



Hilcorp Alaska, LLC

3800 Centerpoint Drive  
Suite 1400  
Anchorage, AK 99503

Phone: 907/777-8300  
Fax: 907/777.-8301

**VIA EMAIL**

May 4, 2017

Chris Hoidal  
Director, Western Region  
U.S. Department of Transportation  
Pipeline and Hazardous Materials Safety Administration  
12300 W. Dakota Avenue, Suite 110  
Lakewood, Colorado 80228

Re: CPF 5-2017-5004M

Attached please find Hilcorp Alaska LLC's amended procedure *P-195.420 Valve Maintenance* in response to NOA CPF 5-2017-5004M regarding the Endicott Sales Oil Pipeline in Prudhoe Bay, Alaska.

Please feel free to contact me at (907) 777-8430 or [emckay@hilcorp.com](mailto:emckay@hilcorp.com) if further information is needed.

Sincerely,

HILCORP ALASKA, LLC

**Erin McKay**

*Regulatory Compliance Manager  
Alaska Integrity Group*

Enclosures

cc: Dustin Hubbard (PHMSA)  
Michael Chard (PHMSA)  
John Barnes, Hilcorp Sr. Asset Team Leader,  
North Slope Asset Team  
Bo York, Hilcorp Operations Manager,  
North Slope Asset Team



**P-195.420: Valve Maintenance**

<b>Description</b>	This procedure gives steps to maintain DOT valves to verify they are in good working condition.
<b>Regulatory Applicability</b>	<input checked="" type="checkbox"/> Regulated Transmission Pipelines <input checked="" type="checkbox"/> Regulated Gathering Pipelines – Non-rural <input type="checkbox"/> Regulated Gathering Pipelines – Rural <input checked="" type="checkbox"/> Regulated Low Stress Pipelines in Rural Areas
<b>Frequency</b>	Twice each calendar year at intervals not to exceed 7½ months for Mainline valves
<b>Reference</b>	49 CFR 195.420 Valve Maintenance Valve Manufacturer’s Installation, Operation and Maintenance Instructions (IOM)
<b>Forms</b>	F-195.420 Mainline Valve Inspection
<b>Related Specifications</b>	None
<b>OQ Covered Task List</b>	<p>716OP – Inspect, Maintain, and Operate Valves or 720OP – Inspect, Maintain, and Operate Valves (Does not include stem packing)</p> <p>(In order to perform the tasks listed above, personnel must be qualified in accordance with the company’s Operator Qualification program or directly supervised by a qualified individual.)</p>

<b>Authority:</b> Integrity Manager	<b>Custodian:</b> Regulatory Compliance Manager
<b>Issuing Group:</b> Hilcorp Alaska Integrity Group	<b>Next Review Date:</b> 03/03/2018



## PROCEDURE STEPS

### General Requirements

In accordance with 195.420(a), each valve that is necessary for the safe operation of the pipeline shall be maintained in good working order at all times utilizing the manufacturer's Installation, Operation and Maintenance Instructions (IOM).

In accordance with 195.420(b), each mainline isolation valve shall be inspected and maintained twice each calendar year, not exceeding 7½ months using the procedure below to determine that they are functioning properly. All regulated valves shall be protected from unauthorized operation and vandalism.

*Note: Field Operations, Pipeline Maintenance Department (or designated individual) and the pipeline specific operations manual (PSOM), maintain a list of mainline isolation valves and regulated valves necessary for safe operations of the pipeline.*

### Maintenance

Valve maintenance shall be ongoing activity with major repairs conducted as operation and line scheduling permits. Routine maintenance also shall be performed during the required valve inspection, or more frequently as conditions dictate to ensure valves are in good working order at all times. The table below describes the inspection and maintenance requirements of valves used by Hilcorp on its pipeline systems by valve brand and type.



