

Operations and Maintenance Procedures

SCUD Procedure # MAINT011	Page 1 of 4
O&M Section # 10.1	SCUD Task # 330
Section: Maintenance	Revision Date: 09/06/16

Above Ground Valve – Corrective Maintenance

SCOPE AND PURPOSE

This procedure is to ensure when personnel repair, refurbish, replace valves, other than service riser valves upstream of customer meters, that these efforts are performed in a safe manner and according to valve manufacturer recommendations. It describes practices required to comply with §192.747 (b).

RESPONSIBILITY

The System Maintenance or Measurement Supervisor, or other designee, is responsible to ensure when performing repair, refurbishment, or replacement of valves, that it is performed as described in this procedure.

PERSONNEL SAFETY (Where Applicable)

Every reasonable precaution shall be taken to protect employees and the general public.

EQUIPMENT AND MATERIALS

System maps and records
Valve actuation/operation tools, as necessary
Valve lubrication tool/gun, as necessary
Valve flush/lubricant, as necessary
Flange separating tool, as necessary
Routine hand tools
Other equipment and materials, as needed

OPERATOR QUALIFICATION

This activity is a covered task under the Operator Qualification Plan and may only be performed by or directed and observed by an individual who is currently qualified to perform this task. Refer to the OQ Plan for specific qualification requirements.

INSTRUCTIONS

Maintenance and Operation of Equipment

All equipment shall be operated and maintained in accordance with the manufacturers' instructions.

Maintenance Steps

- a. Polyethylene Ball Valve Refurbishment/ Repair
 - Polyethylene ball valves are not typically manufactured with lubrication ports and these valves utilize internal Teflon-type seals to achieve positive shut off.
 - Excessive torsional loading can damage valve end fusions and excessive torque can damage internal valve parts. Polyethylene ball valves that cannot be operated or cannot be shutoff to a gas tight position should be replaced.
- b. Steel Ball/Plug Valve Refurbishment/Repair
 - Steel ball valves exhibiting external corrosion, and/or outside force damage, may cause valve leakage that should be promptly investigated.
 - Partial valve operation should first be performed; however, any valve that will not operate should not be subjected to forced operation using a "cheater" since this practice can cause permanent valve damage and potential hazardous leakage.

Operations and Maintenance Procedures

SCUD Procedure # MAINT011	Page 2 of 4
O&M Section # 10.1	SCUD Task # 330
Section: Maintenance	Revision Date: 09/06/16

Above Ground Valve – Corrective Maintenance

- Internal icing, foreign material, and corrosion can cause a steel ball or plug valve to be difficult to operate.
 - Some steel ball valves are manufactured with lubrication ports, while most steel plug valves are manufactured with lubrication ports. If lubrication ports are available, replace any damaged lubrication ports before proceeding. Caution should be taken when replacing lubrication ports that are under gas pressure.
 - A valve lubrication tool/gun equipped with a pressure gauge can be used as a troubleshooting tool when operated according to manufacturer recommendations.
 - Attempt to lubricate and partially operate the valve. If the valve will not accept lubricant, valve flush can be used with the lubrication tool.
 - Caution should be taken when injecting these materials as excessive flush/lubricant may travel downstream. Only enough flush should be used to displace old valve lubricant. Follow the valve flush manufacturer's recommendations for "soak" time.
 - After "soak" time, attempt to partially operate the valve. If the valve appears to remain seized, lubricate the valve and again attempt partial operation. Use only enough lubricant to displace the valve flush. If partial operation is achievable, attempt full open/close operation as long as a gas service outage will not result.
 - If gland seals are present, ensure that gland seals are leak tight.
 - A plug valve that is not under gas pressure usually can be disassembled in place and repaired prior to final lubrication.
- c. Steel Ball/Plug Valve Replacement – Flanged
- Gas pressure should be reduced or eliminated prior to removal and replacement of a valve.
 - Piping support may be required after excavation of the valve.
 - Flanged valves should be removed by loosening the flange bolts leaving one or two bolts in place until just prior to complete valve removal.
 - Ensure that new bolts, washers, and nuts of the proper rating are available for replacement of those that may be damaged or unserviceable. Replacement flange gaskets of the proper material and rating will also be required.
 - A flange separating tool may be required in order to remove and replace the valve and associated gaskets.
 - Install the new flanged valve, new gaskets, and bolts, washers, and nuts. Tighten all bolts in a sequential fashion to avoid flange misalignment and leakage. Valve manufacturer torque specifications may be required for bolt tightening.
 - Leak test the new flange assemblies using an acceptable liquid leak detection solution at system operating pressure. Retighten flanges, as necessary, until no leaks are present.
- d. Steel Ball/Plug Valve Replacement – Threaded
- Threaded valves should never be installed on a pipeline that is to be buried.
 - Gas pressure should be reduced or eliminated prior to removal and replacement of a valve.
 - Piping support may be required before and after valve removal.
 - Threaded valves require the use of pipe wrenches of sufficient size to facilitate removal and replacement.
 - Apply a sufficient amount of thread sealant, thread tape, or a combination of these only to male threaded pipe ends and never to female threads inside the valve body.
 - Tighten the piping and valve threads together only enough to prevent gas leakage.

