

Operations and Maintenance Procedures

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O&M Section # 12.5	SCUD Task # 700
Section: Construction/Operations	Revision Date: 09/06/16

Tapping and Stopping a Steel Pipe - Small Machine

SCOPE AND PURPOSE

This procedure is to provide personnel with safe and effective activities to ensure the integrity of the piping system when tapping and stopping a steel pipeline (with the small machine) after the fitting has been installed. It also includes installation and removal of the isolation valve.

It describes practices required to comply with §192.627.

RESPONSIBILITY

The System Maintenance Supervisor, or other designee, is responsible to ensure that tapping operations are performed as described in this procedure.

PERSONNEL SAFETY

Every reasonable precaution shall be taken to protect employees and the general public. Anytime any type of work is to be done on or with a line with gas on it, the hazard of fire or explosion must be reduced by:

- A. The removal of ignition sources in the presence of gas
- B. Providing a fire extinguisher or fire dept.
- C. Preventing welding or cutting on a pipeline containing a combustible mixture
- D. Post warning signs or monitoring and securing the site.

EQUIPMENT AND MATERIALS

Tapping, Stopping and Completion Machine
Machine Adapter
Cutting Grease
Other Equipment and Materials as Needed
Safety Equipment

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.

General

- Fitting has been installed onto pipe.
- Inspect tapping and stopping equipment, parts and fittings needed.

Tapping Steps

1. Attach appropriate isolation valve to fitting.

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2. Fully open isolation valve.
3. Attach machine adapter, boring bar, shell cutter and pilot drill onto drilling machine. The cutter and pilot bit should be thoroughly coated with cutting grease. Retract the boring bar to rearmost position.
4. Place drilling machine and machine adapter onto isolation valve and securely tighten.
5. Advance the boring bar by hand until the pilot drill contacts the pipe, then slightly retract so as to prevent starting the drilling operation in a bind.
6. Determine travel distance. Mark the point on the body of the drilling machine that the feed tube will reach when drilling is complete.
7. Operate the drilling machine advancing cutter until the pilot bit penetrates the pipe, and then continue drilling as the cutter penetrates the pipe till the cut is complete.
8. Check completion of cut by attempting to advance cutter by rotating feed crank, if the boring bar does not advance easily, the cut is not complete.
9. When the cut is complete, retract boring bar to its rearmost position ensuring cutter and pilot bit clears the valve gate. The coupon should be contained in the shell cutter.
10. Securely close the isolation valve.
11. Remove the drilling machine and machine adapter as a unit from the isolation valve.
If necessary, clear pipe shavings and debris left from tapping operation.

Stopping Steps

- a. Identify and prepare the completion/stopping machine for stopping.
- b. Identify and attach the proper stopper (full or bypass) to the completion/stopping machine.
- c. Lubricate the stopper
- d. Attach the chip sweeper to the isolation valve. Open the valve and sweep the pipe.
- e. Close the isolation valve and remove the chip sweeper.
- f. Attach the completion/stopping machine to the isolation valve.
- g. Open the isolation valve and lower the stopper into the pipe.
- h. Make sure the ratchet is not operated during stopper expansion or contraction.
- i. Turn the feed tube and yoke clockwise with a short pause after each turn to expand the stopper.
- j. The feed tube and yoke are turn counter-clockwise with a short pause after each turn to contract the stopper.
- k. Retract the boring bar controlling the upward motion.
- l. Remove the feed yoke and close the isolation valve and bleed the gas.
- m. Remove the completion/stopping machine and prepare it for the completion plug.

Completion Plug and Cap Installation

- a. Attach completion/stopping machine assembled with inserting tool and completion plug to isolation valve. Open the isolation valve and advance inserting bar. Screw completion plug into fitting.
- b. Remove plug inserting tool from the completion plug and withdraw shaft to rearmost position.
- c. Close isolation valve.
- d. Remove completion/stopping machine and adapter as a unit from the isolation valve.
- e. Partially open isolation valve to ensure completion plug is properly seated, then remove isolation valve from fitting.
- f. Securely tighten completion plug, then apply pipe joint compound to male threads and attach completion cap.

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Inspect, Clean, Lubricate and Store Equipment, Parts and Fittings

REPORTING/NOTIFICATION

Complete documentation in accordance with Operation and Maintenance Manual.