Valve Brand	Valve Type	Inspection	Maintenance
AOP	D Series Trunnion Ball Valve, 2"FP-6"FP & 6"FP-12"FP	<ul style="list-style-type: none"><li>• Inspect for damages, dents, scoring, wear or corrosion</li><li>• Check the metallic parts for damage along the sealing surfaces and on moving surfaces</li><li>• Make sure the sealing rings and gaskets are not slashed, extruded and/or damaged</li><li>• Check for scratches, plate defects, the surfaces of the bearings, the thrust washers, the gland brushing, the ball and the seat components</li><li>• Inspect all spares for damage during storage or transportation</li></ul>	<ul style="list-style-type: none"><li>• Drain valve whenever the valve does not close, before the arrival of the cold season, after washing the line and after hydraulic testing.<ul style="list-style-type: none"><li>- To drain, close the valve completely then slowly open the drain fitting until the pressure in the body cavity has been discharged.</li></ul></li><li>• Lubricate valve stem</li><li>• Lubricate gears using the lube fitting located on the side of the gear operator</li><li>• Remove any foreign and corrosive products within the body</li><li>• Clean all metallic parts, the grease fittings, grease channels, sealing rings and the gasket</li></ul>
AOP	FB Series Floating Ball Valve	<ul style="list-style-type: none"><li>• Check valve for proper operation</li><li>• Inspect for damages, wear or corrosion</li><li>• Verify valves are left in proper/original position</li></ul>	<ul style="list-style-type: none"><li>• Periodically lubricate stem journal</li><li>• Lubricate gears using lube fitting located on the side of the gear operator</li><li>• Clean for damages, wear or corrosion</li></ul>



Valve Brand	Valve Type	Inspection	Maintenance
Cameron	Trunnion Mounted TK Ball Valve	<ul style="list-style-type: none"><li>Inspect housing for damage and wear</li><li>Check if the seat is leaking</li><li>Check if the stem is leaking</li><li>Inspect seat injection fittings, stem injection fitting and body / bleed fitting</li><li>Check grease gun / pump is in working order</li></ul>	<ul style="list-style-type: none"><li>Lubricate gears using appropriate lube</li><li>Lubricate stem seals</li></ul> <p><b>4" and smaller</b></p> <ul style="list-style-type: none"><li>Open the valve to fully open position</li><li>Inject grease to the single giant button-head located on valve body.</li><li>Stroke valve several times to distribute the grease to the surface of the ball</li><li>Return to desired position</li></ul> <p><b>6" valve and larger</b></p> <ul style="list-style-type: none"><li>Close the valve fully and inject each of the 4-giant button-head grease fittings with two ounces of lubricant.</li><li>Open the valve to the fully open position and inject each of the 4-giant button-heads as described above.</li><li>Cycle valve to close position to distribute the grease to the surface of the ball.</li><li>Clean grease fittings</li><li>Replace fitting caps</li><li>Place the valve in the position desired, either fully open or closed.</li><li>Verify valves are left in proper/original position</li></ul>



Valve Brand	Valve Type	Inspection	Maintenance
Cameron Type 31	Fully Welded Body Ball Valve	<ul style="list-style-type: none"><li>Inspect housing for damage and wear</li><li>Inspect weather gear and replace if damaged</li><li>Check if the seat is leaking</li><li>Check if the stem is leaking</li><li>Inspect seat injection fittings, stem injection fitting and body / bleed fitting</li><li>Check grease gun / pump is in working order and loaded with appropriate product</li></ul>	<ul style="list-style-type: none"><li>Lubricate gears using appropriate lube</li><li>Follow double block-and-bleed procedure</li><li>Routinely clean seat valve</li><li>Inject standard valve flush</li><li>Clean grease fittings</li><li>Replace fitting caps</li></ul>
Crane	Gate Valve	<ul style="list-style-type: none"><li>Check valves are in good working condition</li><li>Inspect for damages, dents, scoring, wear or corrosion</li><li>Check for leaks at gland</li></ul>	<ul style="list-style-type: none"><li>Routinely check for leaks at glands</li><li>Pack stem valve</li><li>Tighten gland nuts if leak is detected without over tightening</li><li>If leakage still occurs, add additional or new packing</li><li>Occasionally operate valves that remain open or closed for long periods</li></ul>
Grove	G4N Gate Valve	<ul style="list-style-type: none"><li>Check valves are in good working condition</li><li>Inspect for damages, dents, scoring, wear or corrosion</li><li>Check for leaks at gland</li></ul>	<ul style="list-style-type: none"><li>Follow block-and-bleed or double block-and-bleed procedure</li><li>The disassembly of the yoke and bonnet can be achieved after line depressurization without removing the gate from the seats. Then the stem gaskets and the body bonnet O-ring can be replaced</li><li>Using a wedge tool, the gate can be disengaged from the seats and all these parts can be disassembled, checked and replaced, if necessary.</li></ul>



