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**U.S. Pipelines and Logistics**

BP Pipelines (North America) Inc.
28100 Torch Parkway
Warrenville, Illinois 60555

May 20, 2010

Mr. Dennis Hinnah
Deputy Director, Western Region
Pipeline and Hazardous Materials Safety Administration
188 W. Northern Lights Blvd., Suite 520
Anchorage, AK 99503

**Re: Notice of Amendment CPF 5-2010-5009M**

Dear Mr. Hinnah:

This letter is in response to Department of Transportation (DOT) Pipeline and Hazardous Materials (PHMSA's) Notice of Amendment dated April 20, 2010.

On June 22-23, 2009, a representative of the Pipeline and Hazardous Materials Safety Administration (PHMSA) inspected the BP Exploration, Alaska, Inc (BPXA) Endicott Sales Oil Crude Pipeline. Endicott Pipeline is a common carrier pipeline that is owned by separate entities and operated by BPXA.

For ease of response, the code citation and DOT's statements to us have been copied below in italics and are followed by BPXA's response.

1. ***§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.***

**DOT Statement:**

*BPXA's Endicott Procedure NP-4800, "Pig the Endicott Pipeline," for launching and receiving pigs is not adequate because it does not reflect the actual setup of the launcher and receiver. Both the launcher and receiver have a pressure sensing device which must be removed prior to opening the closure and must be installed after closing. the closure, but prior to pressurizing the barrel. The procedures are silent in regards to the pressure sensing devices and the pressure sensing devices are not indicated on the drawings in Appendix A and B of the procedures.*

**BPXA Response:**

*BPXA's Endicott Procedure NP-4800, "Pig the Endicott Pipeline," for launching and receiving pigs has been updated to reflect the actual setup of the launcher and receiver. The launcher set-up and threaded pressure sensing device are referenced in steps 4.3*

*and 4.11 on page 7. The receiver set-up and threaded pressure sensing device are referenced in steps 10.3 and 10.11 on page 11. These pressure sensing devices are indicated on the drawings in Appendix A and B of the procedure.*

**See attachment – BPXA's Endicott Procedure NP-4800, "Pig the Endicott Pipeline".*

BPXA belleves that the practices and actions taken as described in the response herein address the issues identified in the Notice of Amendment.

If you have any questions, please contact me at 630-836-3435 or Glen Pomeroy at 907-564-5921.

Sincerely,

David O. Barnes, P.E.
DOT & Integrity Manager
BP Pipelines (North America) Inc.

cc:
John Eldred, SPU Engineering Authority (acting HSSE & Engineering VP)
Mike Utsler, VP Operations
Don Turner, Pipelines Delivery Advisor
Bill Flanders, DOT PHMSA Alaska
Truman Dickeson, BP Pipelines North America
Glen Pomeroy, BPXA – Pipeline TA

# Pig The Endicott Pipeline

| JOB TITLE & AUTHORITY NAME: | PROCEDURE NUMBER: | REVISION NUMBER / DATE: |
|---|---|---|
| **Endicott O&M Team Lead** | **NP-4800** | **Rev. 6 05/03/10** |
| CUSTODIAN: | ORIGINAL ISSUE DATE: | NEXT REVIEW DATE: |
| **Endicott Facility SOP SPA** | **11/08/06** | **05/03/13** |
| DOCUMENT ADMINISTRATOR: | ISSUING DEPT. | CONTROL TIER: |
| **PSM Analyst** | **Endicott Operations** | **5** |
| **Normal Procedure** | | |

## 1.0 Purpose/Scope

To describe the steps to push a pig through the Endicott pipeline from Endicott to Alyeska Pump Station One while continuing to flow oil through the pipeline. This procedure can be used for any of the various pigs with the exception of an electronic corrosion sensing pig. Modify this procedure to meet the special requirements that may be associated with the electronic corrosion sensing pig.

