
 Page 1 of 3

February 23, 2000

- CP coupon survey reports.
- Active corrosion plots.
- Integrated monitoring data plots.
- Annual corrosion dig lists.

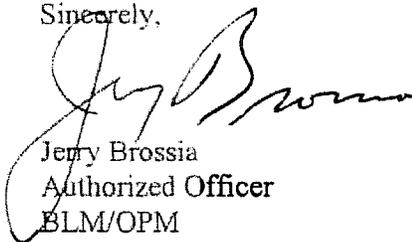
The JPO Report "Corrosion Protection Monitoring of the Trans Alaska Pipeline, Final Report" (JPO 1992 Report), dated November 1992 (Attachment 3).

JPO agrees that the proposed CCMP will meet the recommendations described in Section 4.2 of the JPO 1992 Report. The CCMP when properly implemented will meet regulatory and safety requirements, and provide a methodology for corrosion control on TAPS that will result in a level of measuring cathodic protection (CP) equal to or better than could be achieved through reliance on any single stand-alone method of CP monitoring.

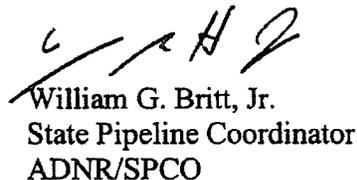
3. The CCMP Program Procedures in MP 166, if followed, will constitute compliance with requirements of Stipulation 3.10 of the Federal Grant and State Lease for the 48-inch mainline pipe.
4. The proposed CCMP Program Procedures in MP 166 and OM-1 will be used by JPO to monitor compliance with 49 CFR Part 195 for the 48-inch mainline pipe.

If you have any questions, please contact Jon Strawn of the USDOT/OPS or Robert Krenzelo of USDO/BLM our office at (907) 271-5070.

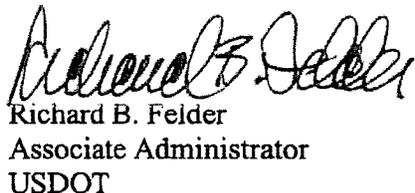
Sincerely,



Jerry Brossia  
Authorized Officer  
BLM/OPM



William G. Britt, Jr.  
State Pipeline Coordinator  
ADNR/SPCO



Richard B. Feider  
Associate Administrator  
USDOT

Attachments:

1. Corrosion Control Management Plan, Alyeska letter No. 14164.
2. Agreed Plan for Cathodic Protection Monitoring on TAPS, dated March 1996.
3. "Corrosion Protection Monitoring of the Trans Alaska Pipeline, A Final Report", Joint Pipeline Office Assessment, dated November 1992

*Mr. Denis C. LeBlanc*

3

*February 23, 2000*

*Corrosion Monitoring and Control of TAPS Mainline 48 inch Pipe*

cc:

Elden Johnson, APSC (MS 855) (w/o attachments)

Greg Swank/JPO/ADNR (w/o attachments)

Don Keyes, JPO/BLM (w/o attachments)

Chris Hoidal, USDOT (w/o attachments)



U.S. Department  
of Transportation  
Pipeline and Hazardous  
Materials Safety  
Administration

1200 New Jersey Ave., S.E.  
Washington, DC 20590

SEP 24 2007

**BY CERTIFIED MAIL (RETURN RECEIPT REQUESTED) AND FACISIMILIE (907) 450-5415**

Mr. Rob Shoaf  
Vice President, Regulatory Affairs  
Alyeska Pipeline Service Company  
900 East Benson Blvd.  
Anchorage, AK 99507

**Re: CPF No. 5-2004-5015**

|                       |                 |                                     |
|-----------------------|-----------------|-------------------------------------|
| Info Only             | Commitment      | <input checked="" type="checkbox"/> |
| GL No: 135-48         | Action No: 6332 |                                     |
| RI: T.W.F.b           |                 |                                     |
| RS: J. ROBERTSON      |                 |                                     |
| Commit Date: 10/25/07 |                 |                                     |

|                               |     |     |     |     |      |
|-------------------------------|-----|-----|-----|-----|------|
| STD                           | DUT | LAW | SEC | ENV | EHS  |
| EXC                           |     |     |     |     | FILE |
|                               |     |     |     |     | TRAV |
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| SEP 28 2007                   |     |     |     |     |      |
| Regionally<br>Reg Affairs Mgr |     |     |     |     |      |

Dear Mr. Shoaf:

Enclosed is the Final Order issued by the Associate Administrator for Pipeline Safety in the above-referenced case. It makes findings of violation and specifies actions to be taken to comply with the pipeline safety regulations. When the terms of the compliance order are completed, as determined by the Western Region Director, this enforcement action will be closed. Your receipt of this Final Order constitutes service of that document under 49 C.F.R. § 190.5.

Sincerely,

James Reynolds  
Pipeline Compliance Registry  
Office of Pipeline Safety

cc: Chris Hoidal, Director Western Region, PHMSA  
Shelia Doody-Bishop, Esq., Alyeska Pipeline Service Company

Enclosure



## FINDING OF VIOLATION

**Item 2:** Item 2 of the Notice alleged that Respondent violated 49 C.F.R. § 195.571, which states:

**49 C.F.R. § 195.571** – Cathodic protection required by this subpart must comply with one or more of the applicable criteria and other considerations for cathodic protection contained in paragraphs 6.2 and 6.3 of NACE Standard RP0169-96 (incorporated by reference, see § 195.3).

### Background

Item 2 alleged that Respondent violated 49 C.F.R. § 195.571, by failing to provide adequate cathodic protection to portions of TAPS in 2002 and 2003. The Notice alleged that certain portions of TAPS did not meet the minimum criteria set forth in paragraph 6.2 of NACE Standard RP0169-96 (NACE Standard), during tests of the pipeline's cathodic protection system.

Cathodic protection can limit corrosion on pipelines through the application of direct electric current to the metal of the pipeline. Protection is achieved when current flows to the metal in an amount sufficient to prevent the loss of metal from the pipeline to the surrounding environment. If insufficient current is provided, metal can flow from the external surface of the pipeline and corrosion can result. The NACE Standard provides a reference standard against which an operator can measure the flow of current to or from a pipeline (pipe-to-soil potential). Pipe-to-soil potentials that do not meet the NACE Standard indicate that a pipeline is not receiving the cathodic protection required by § 195.571.<sup>2</sup>

PHMSA has found that corrosion causes a significant proportion of hazardous liquid pipeline accidents.<sup>3</sup> As a result, in 2001, PHMSA incorporated the NACE Standard into the pipeline safety regulations to reduce the potential for corrosion-related pipeline leaks.<sup>4</sup> In order for Respondent to provide adequate cathodic protection for TAPS, it is essential that the company achieve and maintain full compliance with the NACE Standard.