Operations and Maintenance Procedures

SCUD Procedure # MAINT011	Page 3 of 4
O&M Section # 10.1	SCUD Task # 330
Section: Maintenance	Revision Date: 09/06/16

Above Ground Valve – Corrective Maintenance

- Leak test the new threaded assemblies using an acceptable liquid leak detection solution at system operating pressure. Retighten, as necessary, until no leaks are present.
- e. Steel Ball/Plug Valve Replacement – Welded
- Gas pressure should be reduced or eliminated prior to removal and replacement of a valve.
 - Piping support may be required after excavation of the valve.
 - After acceptance of the welds and appropriate cooling time, leak test the new threaded assemblies using an acceptable liquid leak detection solution at system operating pressure.

REPORTING/NOTIFICATION

Complete documentation in accordance with Operation and Maintenance Manual.

ABNORMAL OPERATING CONDITIONS

AOC Main Category (Examples of Specific AOCs)	Reactions to AOC, as appropriate	
Unplanned escape of product from a pipeline <ul style="list-style-type: none"> Blowing/Escaping gas/Grade I leak 	<ul style="list-style-type: none"> ➤ Protect life & Property ➤ Prevent accidental ignition ➤ Notify appropriate personnel ➤ Notify Fire/Emergency Responders ➤ Initiate Emergency Plan 	<ul style="list-style-type: none"> ➤ Locate source/cause of AOC ➤ Use appropriate PPE ➤ Stop gas flow ➤ Make repairs/eliminate AOC
Fire or Explosion <ul style="list-style-type: none"> Fire on a pipeline Explosion 	<ul style="list-style-type: none"> ➤ Protect life & Property ➤ Prevent accidental ignition ➤ Notify appropriate personnel ➤ Notify Fire/Emergency Responders ➤ Initiate Emergency Plan 	<ul style="list-style-type: none"> ➤ Locate source/cause of AOC ➤ Use appropriate PPE ➤ Stop gas flow ➤ Make repairs/eliminate AOC
Unplanned Flow Rate Deviation <ul style="list-style-type: none"> No Flow Unplanned Decrease in Flow Unplanned Increase in Flow 	<ul style="list-style-type: none"> ➤ Protect life & property ➤ Notify appropriate personnel ➤ Initiate Emergency Plan as Needed 	<ul style="list-style-type: none"> ➤ Locate source/cause of AOC ➤ Make repairs/eliminate AOC
Unplanned Status Change <ul style="list-style-type: none"> Inoperable/Failure of a Pipeline Component Stray Current on a Pipeline – Electric Shock 	<ul style="list-style-type: none"> ➤ Protect life & property ➤ Notify appropriate personnel ➤ Initiate Emergency Plan as Needed 	<ul style="list-style-type: none"> ➤ Locate source/cause of AOC ➤ Make repairs/eliminate AOC
Inadequate Odorization or Reports of Gas Odor <ul style="list-style-type: none"> Low odorization 	<ul style="list-style-type: none"> ➤ Protect life & property ➤ Prevent accidental ignition 	<ul style="list-style-type: none"> ➤ Locate source/cause of AOC

Operations and Maintenance Procedures

SCUD Procedure # MAINT011	Page 4 of 4
O&M Section # 10.1	SCUD Task # 330
Section: Maintenance	Revision Date: 09/06/16

Above Ground Valve – Corrective Maintenance

<ul style="list-style-type: none"> • Over odorization • Odor complaint 	<ul style="list-style-type: none"> ➤ Notify appropriate personnel 	<ul style="list-style-type: none"> ➤ Make repairs/eliminate AOC
<i>Improper Installation/Misalignment of Components</i> <ul style="list-style-type: none"> • Improper fitting/component installation • Misalignment of fittings/components 	<ul style="list-style-type: none"> ➤ Protect life & property ➤ Prevent accidental ignition 	<ul style="list-style-type: none"> ➤ Notify appropriate personnel ➤ Make repairs/eliminate AOC

RELATED PROCEDURES

SCUD Procedure #MAINT006 – Visual Inspection for Atmospheric Corrosion

SCUD Procedure #MAINT013 – Above Ground Valve – Preventive Maintenance

SCUD Procedure #CONST002 – Valve Operations – Above Ground