## 2.0 Acronyms/Definitions

## 3.0 Specific Requirements

### 3.1 Health, Safety, Environmental Concerns

#### 3.1.1 Health Concerns

3.1.1.1 Benzene is an irritant to the skin, eyes, respiratory system and mucous membrane. Benzene is a known carcinogen. Benzene has a TLV of 0.5 ppm for an 8 hour TWA and a TLV of 0.3 ppm for a 12 hour TWA. Benzene concentrations of 0.3 ppm to 10 ppm require a full face respirator with organic cartridges; concentrations above 10 ppm require a supplied air respirator.

3.1.1.2 Hydrogen Sulfide is an irritant to the eyes, mucous membranes and respiratory system. H2S is also a chemical asphyxiant, inhaled gas may result in paralysis, sudden collapse, and death. Personnel working in areas with air concentrations exceeding 10 ppm H2S in worker breathing zones must wear supplied air respirators.

3.1.1.3 Petroleum Crude Oil is a complex combination of hydrocarbons consisting of paraffins, and cyclic aromatic hydrocarbons having carbon numbers mostly greater than C1. Examples of these include Benzene, toluene, xylene, cyclohexane, and phenol. Significant amounts of sulfur and oxygenated compounds may also be present, as well as dissolved natural gas and H2S.

3.1.1.4 Molykote "O" Ring Grease is a mild irritant and may cause gastrointestinal problems if ingested.

### 3.1.2 Safety Concerns

3.1.2.1 Wear the personal protective equipment required for NGL's and methane gas in the MSDS's and the Alaska Safety Handbook.

3.1.2.2 Hand held radios may not provide adequate communication between Endicott control room and Alyeska Pump Station 1. Ensure cell phone and/or truck radio is available.

3.1.2.3 Do not pig if outside temperature is less than -20°F or damage to the launcher could result. (HAZOP OIL-57.1, OIL-13.1, LCIR 97-END-0048)

3.1.2.4 Notify facilities: Oil board operator will notify Alyeska OCC & PS1, Badami, Phone and e-mail Alyeska OCC & PS1, Badami, with time of launch and estimated time of arrival.

### 3.1.3 Environmental Concerns

3.1.3.1 Save crude residue for recycling and crude soaked rags for disposal by environmental tech.

## 3.2 Pre-requisites

- Notify the safety department to ensure the meters for detecting N.O.R.M. and benzene are available.
- Must wear respirator when pig receiver is open.
- Must use two people to operate overhead crane in 303 to prevent damage to electric cable.
- Determine the type and size of pig(s) to be used.
- The 3-phase system is in service. The rate may be reduced during the pigging process.
- DOT qualified person available to grease valves when pigs are launched and received.
- Pressure test both the launcher and receiver.
- Stage all required equipment at modules 303 and 409 prior to the day of pigging.
- Ensure Alyeska OCC & PS1, Badami, are aware of the pigging.
- Ambient air temperature is above -20°F.

- Verify the operation of all pig signals.
- Limit the number of observers during pigging. (OIL-59.1)
- Cell phone and/or truck radio available for communication with control room.
- Ensure Vac truck driver has a manifest for transferring fluids from PS1.
- All hand tools used to load and unload pigs should be non-sparking.
- Prepare the receiver before pig is launched.
- Personnel to show up at Pump 1 and be on location 5 hours prior to pig arrival.

### 3.3 Equipment, Materials, Tools

#### 3.3.1 Equipment

None

#### 3.3.2 Materials

None

#### 3.3.3 Tools

None

## 4.0 Key Responsibilities

None

## Procedure Begins on Next Page

## 5.0 Procedure/Process

| Step | Action | Signoff |
|---|---|---|
| 1. Pressure test launcher | 1.1 Give a copy of step 3 to the person responsible for staging the equipment and tools at the launcher and receiver. | |
| | 1.2 Close inlet and outlet valves of the launcher. | |
| | 1.3 Pressurize with $N_2$ to 40psi. | |
| | 1.4 Shut in $N_2$. | |
| | 1.5 Monitor for a pressure drop. | |
| | 1.6 Repair as required. | |