During the inspection, a PHMSA inspector found that Respondent's 2002 Close Interval Survey (CIS), as well as CIS data from 1998, 1999, and 2000, indicated that corrected pipe-to-soil potentials, measured between TAPS survey markers 42120+88 and 42149+59 (Mile Points (MP) 797.74 and 798.28, respectively), did not meet the -850mV criteria in the NACE Standard. CIS is one of several methods used to measure pipe-to-soil potentials. A CIS is performed by measuring cathodic protection, on average, every foot along a section of pipeline. PHMSA inspectors also found that Respondent's 2002 and 2003 corrosion coupon test station readings

<sup>2</sup> See also, "Controlling Corrosion on Hazardous Liquid and Carbon Dioxide Pipelines, Final Rule," 66 Fed. Reg. 66,994, 66,998 (Dec. 27, 2001) ("The theory behind final §195.571 is that if all external surfaces of a pipeline are cathodically protected according to the criteria and other considerations in paragraphs 6.2 and 6.3 of the NACE Standard, external corrosion will be controlled successfully").

<sup>3</sup> Final Rule, 66 FR 66,994.

<sup>4</sup> *Id.*

from the MP 798.57 coupon revealed pipeline pipe-to-soil potentials that did not comply with the NACE Standard. In each instance, the failure to meet pipe-to-soil potentials indicated that the pipeline was not receiving adequate cathodic protection as required by § 195.571.

In its Response, at the Hearing and in its Closing, Respondent presented arguments in defense of PHMSA's allegation of violation and requested that the Notice be withdrawn. Respondent's arguments and PHMSA's findings are discussed below.

### **Discussion and Findings**

#### **1. The Adequacy of Respondent's Cathodic Protection System.**

Respondent did not dispute PHMSA's allegation that Respondent's CIS and coupon tests revealed pipe-to-soil potentials below the minimum NACE criteria<sup>5</sup> and acknowledged that additional corrective action was needed.<sup>6</sup> Based on a review of the record in this case, and the undisputed fact that Respondent's 2002 CIS and 2002-2003 coupon data revealed pipe-to-soil potentials that did not meet minimum criteria, I find that Respondent's cathodic protection system did not provide the level of protection required by § 195.571.

#### **2. Corrosion Monitoring.**

Although Respondent admitted that its cathodic protection system did not provide an adequate level of protection, Respondent contended in its Response that its use of In-Line Inspection (ILI) tools to monitor external corrosion constituted compliance with § 195.571.<sup>7</sup> Specifically, Respondent contended that paragraph 6.3 of the NACE Standard permitted it to use ILI instead<sup>8</sup> of meeting the criteria for cathodic protection in paragraph 6.2 of the NACE Standard § 195.571.<sup>8</sup>

I find Respondent's interpretation of § 195.571 incorrect for several reasons. Section 195.571 requires that cathodic protection "must comply with one or more of the applicable criteria *and* other considerations for cathodic protection found in the paragraphs 6.2 and 6.3 of NACE Standard RP0169-96"<sup>9</sup> (emphasis added). The use of the conjunctive "*and*" means that Respondent must provide adequate cathodic protection in accordance with paragraph 6.2 criteria while also taking into account other considerations in paragraph 6.3 of the NACE Standard. The "other considerations" indicate that respondent may use ILI as a supplemental diagnostic tool but they do not permit Respondent to substitute ILI for compliance with the criteria set forth in paragraph 6.2.<sup>10</sup>

<sup>5</sup> Response, *Probable Violation 2: Cathodic Protection* at 2 (Aug. 2, 2004), Hearing Presentation, *Issue #2 Cathodic Protection* at 2 (Sept. 21, 2005).

<sup>6</sup> Response at 3.

<sup>7</sup> Response at 2-3.

<sup>8</sup> Response at 2.

<sup>9</sup> 49 C.F.R. § 195.571.

<sup>10</sup> See NACE RP 0169-96, Paragraphs 6.3.2 and 6.3.3. See Also, Final Rule 66 FR at 66,998. Based on comments received, PHMSA specifically narrowed which NACE sections were to be incorporated into 195.571 in order to prevent operators from "deviat[ing] from the criteria and other considerations in section 6." *Id.*

Respondent's ILI program cannot replace the corrosion prevention function of an adequate cathodic protection system required by § 195.571. Cathodic protection, when adequate, serves as a continuous defense against external corrosion; whereas ILI serves only as a periodic assessment tool and indicator of external corrosion. Each method takes a different approach to pipeline corrosion and each is independently necessary. Without adequate cathodic protection, corrosion could occur undetected in the years between ILI tests and could cause a leak from Respondent's pipeline. I find that Respondent may not use ILI to see how long it can go before inadequate cathodic protection allows corrosion and damage the pipeline to occur and threaten public safety and the environment. This Final Order marks the second time that PHMSA has rejected Respondent's argument that it may conduct ILI instead of maintaining an adequate cathodic protection program.<sup>11</sup>

### 3. Corrosion Coupons.

At the hearing, PHMSA expressed concern about Respondent's level of reliance on corrosion coupons to monitor the effectiveness of its cathodic protection system. PHMSA noted the potential for corrosion occurring in sections of pipeline located between coupons in those years that Respondent does not perform CIS. In its Closing, Respondent maintained that its reliance on coupon data, supplemented by CIS to identify deteriorating trends in areas located between coupons, is an effective means of monitoring the adequacy of its cathodic protection system.<sup>12</sup> However, Respondent does not perform CIS every year and could fail to detect corrosion not indicated by coupon monitoring.

I find that coupon monitoring does not provide a comprehensive picture of corrosion trends along a pipeline, particularly between coupons locations and in years when no CIS tests are performed. In the rulemaking preamble to the final §195.571, PHMSA stated that the use of coupons alone to indicate the performance of a cathodic protection system "has not always been sufficient to assure protection of all pipeline surfaces."<sup>13</sup> A CIS gives a better indication of the cathodic protection levels on the pipe because it measures, on average, every foot along the pipeline, whereas coupon test stations are spaced, and only measure corrosion, about every half mile. Similarly, a coupon test measures corrosion of the coupon and not the pipe itself, whereas a CIS takes measurements directly from the pipe. This finding is consistent with PHMSA's findings in the previously cited Final Order issued against Respondent.<sup>14</sup>

In its Closing, Respondent also argued that PHMSA had approved Respondent's reliance on coupons as an effective means of corrosion control, as part of a broader approval of its Corrosion Control Monitoring Plan (CCMP), as set forth in a letter from the Joint Pipeline Office (JPO), dated February 23, 2000, and signed by PHMSA.<sup>15</sup> In fact, the letter did not approve the CCMP and expressly provided that only "after acceptance of the final CCMP procedures" would JPO,

<sup>11</sup> See *In the Matter of Alyeska Pipeline Service Company*, Final Order at 6, CPF No. 5-2003-5002 (May 19, 2005) (finding that Respondent's use of ILI to monitor corrosion is not a substitute for restoring protection to required levels) *aff'd in part*, Decision on Petition for Reconsideration (Mar. 3, 2006).

<sup>12</sup> Closing at 1-2.