Valve Brand	Valve Type	Inspection	Maintenance
Grove	B8 Fully Welded Body Ball Valves	<ul style="list-style-type: none"><li>• Check valves are in good working condition</li><li>• Inspect for damages, dents, scoring, wear or corrosion</li><li>• Check for leaks at gland, stem and seats</li></ul>	<ul style="list-style-type: none"><li>• Use secondary sealant injection fittings to provide emergency seat sealing.</li><li>• Replacement of the stem, gland plate and stem seals can be achieved with the valve installed in the line without pressure.</li><li>• Flush through the relief valve port and drain valve connections when there is no pressure in the line.</li></ul>
Jamesbury	Series 700 & 900 Ball Valves	<ul style="list-style-type: none"><li>• Check valves are in good working condition</li><li>• Inspect for damages, dents, scoring, wear or corrosion</li><li>• Check for leaks at stem and seats</li></ul>	<ul style="list-style-type: none"><li>• Tighten the bonnet stud nuts periodically until snug than tighten an addition 1/4 turn.</li></ul>
Nordstrom	Plug Valve	<ul style="list-style-type: none"><li>• Check valves are in good working condition</li><li>• Inspect for damages, dents, scoring, wear or corrosion</li><li>• Check for leaks at stem and seats</li></ul>	<ul style="list-style-type: none"><li>• Follow a program of sealant injections into the valve to provide a sealant film between tapered plug and body.</li><li>• Valve can be maintained through manual, hand gun or hypregun injections.</li></ul>
Orbit	Rising Stem Ball Valve	<ul style="list-style-type: none"><li>• Check valves are in good working condition</li><li>• Inspect for damages, dents, scoring, wear or corrosion</li><li>• Check for leaks at stem and seats</li></ul>	<ul style="list-style-type: none"><li>• Lubricated based on users past experience with equipment.</li><li>• Lubrication should occur at minimum of once a year, with the recommendations of: every time the valve is serviced for stem leak, quarterly if valve is operated infrequently, every 1000 cycles if valve is operated more than 10 times a day, or every 500 cycles if valve is used in corrosive or other severe services and operated more than 10 times a day.</li></ul>



Valve Brand	Valve Type	Inspection	Maintenance
PBV-USA	Ball Valve	<ul style="list-style-type: none"><li>• Check valves are in good working condition</li><li>• Inspect for damages, dents, scoring, wear or corrosion</li><li>• Check for leaks at stem and seats</li><li>• Check studs and nuts of the Body-Closure flanges and retighten if necessary</li></ul>	<ul style="list-style-type: none"><li>• Follow double block-and-bleed procedure.</li><li>• Sealant may be injected to reduce leakage before replacing seals.</li><li>• Replace upper stem seals if necessary</li><li>• Emergency shut-off may be obtained with a sealant injected through grease fittings</li></ul>
Serck Audco	Double Isolation Plug Valve; Twin Isolation Plug Valve	<ul style="list-style-type: none"><li>• Check valves are in good working condition</li><li>• Inspect for damages, dents, scoring, wear or corrosion</li><li>• Check for leaks at stem, gear unit, cover, sealant body, valve body and seats</li><li>• Check if the gear operator input shaft gets bend or broken</li></ul>	<ul style="list-style-type: none"><li>• Inject valve sealant (required occasionally)</li><li>• Inject stem packing compound (emergency feature)</li><li>• Adjust the plug loading screw (unlikely to ever be required)</li><li>• Rotate the plug through 180 degrees (unlikely to ever be required)</li><li>• If any bolts/studs/nuts require tightening, the values must be obtained from SAV</li></ul>
Serck Audco	Standard Type Plug Valve	<ul style="list-style-type: none"><li>• Check valves are in good working condition</li><li>• Inspect for damages, dents, scoring, wear or corrosion</li><li>• Check for leaks at stem, gear unit, cover, sealant body, valve body and seats</li><li>• Check if the gear operator input shaft gets bend or broken</li></ul>	<ul style="list-style-type: none"><li>• Inject valve sealant (required occasionally)</li><li>• Tighten the gland nuts slightly (required very occasionally)</li></ul>
WKM	DynaSeal 370D4 Ball Valve	<ul style="list-style-type: none"><li>• Check valves are in good working condition</li><li>• Inspect for damages, dents, scoring, wear or corrosion</li><li>• Check for leaks at stem and seats</li></ul>	<ul style="list-style-type: none"><li>• Routinely drain valve &amp; release body pressure, especially before exposure to freezing temperatures</li><li>• Also routinely clean the valve seat pockets</li><li>• Lubricant can be used to ensure optimum performance</li><li>• If valve seats or stem seal fail, inject a sufficient amount of valve sealant into grease fitting</li></ul>