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|  | *Note: Close the Booster pump and shipping pump seal drains, to prevent a mess when draining launcher into sump.* |

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| 2. Safe-out launcher LB-E3-1001 (See Appendix A) | 2.1 Close Booster pump and shipping pump seal drains. | |
| | 2.2 Verify closed, disable & tag launcher outlet valve HV-1391. | |
| | 2.3 Verify closed, disable & tag launcher inlet valve HV-1392. | |
| | 2.4 Verify closed & tag launcher methanol inlet valve. | |
| | 2.5 Verify closed & tag launcher drive gas inlet valve. | |

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| | 2.6 Open launcher drain valve. | |
| | 2.7 Open bleed valve on top of launcher and de-pressure to atmospheric pressure. | |
| | 2.8 Close launcher drain valve. | |

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| 3. Stage materials | 3.1 Stage the following at both the sales oil pig launcher at module 303 and the pig receiver at PS 1 skid 409. | |
| | • Sections of hose for purging and draining | |
| | • O-ring lubricant for launcher door seals | |
| | • O-ring Cat ID# 76959 | |
| | • Valve sealant and injection device | |
| | • Pigs | |
| | • Rags, absorbent pads and oily waste bags | |
| | • Rubber gloves and paper coveralls | |
| | • Elbow length rubber gloves | |
| | • Cotton gloves | |
| | • Goggles | |
| | • Face shield | |
| | • Pig hook | |
| | • Pig ram | |
| | • Pry bar | |
| | • Tools (assorted) | |
| | • Spray cleaner | |
| | • Nitrogen bottles with regulator and hoses(Receiver only) | |
| | • Surface liners for vehicles and hose connections | |

| Attention!   | CAUTION: To prevent damage to electric cable through double doors in 303 whenever overhead crane is used for pigging, use two people. (Operations Excellence #2001-05) |
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| 4. Load pig into launcher LB-E3-1001 | 4.1 Ensure two people are available to operate overhead crane. | |
| | 4.2 Don respirator prior to opening pig receiver. | |
| | 4.3 Verify Zero energy by opening the threaded pressure sensing device attached to the Launcher door. | |
| | 4.4 Open launcher slowly over a catch pan lined with absorbent. | |
| | 4.5 Trip then reset manual pig sig XI-1391 on the launcher to test it. | |
| | • Reset pig sig XI-1392 downstream of HV-1391. | |
| | 4.6 Insert pig and push it to the end of the launcher. | |
| | 4.7 Clean launcher seals. | |
| | 4.8 Replace the o-ring as required | |
| | 4.9 Apply sealant to the sealing surfaces. | |
| | 4.10 Replace launcher cover. | |
| | 4.11 Close the threaded pressure sensing device attached to the Launcher door. | |
| | 4.12 Close vent valve. | |
| | 4.13 Pressurize with nitrogen to test seal and inert launcher. | |
| | • Depressurize to atmosphere. | |

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| 5. Launch pig | 5.1 Notify oil board operator of launch. | |
| | 5.2 Oil board operator will notify Alyeska OCC & PS1, Badami, of the launch | |
| | • Record contacts in log book & e-mail all parties per distribution list. | |
| | 5.3 Equalize launcher with transit pipeline using $N_2$ pressure. | |
| | 5.4 Open launcher outlet valve HV-1391. | |
| | 5.5 Open launcher inlet valve HV-1392. | |
| | 5.6 Close launcher bypass valve HV-1393 | |

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|  | *Note: Pig signals XI-1391 and XI-1392 will alert the operator that the pig has been launched. Continue the procedure once the pig has been launched.* |

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| 6. Grease valves after launch | 6.1 Grease pig launcher bypass valve HV-1393 while stroking. | |
| | • Leave valve in open position. | |
| | 6.2 Grease launcher inlet valve HV-1392 while stroking. | |
| | • Leave valve in closed position. | |
| | 6.3 Grease launcher outlet valve HV-1391 while stroking. | |
| | • Leave valve in closed position. | |

