

Operations and Maintenance Procedures

SCUD Procedure # MAINT003	Page 1 of 3
O&M Section # 6.1	SCUD Task # 835
Section: Maintenance	Revision Date: 09/06/16

Install Cathodic Protection Electrical Isolation Devices

SCOPE AND PURPOSE

This procedure is to ensure that cathodically protected pipelines are electrically isolated.

RESPONSIBILITY

The System Maintenance Supervisor, or other designee, is responsible to ensure that the cathodic protection electrical isolation devices are installed as described in this procedure.

PERSONNEL SAFETY (Where Applicable)

Do not install cathodic protection electrical isolation devices if lightning is present.

EQUIPMENT AND MATERIALS

Necessary equipment and materials to perform the task, such as, but not limited to:

- Hand tools
- Flange Insulator kits
- Other equipment and materials as needed

INSTRUCTIONS

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 install electrical isolation devices. Refer to the OQ Plan for specific qualification requirements.

Installing an insulated flange assembly

1. Inspect the insulating gasket and flanges for defects.
2. Align flanges so that the faces are parallel to each other and the bolt holes line up. Do not force flanges into alignment using mechanical devices such as jacks or other tools that place excessive strain in the completed assembly.
3. Insert the full-face gasket between the flanges.
4. Insert several bolts, install nuts and tighten to hold the flanges in alignment. Insulating tubes and washers need not be installed on these bolts as these bolts will be removed later in this procedure.
5. Insert insulating tubes on remaining bolt holes.
6. Insert bolts through the insulating tubes.
7. Place insulating washers onto the bolts.
8. Place steel washers and nuts on bolts and hand tighten.
9. Remove the bolts installed in step 4 and repeat steps 5-8 for these bolts.
10. Partially tighten the bolts in sequence starting with the bolt at 12 o'clock, then 6 o'clock, then 3 o'clock, then 9, o'clock, etc. Depending on the size of the flange there may be 16 or more bolts. Repeat this process until all the bolts are properly tightened.
11. Check the effectiveness of the insulator.
12. If there is electrical conductivity across the flange assembly, disassemble the flanges and start over at step 1.
13. Insulating flange sets shall not be buried. Any underground insulating set must be installed in a valve box accessible for inspection and testing.

SCUD Procedure # MAINT003	Page 2 of 3
O&M Section # 6.1	SCUD Task # 835
Section: Maintenance	Revision Date: 09/06/16

Install Cathodic Protection Electrical Isolation Devices

14. Soap test the flange connection under operating pressure.
15. Apply coating as needed.

Installing an insulated threaded fitting (dielectric or insulating union) on a meter set and/or meter outlet.

1. All newly installed unions are insulating.
2. Inspect the insulating fitting for defects.
3. Apply thread compound as needed.
4. Thread the non-insulated end of the insulating fitting onto the riser and tighten.
5. Thread the insulating end of the insulating fitting onto the pipe downstream of the intended union position.
6. Install these types of fittings with the insulating end looking upwards to ensure positive identification in the future.
7. Tighten the insulated fitting using appropriate hand tools.
8. Check the effectiveness of the insulator if the service is steel.
9. Soap test the fitting under operating pressure.
10. Apply coating as needed.

Installing an insulating meter swivel(s)

1. All meter swivels installed are insulating.
2. Tighten the meter swivel(s) against the meter spuds using new meter swivel seals.
3. Soap test the fitting under operating pressure after installation is completed.
4. Apply coating or prime and paint as needed.

REPORTING/NOTIFICATION

The SCUD employee shall complete documentation in accordance with the Operation and Maintenance Manual. SCUD utilizes electronic software to record and maintain all PS readings. The proper electronic form for each test station shall be completed.

ABNORMAL OPERATING CONDITIONS

AOC Main Category (Examples of Specific AOCs)	Reactions to AOC, as appropriate	
<p><i>Unplanned escape of product from a pipeline</i></p> <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
<p><i>Fire or Explosion</i></p> <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 	<ul style="list-style-type: none"> ➤ Locate source/cause of AOC ➤ Use appropriate PPE ➤ Stop gas flow ➤ Make repairs/eliminate AOC



Operations and Maintenance Procedures

SCUD Procedure # MAINT003	Page 3 of 3
O&M Section # 6.1	SCUD Task # 835
Section: Maintenance	Revision Date: 09/06/16

Install Cathodic Protection Electrical Isolation Devices

	➤ Initiate Emergency Plan	
Pipeline Damage <ul style="list-style-type: none"> • Coating Damage • Corrosion Damage • Dents, Gouges, Scrapes, etc. 	<ul style="list-style-type: none"> ➤ Protect life & Property ➤ Prevent accidental ignition ➤ Notify appropriate personnel 	<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 (T/S, isolation device) • Low structure-to-electrolyte potential • Stray current on a pipeline 	<ul style="list-style-type: none"> ➤ Protect life & property ➤ Prevent accidental ignition ➤ Notify appropriate personnel 	<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 • Over odorization • Odor complaint 	<ul style="list-style-type: none"> ➤ Protect life & property ➤ Prevent accidental ignition ➤ Notify appropriate personnel 	<ul style="list-style-type: none"> ➤ Locate source/cause of AOC ➤ Make repairs/eliminate AOC

RELATED PROCEDURES

MAINT001 – Measure Structure–to–Electrolyte (Pipe to Soil) Potential

MAINT002 – Inspect Cathodic Protection Electrical Isolation Devices