<sup>13</sup> Final Rule, 66 Fed. Reg. at 66,999.

<sup>14</sup> *In the Matter of Alyeska Pipeline Service Company*, Final Order at 4, CPF No. 5-2003-5002.

<sup>15</sup> Closing at 2.

including PHMSA, accept the CCMP. PHMSA never accepted the final CCMP procedures and never accepted the CCMP.

#### 4. Respondent's cathodic protection improvements.

At the hearing and in its Closing, Respondent presented evidence of improvements that it had made to its cathodic protection system after the inspection date, in support of its request that the Notice be withdrawn. One improvement was the 2004 isolation of the Petro Star refinery, located at MP 796, and the addition of an adjustable resistance bond to control loss of current to the refinery.<sup>16</sup> Respondent attempted to show another improvement by listing the results of the 2005 coupon testing at MP 798.57, which showed that the coupon met NACE corrosion protection criteria.<sup>17</sup> However, in its Closing, Respondent acknowledged that its 2005 CIS data indicated that none of the pipe-to-soil potentials measured between MP 797.74 and 798.28 met the -850mV NACE criteria.<sup>18</sup> Respondent explained that repairs to the nearby Valdez Marine Terminal required it to de-energize the cathodic protection systems and led to the inadequate pipe-to-soil potentials measured by CIS in 2005 and its failure to meet the NACE criteria.

Although Respondent's 2005 coupon survey appeared to meet NACE criteria, it only serves as an indicator of corrosion at the location of the coupon and did not provide sufficient evidence of adequate cathodic protection. Information presented at the hearing and in the Closing show that Respondent's system continues to fail to provide adequate cathodic protection.<sup>19</sup> As Respondent is aware, attempts to achieve compliance *after* an inspection do not warrant PHMSA's withdrawal of violations.<sup>20</sup>

In its Response, Respondent also stated that it would take additional corrective actions to its cathodic protection system by the end of 2006. Respondent contended that this would constitute corrective action "within a reasonable time," in accordance with 49 C.F.R. § 195.401(b). I disagree. Respondent has been well aware of the inadequacy of its cathodic protection system for several years and its failure to correct such condition within that time period does not constitute correction "within a reasonable time" under § 195.401(b).

#### Summary of Findings

After considering all of the evidence and legal issues presented, I find that Respondent has violated § 195.571 as alleged in Item 2 of the Notice, for 2002 and 2003, because its cathodic protection system did not comply with the applicable criteria for cathodic protection contained in paragraph 6.2 of the NACE Standard. Because Respondent's system did not provide adequate cathodic protection, the risk of a corrosion-related pipeline accident and harm to the public, property and the environment was increased. Respondent's practice of ILI, while useful and

<sup>16</sup> Hearing Presentation at 5.

<sup>17</sup> *Id.* at 6-7.

<sup>18</sup> Closing at 2.

<sup>19</sup> See Hearing Presentation at 6; Closing at 2.

<sup>20</sup> See *In the Matter of Alyeska Pipeline Service Company*, Final Order at 6, CPF No. 5-2003-5002 (finding that "mitigation [of a proposed civil penalty] is not warranted for taking corrective action to address...low cathodic protection readings..."). Just as subsequent corrective action did not warrant mitigation of civil penalties in that case, it does not warrant withdrawal of the violation here.

necessary to comply with other Part 195 pipeline inspection requirements, does not satisfy the requirements of § 195.571. Additionally, the remedial efforts Respondent has made since the inspection have not been sufficient to provide adequate cathodic protection nor do these measures warrant withdrawal of the Notice. This finding of violation will be considered a prior offense in any subsequent enforcement action taken against Respondent.<sup>21</sup>

### COMPLIANCE ORDER

The Notice proposed a compliance order with respect to Item 2 for violation of 49 C.F.R. § 195.571. Under 49 U.S.C. § 60118(a), each person who engages in the transportation of hazardous liquids or who owns or operates a pipeline facility is required to comply with the applicable safety standards established under Chapter 601. Pursuant to the authority of 49 U.S.C. § 60118(b) and 49 C.F.R. § 190.217, Respondent is ordered to take the following actions to ensure compliance with the pipeline safety regulations applicable to its operations.

Respondent shall:

1. Within 30 days of receipt of this Order, submit for approval by the Western Region Director a written plan (Plan) to bring cathodic protection levels between MP 797.74 and 798.28 and in the vicinity of MP 798.57 into compliance with one or more of the applicable criteria and other considerations for cathodic protection contained in paragraphs 6.2 and 6.3 of NACE Standard RP0169-96, as required by 49 C.F.R. § 195.571. The Plan shall provide for the addition of cathodic protection where necessary to meet one or more of the criteria in paragraph 6.2 of the NACE Standard. The Plan shall also provide for continued Close Interval Surveys of the adequacy of cathodic protection on TAPS, at the locations described above, to ensure cathodic protection is in compliance with § 195.571. The Plan shall also provide a list and description of proposed remedial measures needed to bring the cathodic protection system into compliance with § 195.571 and a schedule for completion of the remedial measures.
2. Within 30 days of approval by the Western Region Director of the Plan described in Paragraph one (1) above, bring the level of cathodic protection into compliance with one of the criteria in paragraph 6.2 of the NACE Standard, as required by 49 C.F.R. § 195.571.
3. Within 30 days of the addition of cathodic protection as required by Paragraphs one (1) and two (2) above, submit a written report to the Western Region Director demonstrating that the cathodic protection deficiencies noted in this Final Order have been addressed in accordance with the approved Plan.

The Director may grant an extension of time to comply with any of the required items upon a written request timely submitted by the Respondent demonstrating good cause for an extension.

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<sup>21</sup> As mentioned supra, PHMSA issued an earlier Final Order that rejected Respondent's argument that ILI could satisfy the NACE Standard imposed by §195.571. See *In the Matter of Alyeska Pipeline Service Company*, Final Order at 6, CPF No. 5-2003-5002. The earlier Final Order was not been issued as of the date the Notice was issued in this case and therefore the violation of § 195.571 cannot be deemed a prior offence.

**WARNING ITEM**

With respect to Item 1, the Notice alleged a probable violation of Part 195 but did not propose a civil penalty or compliance order for this Item. Therefore, this is considered to be a Warning Item. The warning was for:

49 C.F.R. § 195.573 — Respondent's failure to perform electrical checks for proper performance of the cathodic protection rectifier (20-EEA-116-1) located at Remote Gate Valve (RGV) 116 (MP 747.2) from October 2, 2002, to June 17, 2003. Electrical checks of this rectifier exceeded the 2½ month maximum check frequency required by 49 C.F.R. § 195.573(c).