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|  | *Note: To prepare for another launch, refer to safe-out the launcher in task #2.* |

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| 7. Return pig launcher to stand-by | 7.1 Verify launcher outlet valve HV-1391 is closed and disabled. | |
| | 7.2 Verify launcher oil inlet valve HV-1392 is closed and disabled. | |
| | 7.3 Verify launcher methanol inlet valve is closed. | |
| | 7.4 Verify launcher drive gas inlet valve is closed. | |
| | 7.5 Open launcher drain valve. | |
| | 7.6 Apply Nitrogen to launcher to drain fluids to sump. | |
| | 7.7 Stop Nitrogen when launcher is empty. | |
| | 7.8 Close launcher drain valve. | |
| | 7.9 Open Booster & Shipping pump seal drains. | |
|  | *Note: Save crude residue for recycling & crude soaked rags for disposal by environmental tech.* | |
| **Attention!**   | CAUTION: After pig launcher operations are complete, the launcher barrel is to be left empty of liquids to prevent thermal expansion and over pressurization. Hazop. Oil-57.2 | |
| | 7.10 Verify launcher barrel is empty of liquids. | |
|  | *Note: DOT OQ task: Endicott personnel to arrive at skid 409 2 hours prior to receiving the pig.* | |

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| 8. Pressure test receiver & prepare to receive pig at skid 409. (See Appendix B) | 8.1 Ensure cell phone and/or truck radio available for communication with control room. | |
| | 8.2 Verify all inlet and outlet valves are closed including all drain valves. | |
| | 8.3 Pressurize receiver with $N_2$ | |

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| | 8.4 Shut in $N_2$. | |
| | 8.5 Monitor for a pressure drop. | |
| | 8.6 Replace o-ring as required | |
| | 8.7 Open bleed valve on top of receiver, de-pressure to atmospheric pressure and close bleed valve. | |
| | 8.8 Reset pig signals at skid 409. | |
| | 8.9 Slowly open receiver inlet valve to pressurize and monitor receiver for leaks. | |
| | 8.10 Open two 8" receiver outlet valves. | |
| | 8.11 Slowly close 16" main line block valve to PS 1 to divert oil through the receiver. | |
| | 8.12 Notify Endicott oil board operator when pig is received. | |
| | 8.13 Oil board operator will notify Alyeska OCC & PS1, Badami, of the pig being received. | |
| | • Record contacts in log book & e-mail all parties per distribution list. | |
| 9. Grease valves & safe-out pig receiver | 9.1 After pig trips mechanical pig signal XI-1394, grease the 16" main line block valve to PS 1 while cycling and leave in open position. | |
| | 9.2 Grease while cycling, then close and tag the 16" receiver inlet block valve. | |
| | 9.3 Grease while cycling, then close and tag the two 8" receiver outlet block valves. | |

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| **Attention!**   | CAUTION: Check wind direction and verify there are no ignition sources downwind. |

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| | 9.4 De-pressurize receiver to the tiger tank. | |
| | 9.5 Pressurize receiver with nitrogen to 100 psi. | |
| | 9.6 De-pressurize and drain receiver to the tiger tank. | |
| | 9.7 Repeat pressurize with $N_2$ and de-pressurize until empty. | |
| | 9.8 Close & tag receiver drain valves. | |
| | 9.9 Open & tag receiver atmospheric vent to de-pressure. | |

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| 10. Open receiver and remove pig | 10.1 Verify receiver has been safed-out according to above tasks. | |
| | 10.2 Don respirator prior to opening pig receiver. | |
| | 10.3 Verify Zero energy by opening the threaded pressure sensing device attached to the Receiver door. | |
| | 10.4 Open receiver over a catch pan lined with absorbent and remove pig. | |
| | 10.5 Obtain a sample of the material in the receiver for analysis by the lab. | |
| | 10.6 Check witch's hat in receiver outlet to see if there is debris which needs to be removed. | |
| | 10.7 Clean receiver seals. | |
| | 10.8 Replace o-rings as required | |
| | 10.9 Apply sealant to sealing surfaces. | |
| | 10.10 Replace receiver cover. | |
| | 10.11 Close the threaded pressure sensing device attached to the Receiver door. | |
| | 10.12 Close vent and drain valves. | |