## Inspection of Valves

1. Contact Controller prior to manually operating a remotely operated valve or before entering a normally non-manned facility.
2. Verify that the correct valve is being inspected by the number and location.
3. Verify the accessibility of the valve. Indicate on form F-195.420, or other inspection form, if the valve is accessible. If not, document in the follow-up section of the form that there is an issue with accessibility. Ensure area is free of hazard-producing vegetation.
4. Verify that the valve and its operating device are operable. If not, document in the follow-up section of the form that there is an issue with operability. Lubricate valve and seal if required.
  - a. Depressurize valve body.
  - b. Check for leak-by and leak-through sealing of valve.
  - c. Identify the appropriate injection products per manufacturer's/company specifications.
  - d. Operate injection equipment with appropriate products.
  - e. Inject appropriate products into seats per manufacturer or industry recommendations.
5. Verify that the valve is secure. If not, document in the follow-up section of the form that there is an issue with valve security.
  - a. Ensure padlock is easily operable.
  - b. Ensure identification and emergency phone numbers are posted.
6. Inspect the valve
  - a. For leaks, damage and corrosion.
  - b. Check all external moving parts of valves and operators for condition, lubrication and freedom of movement
  - c. Check packing glands on valve stems for leakage and adjust or add packing if required.
  - d. If there are issues, create a work order and list in the follow-up section of the form for tracking.
7. Verify that valve is adequately supported. If not, document in the follow-up section of the form that there is an issue with valve supports.
8. Operate valve (turn the handle to ensure the stem moves approximately 1 inch and return it back to its original position) and document on Form F-195.420, or other inspection form. If valve is not operable, document on F-195.420, or other inspection form, in the follow-up section and issue a work order. For MOV function testing, contact the Controller to see if they can cycle the valve for you while on location. If not, work around their schedule to see when it can be cycled and documented properly.) If bypass piping and valves are present, open them before closing a normally open valve.
9. Adjust operator/actuator as necessary per manufacturer's procedure and document on F-195.420, or other inspection form, that adjust was made.
10. Have Controller send a signal to operate remote valves. Document on F-195.420, or other inspection form, that the signal was received.
11. Verify the position the valve was left in on F-195.420, or other inspection form.
12. Ensure valve is locked and secured.



13. If the valve did not function properly, contact the supervisor and the coordinator to schedule maintenance on the valve.
14. If valve is disassembled, internally inspect:
  - a. Disassemble actuator
  - b. Inspect worm gear
  - c. Set limit switch
  - d. Set torque switch
  - e. Disassemble soft clutches and inspect.
  - f. Assemble gear section



### REVIEW AND REVISION LOG

This O&M Procedure shall be reviewed at intervals not exceeding 15 months, but at least once each calendar year, and appropriate changes shall be made as necessary to ensure that the manual is current, complete, and effective.

Revision No.	Revision Date	Annual Review Y/N	Approval	Revision Description	MOC No.
01	Dec 2013	Y	Erin McKay	Annual Review of manual and reformat plan into new format.	
02	Oct 2014	Y	Erin McKay	Annual Review of Manual & Procedures.	
03	May 2015	Y	Ben Wasson	Annual Review.	
04	October 2015	N	Ben Wasson	Revised procedure to address specific requirements of 195.420(a) versus 195.420(b) valves. Added valve-specific Installation, Operation and Maintenance Instructions (IOM) information. Minor additional editorial revisions.	
05	07/22/2016	Y	Erin McKay	Reformat Headers and Footers Reformat LOC form to include Rev. #, Annual Review, & MOC #, updated OQ Task numbers.	
06	3/3/2017	Y	Erin McKay	Added specific valve maintenance instructions. Updated OQ requirements.	