Respondent presented information in its Response showing that it had taken certain actions to address this Item. Respondent contended that its failure to timely inspect the cathodic protection rectifier at RGV 116 was justified by safety concerns arising from unusually severe avalanche conditions during the winter of 2002-2003. As discussed during the hearing, Respondent could have applied for a waiver of the time limits during the winter months or it could have provided for the remote monitoring of rectifiers. In did neither. In its Closing, Respondent informed PHMSA that it was working to find effective alternatives for monitoring RGV rectifiers. In any case, Respondent should immediately notify the Western Region Director whenever it fears that it will not be able to perform maintenance within required intervals.

Having considered such information, I find, pursuant to 49 C.F.R. § 190.205, that a probable - violation of 49 C.F.R. § 195.573(c) has occurred and Respondent is hereby advised to correct such condition. In the event that PHMSA finds a violation of this item in a subsequent inspection, Respondent may be subject to future enforcement action.

In accordance with 49 U.S.C. § 60122 and 49 C.F.R. § 190.223, failure to comply with this Final Order may result in the assessment of administrative civil penalties of not more than \$100,000 per violation per day pursuant to 49 U.S.C. § 60122, or in the imposition of civil judicial penalties and other appropriate relief pursuant to 49 U.S.C. § 60120.

Under 49 C.F.R. § 190.215, Respondent has a right to submit a Petition for Reconsideration of this Final Order. The petition must be received within 20 days of Respondent's receipt of this Final Order and must contain a brief statement of the issues. The terms of the order, including any required corrective action, remain in full effect unless the Associate Administrator, upon request, grants a stay. The terms and conditions of this Final Order are effective on receipt.

*William H. Guter*  
602

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Jeffrey D. Wiese  
Associate Administrator  
for Pipeline Safety

9-24-07  
Date Issued

**PROBABLE VIOLATION 16b:  
External Corrosion Control**

**PHMSA POSITION**

**Pertinent Regulation:**

49 CFR §195.402 Procedural manual for operations, maintenance, and emergencies

- (a) General. Each operator shall prepare and follow for each pipeline system a manual of written procedures for conducting normal operations and maintenance activities and handling abnormal operations and emergencies. This manual shall be reviewed at intervals not exceeding 15 months, but at least once each calendar year, and appropriate changes made as necessary to insure that the manual is effective. This manual shall be prepared before initial operations of a pipeline system commence, and appropriate parts shall be kept at locations where operations and maintenance activities are conducted.
- (c) Maintenance and normal operations. The manual required by paragraph (a) of this section must include procedures for the following to provide safety during maintenance and normal operations:
  - (3) Operating, maintaining, and repairing the pipeline system in accordance with each of the requirements of this subpart and subpart H of this part.

*Background Regulations*

49 CFR §195.573 What must I do to monitor external corrosion control?

- (e) Corrective action. You must correct any identified deficiency in corrosion control as required by §195.401(b). However, if the deficiency involves a pipeline in an integrity management program under §195.452, you must correct the deficiency as required by §195.452(h).

49 CFR §195.571 What criteria must I use to determine the adequacy of cathodic protection?

Cathodic protection required by this subpart must comply with one or more of the applicable criteria and other considerations for cathodic protection contained in paragraphs 6.2 and 6.3 of NACE Standard RP 0169.

**Findings:**

Alyeska's procedures for cathodic protection coupon data analysis are grossly deficient because they allow Alyeska to take no action to remediate cathodic protection on areas of the pipeline that do not meet the NACE criteria referenced by §195.571. MP 166-3.22 "Pipeline Cathodic Protection Systems, Section 5.2.1.2, CP Coupon Data Analysis, and

MP 166-3.19, Section 5.2 Analysis of Data, allow Alyeska to take no action on areas which do not meet NACE criteria. It is inappropriate for more than one (1) year to pass before areas of low protection are remediated. However, in some instances remediation must occur in less than one (1) year.

**Proposed Civil Penalty:**

Regarding Item 16b, the Compliance Officer has reviewed the circumstances and supporting documentation involved in the probable violation(s) and has recommended that Alyeska be preliminarily assessed a civil penalty in the amount of \$42,000.00.

**Proposed Compliance Order:**

In regard to Item Number 16b of the Notice pertaining to Alyeska's deficient procedures for the mitigation of inadequate cathodic protection when level are found by monitoring activities to be low, Alyeska must revise its procedures to require remediation of areas of inadequate cathodic protection within one (1) year of detection of cathodic protection that does not comply with one or more of the applicable criteria and other considerations for cathodic protection contained in paragraphs 6.2 and 6.3 of the NACE Standard RP0169 (incorporated by reference, see §195.3). Within sixty (60) days of receipt of the Final Order, Alyeska shall submit the revised procedures to the Director, for approval or modification. Within sixty (60) days of the Director's approval or modification Alyeska shall implement the revised procedures.

**ALYESKA PIPELINE SERVICE COMPANY'S RESPONSE**

**Summary:**

While Alyeska Pipeline Service Company (Alyeska) respectfully disagrees with PHMSA's finding that its procedures for cathodic protection (CP) coupon data analysis are grossly deficient, Alyeska agrees to modify its procedures to address PHMSA's concerns. Alyeska requests that the finding and the proposed compliance order be withdrawn, and PHMSA reconsider the proposed civil penalty.

**Discussion:**

Alyeska agrees to rewrite its Integrity Management Engineering Monitoring Program Procedures related to:

1. Criteria used for the determination of CP adequacy – 49 CFR §195.571
2. The time-frame for correction of inadequate CP – 49 CFR §195.401(b).

In so doing, Alyeska agrees to rewrite procedure MP-166-3.22, *Pipeline Cathodic Protection Systems* and MP-166-3.19, *Integrated Monitoring*. Criteria used to determine the adequacy of CP is outlined in response to Finding 16a. The following discussion addresses the time frame for taking corrective action when inadequate CP is discovered.

Alyeska agrees to rewrite MP-166-3.22 and MP-166-3.19 to incorporate the following corrective action provision:

Where CP is determined inadequate, corrective action will be taken:

- a. within 18 months of discovery based on CP coupons;
- b. within 24 months of discovery based on CIS.

Alyeska agrees to take corrective action within 18 months of discovery based on CP coupon monitoring data. The 18 month period will allow at least one full construction season to install repairs discovered during the previous monitoring season (between June and September). Alyeska considers CIS data to be less reliable than CP coupons (for reasons cited below) and thus requires additional time for a confirmatory reading. The need for a confirmatory CIS reading, possibly extending into the next season, coupled with added constraints imposed by the short monitoring season dictate a maximum 24 month discovery period based on CIS data (CIS cannot be conducted through a frozen or snow-covered ground surface).

Beginning in late 1992, Alyeska was challenged by DOT and JPO to develop CP monitoring procedures in compliance with NACE RP-0169. The unique CP design and operating environment of TAPS made compliance with these standards extremely difficult. In particular, permanently connected zinc ribbon anodes, telluric currents and IR drop between ground surface and burial depth create significant error sources when using conventional test stations or over-the-line close interval survey techniques. The presence of a large diameter pipe was also thought to misrepresent the level of CP current protecting the area below the spring line of TAPS.