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| | 10.13 Pressurize with nitrogen to test seal and inert receiver. | |
| | 10.14 De-pressurize to atmosphere then close vent valve. | |
| | 10.15 Consult with environmental tech. for disposal of oily absorbent and sludge. | |
|  | *Note: After operations involving the pig receiver are complete, the receiver barrel is to be left empty of liquids to prevent thermal expansion and over pressurization. (Hazop Oil-60.1) After operations are complete, return crane to indoors while being careful and protecting cable from damage. (Operations Excellence #2001-05) Use Alyeska's custody transfer ticket for production accounting for the day of the pigging since oil was removed downstream of Endicott's metering skid.* | |

**END OF PROCEDURE**

| | |
|---|---|
| Technician Signature | Date of Completion |
| Supervisor Signature | Date of Completion |

## 6.0 Key Documents/Tools/References

- BPXA DOT Operations, Maintenance and Emergency Response (OMER) Manual
- Endicott DOT Operations, Maintenance and Emergency Response (OMER) Manual
- Alaska Safety Handbook
- P&IDs : PI-E3-EP-1104 and PI-E9-EP-1053

## 7.0 Comments

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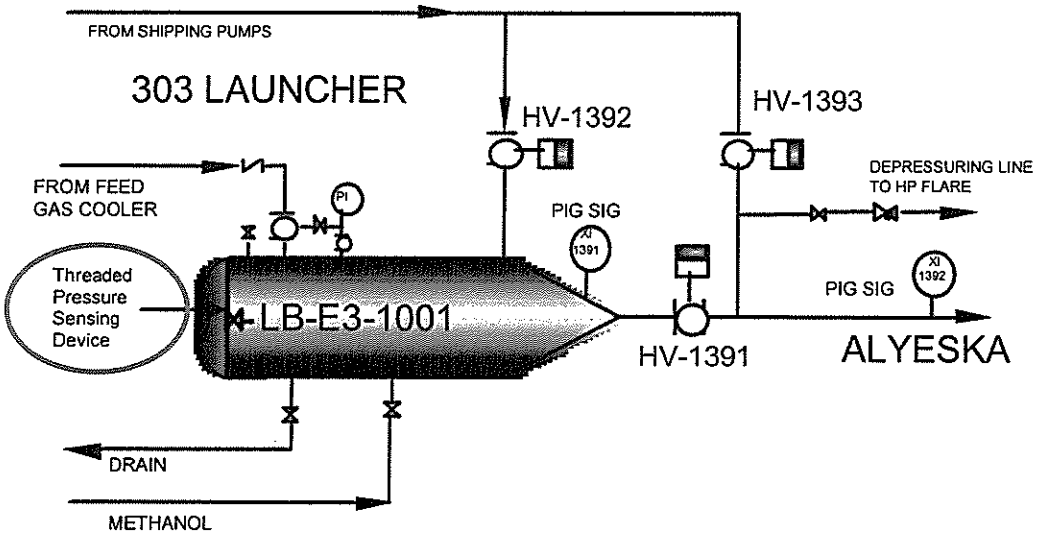
|  | *Note: File all paperwork in Document Control Central File 25.04.06.* |

