

## PROCEDURES

### CONTROLLING GAS FLOW / PLASTIC PIPE

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#### 8.0 PURPOSE

This section identifies the safe procedures implemented within the Operator's system for controlling the flow of gas.

#### 8.1 GENERAL

The primary method to control the flow of gas through polyethylene pipe and tubing is by squeezing utilizing the approved squeeze tool.

**Refer to Section B-6 Static Electricity**

#### 8.2 METHODS FOR CONTROLLING GAS FLOW THROUGH PE PIPE

##### A. Squeezing

The proper size tool shall be selected for the particular pipe size to be squeezed.

**NOTE: During squeezing operations, the squeezing tool shall be grounded. Use jumper cable or locator wire attaching the ground rod to the squeezing tool.**

1. Select the proper squeeze tool with the retractable lower jaw in the correct position for the particular pipe or tubing size to be squeezed (ASTM F 1563).
2. Tool shall be visually centered on the pipe.
3. Tool shall have a mechanical stop.
4. Hydraulic tools should have relief control stop.
5. Properly ground the tool before proceeding.
6. Place the squeeze tool over the particular pipe or tubing where the squeeze is to be made, centering the pipe or tubing in the squeeze tool.
7. Tighten the squeeze tool slowly, creating a cold flow condition, until shutoff of the gas flow is achieved.
  - A. Above 32<sup>0</sup> F: **maximum 1 minute per inch of pipe diameter**
  - B. Below 32<sup>0</sup> F: **maximum 2 minutes per inch of pipe diameter**
8. For large diameter pipe, 3" and above, pause for 1 minute when squeeze is half way (1/2) and again when three quarters (3/4) complete do then same when releasing the squeeze
9. The reestablishment of gas service is accomplished by releasing the squeeze tool slowly (**Same maximum rates as above**).
10. **PE pipe shall not be squeezed more than one time in the same area.** Leave a minimum of 3 pipe diameter or 12 inches, whichever is greater,

## PROCEDURES

### CONTROLLING GAS FLOW / PLASTIC PIPE

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- between squeeze points.
11. Mark the squeeze area to identify the previous squeeze if uncovered again in the future.
  12. Soap test the squeeze area to ensure no damage resulting in leakage occurred during the squeeze procedure. (Pinhole leaks may appear)
  13. A squeeze must not exceed 8 hours. If a squeeze exceeds 8 hours it must be cut out.
  14. When squeezing PE pipe, the squeeze area must be at least 3 pipe diameters or 12 inches, whichever is greater, away from any butt fusion, socket fusion, electrofusion, sidewall fusion or mechanical fitting.
  13. If the pipe is damaged or leakage is present, replace the affected section of pipe.
  14. If under emergency conditions a squeezer not approved for the specific application is used, **squeeze shall be cut out and pipe replaced after the emergency is concluded.**

**NOTE:** When complete with the squeeze, the squeeze tool may be rotated 90<sup>0</sup> and used to reshape the pipe. Caution, do not re-flatten the pipe.

**NOTE:** If 100% shut-off is not achieved, it may be necessary to install a second squeeze tool at a safe location away from the first squeeze

#### B. PE Valves

Valves are designed to be used to control gas flow. Prior to operating any valve:

1. Check system maps and records to ensure what will result due to the valve operation.
2. Obtain management approval.
3. Determine proper operating procedure for valve.

**Note: Section G (Valves), Section Q (Emergency Response Plan), and Isolation Plan contain the appropriate information.**

#### C. PVC Pipe

1. PVC and other plastic pipes may include the installation and/or use of pressure control fittings.
2. Caution shall be exercised when squeezing PVC plastic pipe to avoid further cracking of the pipe.

## PROCEDURES

### CONTROLLING GAS FLOW / PLASTIC PIPE

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- i. PE squeeze tools may be used if specific PVC tool is unavailable.
- ii. In cold weather conditions, wrap cotton rags soaked in hot water around the PVC pipe for a period of 5 minutes or more. This may soften the PVC enough to avoid cracking when squeezed.

#### 8.3 GAS BYPASS

- A. Prior to shutting down mains or services, verify if bypass is needed.
  1. Refer to system maps and records.
  2. Verify pressure by use of gauges.
- B. When bypass is required, it may be necessary to contact the Engineering Department to determine size and number of bypasses needed.
  1. Two bypassing methods are approved for use:
    - a. Tap Tees
    - b. Service riser to service riser.
  2. Gauges shall be placed on either side of the bypass area.
  3. Monitor pressure before and after isolation of the area.
  4. When removing bypass from mains or services, the tubing or pipe shall be cut and capped at the tee as close as practical, but a minimum of 1 ft. from the tee.

#### 8.4 SAFETY

- A. Every effort shall be exercised to prevent entering area of blowing gas.
- B. The preferred method to control escaping gas is to drop back a safe distance to control gas flow either by squeezing, use of valves or control fittings.
- C. Should the situation require entering an area of escaping gas, the appropriate fire protection steps shall be implemented.  
**Refer to Section B-2, Personal Safety**