In concert with DOT and JPO, Alyeska conducted extensive research and development in the use of CP monitoring coupons over a seven year period. This coordinated effort culminated in March 1996 with a CP Coupon Agreement and in 2000 with regulatory acceptance of the Corrosion Control Management Plan (CCMP) (see Exhibit 45). All parties agreed that CP monitoring coupons were a valid means of monitoring the adequacy of CP on TAPS.

Alyeska maintains that CP coupons constitute the best available CP monitoring technology on TAPS and are vastly more reliable than CIS. CIS monitoring by comparison, does not compensate for permanently connected zinc anodes, and is less reliable in compensating for telluric currents, IR drop at pipe depth, and shielding by large diameter pipe. Alyeska considers CP deficiencies identified by CIS to be discovered only if confirmed by a second reading under different environmental conditions.

Due to its northern location, Alyeska is constrained in conducting CP monitoring activities by winter weather and darkness to a greater extent than any U.S. pipeline. The monitoring season is effectively reduced to the four month period between June and September. The need to obtain confirmation of CIS readings coupled with the short monitoring season necessitates a two year discovery period.

Alyeska believes the proposed corrective action criteria are reasonable and consistent with a) stated regulatory requirements of §195.573(e), b) the regulatory intent expressed by this finding, and c) criteria previously documented in the CCMP. 49 CFR §195.573(e), *Corrective action*, states, you must correct any identified deficiency in corrosion control as required by §195.401(b). §195.401(b) states that an operator must correct unsafe conditions in a "reasonable time." Section 3 of the CCMP was intended to document agreements between Alyeska and regulatory bodies at the completion of the seven year CP monitoring development program. Paragraph 4 of Section 3 explains the remediation will be performed within 24 months from the time of discovery unless extenuating circumstances are approved by regulatory agencies.

Alyeska agrees to modify procedures MP-166-3.19, *Integrated Monitoring* and MP-166-3.22 *Pipeline Cathodic Protection*, incorporating these new corrective action requirements.

Alyeska contends that the proposed civil penalty is unsupported by the Finding and inapplicable to the proposed compliance order to amend procedures. There does not appear to be any rationale for calculating the proposed civil penalty. 49 U.S.C. § 60122(b) provides the Secretary of Transportation guidance for determining the severity of the proposed penalty. The Secretary must consider the nature, circumstances, and gravity of the violation, including adverse impact on the environment. 49 U.S.C. §60122(b)(1)(A). The failure to have adequate corrosion control remediation procedures, while significant, does not rise to this level of monetary penalty. There was no adverse impact on the environment, nor was there damage to the facility.

PHMSA has been aware of Alyeska's CP criteria and procedures since early 2000 with the formulation of the CCMP (see Exhibit 45). While PHMSA has previously expressed opinions regarding its approval of the CCMP, the use of CP coupons, CIS, and ILI data in making CP corrective action decisions in southern sections of TAPS, it did not previously direct Alyeska to change its procedures. The current finding is the first time Alyeska has been directed by PHMSA to modify its procedures. Even though the Final Order in CPF 5-2004-5015 states that the finding of violation will be considered a prior offense in subsequent enforcement actions, this Finding is not the same nor substantially similar enough to be considered a subsequent offense. (See Exhibit 46). First, the order in CPF 5-2004-5015 was to remediate a specific location for low CP readings. This Finding references the CP monitoring program procedures. Second, the Final Order in CPF 5-2004-5015 was issued on September 24, 2007. The inspections conducted which resulted in this Finding were held in August, September and October of 2007. As the Finding is not specific enough to identify the timeframe of inspection, to link the amount of the proposed civil penalty, Alyeska believes there is not enough information to confirm that PHMSA had issued the Final Order prior to the inspection. Therefore, the proposed civil penalty is excessive under the circumstances.

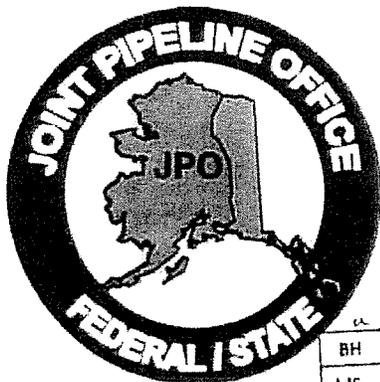
NOPV CPF 5-2007-5041  
Finding No. 16b: External Corrosion Control  
2/26/08

With regard to Finding 16b, Alyeska will modify its procedures. With regard to the proposed civil penalty, Alyeska requests that PHMSA reconsider the proposed civil penalty.

**SUPPORTING DOCUMENTATION**

Exhibit 45 - Government Letter 3677, Letter from JPO to Alyeska re: Corrosion Control Management Plan Procedures, dated February 23, 2000.  
Exhibit 46 - CPF No. 5-2004-5015, Final Order, dated September 24, 2007.

- AK. Dept. of Environmental Coordination
- U.S. Bureau of Land Management
- AK. Dept. of Fish & Game
- U.S. Environmental Protection Agency
- AK. Dept. of Natural Resources
- U.S. Dept. of Transportation
- AK. Division of Governmental Coordination
- AK. Dept. of Labor



# JOINT PIPELINE OFFICE

411 West 4th Avenue, Suite 2  
 Anchorage, Alaska 99501  
 (907) 271-5070/271-4336  
 FAX # (907) 272-0690

February 23, 2000

| BH  | KMM                | ESN | DEP | LDW | WHN |
|-----|--------------------|-----|-----|-----|-----|
| LJS | RECEIVED           |     |     |     | RAS |
| PKB | MAR 09 2000        |     |     |     | JBL |
| DCL | Lon Trotter        |     |     |     | JDB |
| WJS | Vice President     |     |     |     |     |
|     | Corporate Services |     |     |     |     |

Letter No.: 00-008-JH  
 File No.: PT 5.35  
 DD.: N/A

Mr. Denis C. LeBlanc  
 Vice President and General Audit Manager  
 Alyeska Pipeline Service Company  
 1835 South Bragaw Street, MS 541  
 Anchorage, AK 99512

Action  Info Only   
 CARTS No.: 3677  
 Assigned To: L. Trotter - 45867  
 Dept.: FB4  
 Due Date: 3/12

**Re: Corrosion Monitoring and Control of TAPS Mainline 48 inch Pipe**

Dear Mr. LeBlanc:

Joint Pipeline Office (JPO), USDO/BLM, ADNR and USDOT/OPS, has reviewed the final draft Corrosion Control Management Plan Procedures (CCMP Procedures) submitted by Alyeska. JPO will take the following actions relating to TAPS corrosion monitoring and control after acceptance of the final CCMP procedures:

1. The Alyeska "Corrosion Control Management Plan," dated March 11, 1999 will be approved. (Attachment 1).
2. All out-standing-actions will be closed associated with:

JPO/Alyeska Agreement "Agreed Plan For Cathodic Protection Monitoring on TAPS" (1996 Agreement), dated March 1996 (Attachment 2).