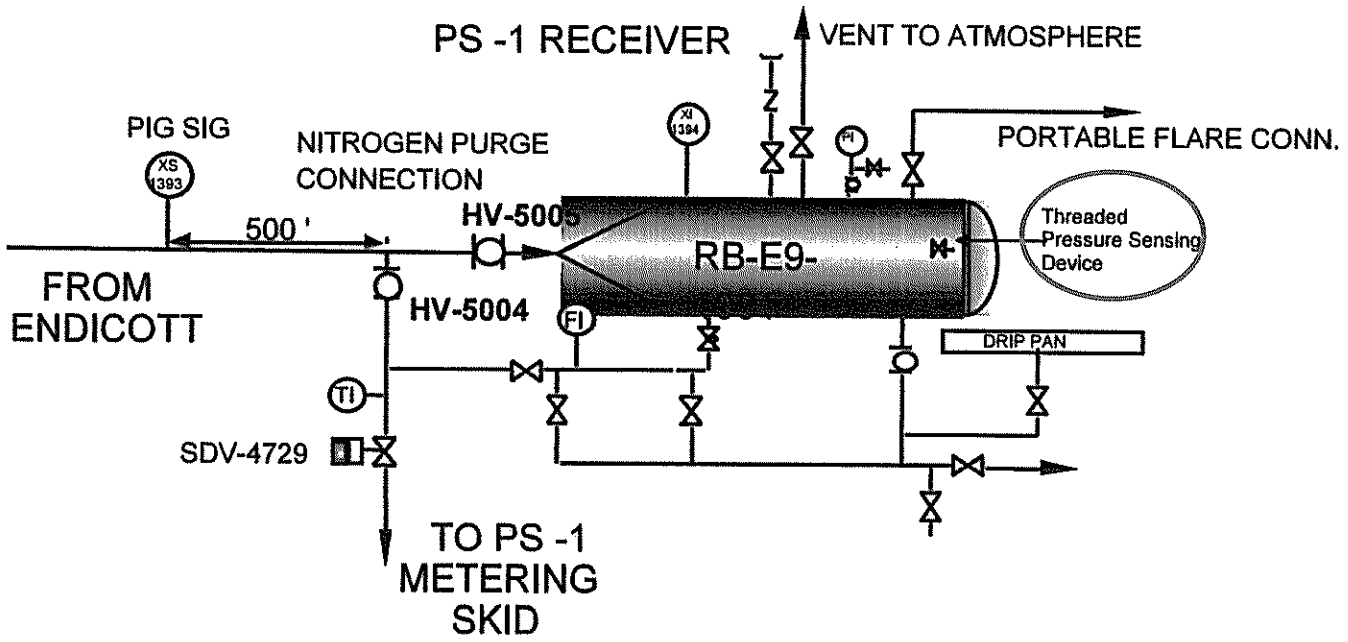
## Revision/Review Log

| Revision Date | Authority | Custodian | Revision Details |
|---|---|---|---|
| 11/08/06 | Jason Caldwell | | Rev 1 |
| 12/02/07 | | | RWD, template |
| 11/13/08 | Jason Caldwell | Brendon Hopkins | FS2, COTU out of pipeline |
| 04/27/09 | Dan Harris | George Fenderson | Added bullets to Pre-requisites, updated accountabilities & dates (Ingersoll) AMOC-END-0036 |
| 9/01/09 | Jason Caldwell | Matt Worthington | Minor revisions |
| 5/3/10 | Dan Harris | Brendon Hopkins | Added steps Re: Threaded pressure sensing device per PHMSA recommendations |

## Appendix A:


FROM SHIPPING PUMPS
303 LAUNCHER
HV-1392
HV-1393
DEPRESSURING LINE TO HP FLARE
FROM FEED GAS COOLER
PI
PIG SIG
XI 1391
XI 1392
PIG SIG
Threaded Pressure Sensing Device
LB-E3-1001
HV-1391
ALYESKA
DRAIN
METHANOL

## Appendix B:


PS -1 RECEIVER
VENT TO ATMOSPHERE
PIG SIG
XS 1393
NITROGEN PURGE CONNECTION
XI 1394
PI
PORTABLE FLARE CONN.
500 '
HV-5005
RB-E9-
Threaded Pressure Sensing Device
FROM ENDICOTT
HV-5004
FI
DRIP PAN
TI
SDV-4729
TO PS -1 METERING SKID