JPO agrees Alyeska has met the requirements set forth in Section 8 of the 1996 Agreement. The proposed CCMP methodology, 1) is an effective and practical method of monitoring cathodic protection on TAPS, 2) meets industry standards and regulatory requirements, 3) provides specific implementing procedures in Alyeska Manuals OM-1 and MP-166), and 4) identifies records that will be used to determine regulatory compliance. The records to be used by Alyeska include:

- Corrosion monitoring overlay reports.
- Close interval survey reports.
- Smart Pig survey reports.
- Rectifier location and CP influence reports.
- Pipe-to-soil potential reports.

February 23, 2000

- CP coupon survey reports.
- Active corrosion plots.
- Integrated monitoring data plots.
- Annual corrosion dig lists.

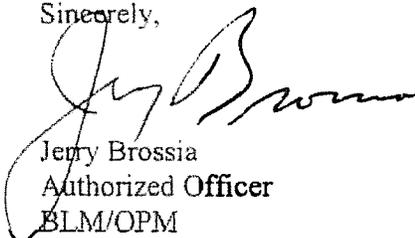
The JPO Report "Corrosion Protection Monitoring of the Trans Alaska Pipeline, Final Report" (JPO 1992 Report), dated November 1992 (Attachment 3).

JPO agrees that the proposed CCMP will meet the recommendations described in Section 4.2 of the JPO 1992 Report. The CCMP when properly implemented will meet regulatory and safety requirements, and provide a methodology for corrosion control on TAPS that will result in a level of measuring cathodic protection (CP) equal to or better than could be achieved through reliance on any single stand-alone method of CP monitoring.

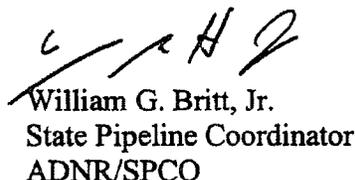
3. The CCMP Program Procedures in MP 166, if followed, will constitute compliance with requirements of Stipulation 3.10 of the Federal Grant and State Lease for the 48-inch mainline pipe.
4. The proposed CCMP Program Procedures in MP 166 and OM-1 will be used by JPO to monitor compliance with 49 CFR Part 195 for the 48-inch mainline pipe.

If you have any questions, please contact Jon Strawn of the USDOT/OPS or Robert Krenzelok of USDO/BLM our office at (907) 271-5070.

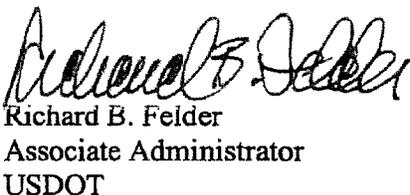
Sincerely,



Jerry Brossia  
Authorized Officer  
BLM/OPM



William G. Britt, Jr.  
State Pipeline Coordinator  
ADNR/SPCO



Richard B. Felder  
Associate Administrator  
USDOT

Attachments:

1. Corrosion Control Management Plan, Alyeska letter No. 14164.
2. Agreed Plan for Cathodic Protection Monitoring on TAPS, dated March 1996.
3. "Corrosion Protection Monitoring of the Trans Alaska Pipeline, A Final Report", Joint Pipeline Office Assessment, dated November 1992

Mr. Denis C. LeBlanc

3

February 23, 2000

*Corrosion Monitoring and Control of TAPS Mainline 48 inch Pipe*

cc:

Elden Johnson, APSC (MS 855) (w/o attachments)  
Greg Swank/JPO/ADNR (w/o attachments)  
Don Keyes, JPO/BLM (w/o attachments)  
Chris Hoidal, USDOT (w/o attachments)





## FINDING OF VIOLATION

**Item 2:** Item 2 of the Notice alleged that Respondent violated 49 C.F.R. § 195.571, which states:

**49 C.F.R. § 195.571** – Cathodic protection required by this subpart must comply with one or more of the applicable criteria and other considerations for cathodic protection contained in paragraphs 6.2 and 6.3 of NACE Standard RP0169-96 (incorporated by reference, see § 195.3).

### Background

Item 2 alleged that Respondent violated 49 C.F.R. § 195.571, by failing to provide adequate cathodic protection to portions of TAPS in 2002 and 2003. The Notice alleged that certain portions of TAPS did not meet the minimum criteria set forth in paragraph 6.2 of NACE Standard RP0169-96 (NACE Standard), during tests of the pipeline's cathodic protection system.

Cathodic protection can limit corrosion on pipelines through the application of direct electric current to the metal of the pipeline. Protection is achieved when current flows to the metal in an amount sufficient to prevent the loss of metal from the pipeline to the surrounding environment. If insufficient current is provided, metal can flow from the external surface of the pipeline and corrosion can result. The NACE Standard provides a reference standard against which an operator can measure the flow of current to or from a pipeline (pipe-to-soil potential). Pipe-to-soil potentials that do not meet the NACE Standard indicate that a pipeline is not receiving the cathodic protection required by § 195.571.<sup>2</sup>

PHMSA has found that corrosion causes a significant proportion of hazardous liquid pipeline accidents.<sup>3</sup> As a result, in 2001, PHMSA incorporated the NACE Standard into the pipeline safety regulations to reduce the potential for corrosion-related pipeline leaks.<sup>4</sup> In order for Respondent to provide adequate cathodic protection for TAPS, it is essential that the company achieve and maintain full compliance with the NACE Standard.

During the inspection, a PHMSA inspector found that Respondent's 2002 Close Interval Survey (CIS), as well as CIS data from 1998, 1999, and 2000, indicated that corrected pipe-to-soil potentials, measured between TAPS survey markers 42120+88 and 42149+59 (Mile Points (MP) 797.74 and 798.28, respectively), did not meet the -850mV criteria in the NACE Standard. CIS is one of several methods used to measure pipe-to-soil potentials. A CIS is performed by measuring cathodic protection, on average, every foot along a section of pipeline. PHMSA inspectors also found that Respondent's 2002 and 2003 corrosion coupon test station readings

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<sup>2</sup> See also, "Controlling Corrosion on Hazardous Liquid and Carbon Dioxide Pipelines, Final Rule," 66 Fed. Reg. 66,994, 66,998 (Dec. 27, 2001) ("The theory behind final §195.571 is that if all external surfaces of a pipeline are cathodically protected according to the criteria and other considerations in paragraphs 6.2 and 6.3 of the NACE Standard, external corrosion will be controlled successfully").

<sup>3</sup> Final Rule, 66 FR 66,994.

<sup>4</sup> *Id.*

from the MP 798.57 coupon revealed pipeline pipe-to-soil potentials that did not comply with the NACE Standard. In each instance, the failure to meet pipe-to-soil potentials indicated that the pipeline was not receiving adequate cathodic protection as required by § 195.571.

In its Response, at the Hearing and in its Closing, Respondent presented arguments in defense of PHMSA's allegation of violation and requested that the Notice be withdrawn. Respondent's arguments and PHMSA's findings are discussed below.

### **Discussion and Findings**

#### **1. The Adequacy of Respondent's Cathodic Protection System.**

Respondent did not dispute PHMSA's allegation that Respondent's CIS and coupon tests revealed pipe-to-soil potentials below the minimum NACE criteria<sup>5</sup> and acknowledged that additional corrective action was needed.<sup>6</sup> Based on a review of the record in this case, and the undisputed fact that Respondent's 2002 CIS and 2002-2003 coupon data revealed pipe-to-soil potentials that did not meet minimum criteria, I find that Respondent's cathodic protection system did not provide the level of protection required by § 195.571.

#### **2. Corrosion Monitoring.**

Although Respondent admitted that its cathodic protection system did not provide an adequate level of protection, Respondent contended in its Response that its use of In-Line Inspection (ILI) tools to monitor external corrosion constituted compliance with § 195.571.<sup>7</sup> Specifically, Respondent contended that paragraph 6.3 of the NACE Standard permitted it to use ILI instead of meeting the criteria for cathodic protection in paragraph 6.2 of the NACE Standard § 195.571.<sup>8</sup>

I find Respondent's interpretation of § 195.571 incorrect for several reasons. Section 195.571 requires that cathodic protection "must comply with one or more of the applicable criteria *and* other considerations for cathodic protection found in the paragraphs 6.2 and 6.3 of NACE Standard RP0169-96"<sup>9</sup> (emphasis added). The use of the conjunctive "*and*" means that Respondent must provide adequate cathodic protection in accordance with paragraph 6.2 criteria while also taking into account other considerations in paragraph 6.3 of the NACE Standard. The "other considerations" indicate that respondent may use ILI as a supplemental diagnostic tool but they do not permit Respondent to substitute ILI for compliance with the criteria set forth in paragraph 6.2.<sup>10</sup>

<sup>5</sup> Response, *Probable Violation 2: Cathodic Protection* at 2 (Aug. 2, 2004), Hearing Presentation, *Issue #2 Cathodic Protection* at 2 (Sept. 21, 2005).

<sup>6</sup> Response at 3.

<sup>7</sup> Response at 2-3.

<sup>8</sup> Response at 2.

<sup>9</sup> 49 C.F.R. § 195.571.

<sup>10</sup> See NACE RP 0169-96, Paragraphs 6.3.2 and 6.3.3. See Also, Final Rule 66 FR at 66,998. Based on comments received, PHMSA specifically narrowed which NACE sections were to be incorporated into 195.571 in order to prevent operators from "deviat[ing] from the criteria and other considerations in section 6." *Id.*

Respondent's ILI program cannot replace the corrosion prevention function of an adequate cathodic protection system required by § 195.571. Cathodic protection, when adequate, serves as a continuous defense against external corrosion; whereas ILI serves only as a periodic assessment tool and indicator of external corrosion. Each method takes a different approach to pipeline corrosion and each is independently necessary. Without adequate cathodic protection, corrosion could occur undetected in the years between ILI tests and could cause a leak from Respondent's pipeline. I find that Respondent may not use ILI to see how long it can go before inadequate cathodic protection allows corrosion and damage the pipeline to occur and threaten public safety and the environment. This Final Order marks the second time that PHMSA has rejected Respondent's argument that it may conduct ILI instead of maintaining an adequate cathodic protection program.<sup>11</sup>

### 3. Corrosion Coupons.

At the hearing, PHMSA expressed concern about Respondent's level of reliance on corrosion coupons to monitor the effectiveness of its cathodic protection system. PHMSA noted the potential for corrosion occurring in sections of pipeline located between coupons in those years that Respondent does not perform CIS. In its Closing, Respondent maintained that its reliance on coupon data, supplemented by CIS to identify deteriorating trends in areas located between coupons, is an effective means of monitoring the adequacy of its cathodic protection system.<sup>12</sup> However, Respondent does not perform CIS every year and could fail to detect corrosion not indicated by coupon monitoring.

I find that coupon monitoring does not provide a comprehensive picture of corrosion trends along a pipeline, particularly between coupons locations and in years when no CIS tests are performed. In the rulemaking preamble to the final §195.571, PHMSA stated that the use of coupons alone to indicate the performance of a cathodic protection system "has not always been sufficient to assure protection of all pipeline surfaces."<sup>13</sup> A CIS gives a better indication of the cathodic protection levels on the pipe because it measures, on average, every foot along the pipeline, whereas coupon test stations are spaced, and only measure corrosion, about every half mile. Similarly, a coupon test measures corrosion of the coupon and not the pipe itself, whereas a CIS takes measurements directly from the pipe. This finding is consistent with PHMSA's findings in the previously cited Final Order issued against Respondent.<sup>14</sup>

In its Closing, Respondent also argued that PHMSA had approved Respondent's reliance on coupons as an effective means of corrosion control, as part of a broader approval of its Corrosion Control Monitoring Plan (CCMP), as set forth in a letter from the Joint Pipeline Office (JPO), dated February 23, 2000, and signed by PHMSA.<sup>15</sup> In fact, the letter did not approve the CCMP and expressly provided that only "after acceptance of the final CCMP procedures" would JPO,

<sup>11</sup> See *In the Matter of Alyeska Pipeline Service Company*, Final Order at 6, CPF No. 5-2003-5002 (May 19, 2005) (finding that Respondent's use of ILI to monitor corrosion is not a substitute for restoring protection to required levels) *aff'd in part*, Decision on Petition for Reconsideration (Mar. 3, 2006).

<sup>12</sup> Closing at 1-2.

<sup>13</sup> Final Rule, 66 Fed. Reg. at 66,999.

<sup>14</sup> *In the Matter of Alyeska Pipeline Service Company*, Final Order at 4, CPF No. 5-2003-5002.

<sup>15</sup> Closing at 2.

including PHMSA, accept the CCMP. PHMSA never accepted the final CCMP procedures and never accepted the CCMP.

#### 4. Respondent's cathodic protection improvements.

At the hearing and in its Closing, Respondent presented evidence of improvements that it had made to its cathodic protection system after the inspection date, in support of its request that the Notice be withdrawn. One improvement was the 2004 isolation of the Petro Star refinery, located at MP 796, and the addition of an adjustable resistance bond to control loss of current to the refinery.<sup>16</sup> Respondent attempted to show another improvement by listing the results of the 2005 coupon testing at MP 798.57, which showed that the coupon met NACE corrosion protection criteria.<sup>17</sup> However, in its Closing, Respondent acknowledged that its 2005 CIS data indicated that none of the pipe-to-soil potentials measured between MP 797.74 and 798.28 met the -850mV NACE criteria.<sup>18</sup> Respondent explained that repairs to the nearby Valdez Marine Terminal required it to de-energize the cathodic protection systems and led to the inadequate pipe-to-soil potentials measured by CIS in 2005 and its failure to meet the NACE criteria.

Although Respondent's 2005 coupon survey appeared to meet NACE criteria, it only serves as an indicator of corrosion at the location of the coupon and did not provide sufficient evidence of adequate cathodic protection. Information presented at the hearing and in the Closing show that Respondent's system continues to fail to provide adequate cathodic protection.<sup>19</sup> As Respondent is aware, attempts to achieve compliance *after* an inspection do not warrant PHMSA's withdrawal of violations.<sup>20</sup>

In its Response, Respondent also stated that it would take additional corrective actions to its cathodic protection system by the end of 2006. Respondent contended that this would constitute corrective action "within a reasonable time," in accordance with 49 C.F.R. § 195.401(b). I disagree. Respondent has been well aware of the inadequacy of its cathodic protection system for several years and its failure to correct such condition within that time period does not constitute correction "within a reasonable time" under § 195.401(b).

#### Summary of Findings

After considering all of the evidence and legal issues presented, I find that Respondent has violated § 195.571 as alleged in Item 2 of the Notice, for 2002 and 2003, because its cathodic protection system did not comply with the applicable criteria for cathodic protection contained in paragraph 6.2 of the NACE Standard. Because Respondent's system did not provide adequate cathodic protection, the risk of a corrosion-related pipeline accident and harm to the public, property and the environment was increased. Respondent's practice of ILI, while useful and

<sup>16</sup> Hearing Presentation at 5.

<sup>17</sup> *Id.* at 6-7.

<sup>18</sup> Closing at 2.

<sup>19</sup> See Hearing Presentation at 6; Closing at 2.

<sup>20</sup> See *In the Matter of Alyeska Pipeline Service Company*, Final Order at 6, CPF No. 5-2003-5002 (finding that "mitigation [of a proposed civil penalty] is not warranted for taking corrective action to address...low cathodic protection readings..."). Just as subsequent corrective action did not warrant mitigation of civil penalties in that case, it does not warrant withdrawal of the violation here.

necessary to comply with other Part 195 pipeline inspection requirements, does not satisfy the requirements of § 195.571. Additionally, the remedial efforts Respondent has made since the inspection have not been sufficient to provide adequate cathodic protection nor do these measures warrant withdrawal of the Notice. This finding of violation will be considered a prior offense in any subsequent enforcement action taken against Respondent.<sup>21</sup>

### COMPLIANCE ORDER

The Notice proposed a compliance order with respect to Item 2 for violation of 49 C.F.R. § 195.571. Under 49 U.S.C. § 60118(a), each person who engages in the transportation of hazardous liquids or who owns or operates a pipeline facility is required to comply with the applicable safety standards established under Chapter 601. Pursuant to the authority of 49 U.S.C. § 60118(b) and 49 C.F.R. § 190.217, Respondent is ordered to take the following actions to ensure compliance with the pipeline safety regulations applicable to its operations.

Respondent shall:

1. Within 30 days of receipt of this Order, submit for approval by the Western Region Director a written plan (Plan) to bring cathodic protection levels between MP 797.74 and 798.28 and in the vicinity of MP 798.57 into compliance with one or more of the applicable criteria and other considerations for cathodic protection contained in paragraphs 6.2 and 6.3 of NACE Standard RP0169-96, as required by 49 C.F.R. § 195.571. The Plan shall provide for the addition of cathodic protection where necessary to meet one or more of the criteria in paragraph 6.2 of the NACE Standard. The Plan shall also provide for continued Close Interval Surveys of the adequacy of cathodic protection on TAPS, at the locations described above, to ensure cathodic protection is in compliance with § 195.571. The Plan shall also provide a list and description of proposed remedial measures needed to bring the cathodic protection system into compliance with § 195.571 and a schedule for completion of the remedial measures.
2. Within 30 days of approval by the Western Region Director of the Plan described in Paragraph one (1) above, bring the level of cathodic protection into compliance with one of the criteria in paragraph 6.2 of the NACE Standard, as required by 49 C.F.R. § 195.571.
3. Within 30 days of the addition of cathodic protection as required by Paragraphs one (1) and two (2) above, submit a written report to the Western Region Director demonstrating that the cathodic protection deficiencies noted in this Final Order have been addressed in accordance with the approved Plan.

The Director may grant an extension of time to comply with any of the required items upon a written request timely submitted by the Respondent demonstrating good cause for an extension.

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<sup>21</sup> As mentioned supra, PHMSA issued an earlier Final Order that rejected Respondent's argument that ILI could satisfy the NACE Standard imposed by §195.571. See *In the Matter of Alyeska Pipeline Service Company*, Final Order at 6, CPF No. 5-2003-5002. The earlier Final Order was not been issued as of the date the Notice was issued in this case and therefore the violation of § 195.571 cannot be deemed a prior offence.

**WARNING ITEM**

With respect to Item 1, the Notice alleged a probable violation of Part 195 but did not propose a civil penalty or compliance order for this Item. Therefore, this is considered to be a Warning Item. The warning was for:

49 C.F.R. § 195.573 — Respondent's failure to perform electrical checks for proper performance of the cathodic protection rectifier (20-EEA-116-1) located at Remote Gate Valve (RGV) 116 (MP 747.2) from October 2, 2002, to June 17, 2003. Electrical checks of this rectifier exceeded the 2½ month maximum check frequency required by 49 C.F.R. § 195.573(c).

Respondent presented information in its Response showing that it had taken certain actions to address this Item. Respondent contended that its failure to timely inspect the cathodic protection rectifier at RGV 116 was justified by safety concerns arising from unusually severe avalanche conditions during the winter of 2002-2003. As discussed during the hearing, Respondent could have applied for a waiver of the time limits during the winter months or it could have provided for the remote monitoring of rectifiers. In did neither. In its Closing, Respondent informed PHMSA that it was working to find effective alternatives for monitoring RGV rectifiers. In any case, Respondent should immediately notify the Western Region Director whenever it fears that it will not be able to perform maintenance within required intervals.

Having considered such information, I find, pursuant to 49 C.F.R. § 190.205, that a probable violation of 49 C.F.R. § 195.573(c) has occurred and Respondent is hereby advised to correct such condition. In the event that PHMSA finds a violation of this item in a subsequent inspection, Respondent may be subject to future enforcement action.

In accordance with 49 U.S.C. § 60122 and 49 C.F.R. § 190.223, failure to comply with this Final Order may result in the assessment of administrative civil penalties of not more than \$100,000 per violation per day pursuant to 49 U.S.C. § 60122, or in the imposition of civil judicial penalties and other appropriate relief pursuant to 49 U.S.C. § 60120.

Under 49 C.F.R. § 190.215, Respondent has a right to submit a Petition for Reconsideration of this Final Order. The petition must be received within 20 days of Respondent's receipt of this Final Order and must contain a brief statement of the issues. The terms of the order, including any required corrective action, remain in full effect unless the Associate Administrator, upon request, grants a stay. The terms and conditions of this Final Order are effective on receipt.

*William H. Guter*  
for

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Jeffrey D. Wiese  
Associate Administrator  
for Pipeline Safety

9-24-07  
Date Issued