PROCEDURES
PURGING

5.0 PURPOSE (192.629)

The purpose of this section is to provide minimum requirements and information on purging operations.

5.1 Safety

A. Purge stacks shall be:
   1. Made of steel pipe.
   2. Properly grounded using ground clamps and ground rod.
   3. A safe distance above the work area. Recommended minimum of 6 ft. above grade.

B. The purge stack shall not be directed at persons, animals or openings to buildings.

C. Appropriate notification to dispatch and neighbors when purging for an extended time.

D. Proper safety precautions to protect people and property from potential hazards shall be implemented.

5.2 PURGE PROCEDURE

The following outlines the methods to be used when purging plastic lines. Lines 4" and larger should have a preplanned procedure for the tie-in and the purge. This procedure will be established prior to starting the work.

A. Purging is the process of expelling air or gas from the pipe or container and replacing it with air or gas. This is accomplished by introducing gas from the normal feed source and allowing the air and any air/gas mixture to escape to the outside atmosphere until 100% gas is obtained or 0% gas when purging with air. The same principles for purging are valid whether gas is used to displace the air or air is used to displace the gas.

B. When purging, it is desirable that the volume of air/gas mix at the junction of the air and gas remain at a minimum. In order to avoid stratification of the gas/air mix, a purge rate of 300 cfm or greater should be maintained.

C. In order to eliminate initial stratification of the air and gas, it is important that the

introduction of the gas or air be done quickly. It is desirable to establish the turbulent slug as soon as possible keeping it as small as possible.

D. Purges on all 2" and larger lines shall be checked with a combustible gas indicator (CGI) to ensure that the purge has been successfully completed.

E. For riser purging operation, the riser shall be grounded to the soil with #14 locator wire or jumper cable, along with ground plate or grounding rod. Attach ground wire to stopcock valve or steel purge stack to ensure proper grounding. The escaping gas/air mixture shall be expelled in a manner as to prevent the mixture from collecting in a confined area or enveloping the operating personnel.

5.3 PURGING SERVICES

A. Purge service lines at riser.

B. For riser purging operation, the riser shall be grounded to the soil with #14 locator wire or jumper cable, along with ground plate or grounding rod. Attach ground wire to stopcock valve or steel purge stack to ensure proper grounding. The escaping gas/air mixture shall be expelled in a manner as to prevent the mixture from collecting in a confined area or enveloping the operating personnel.

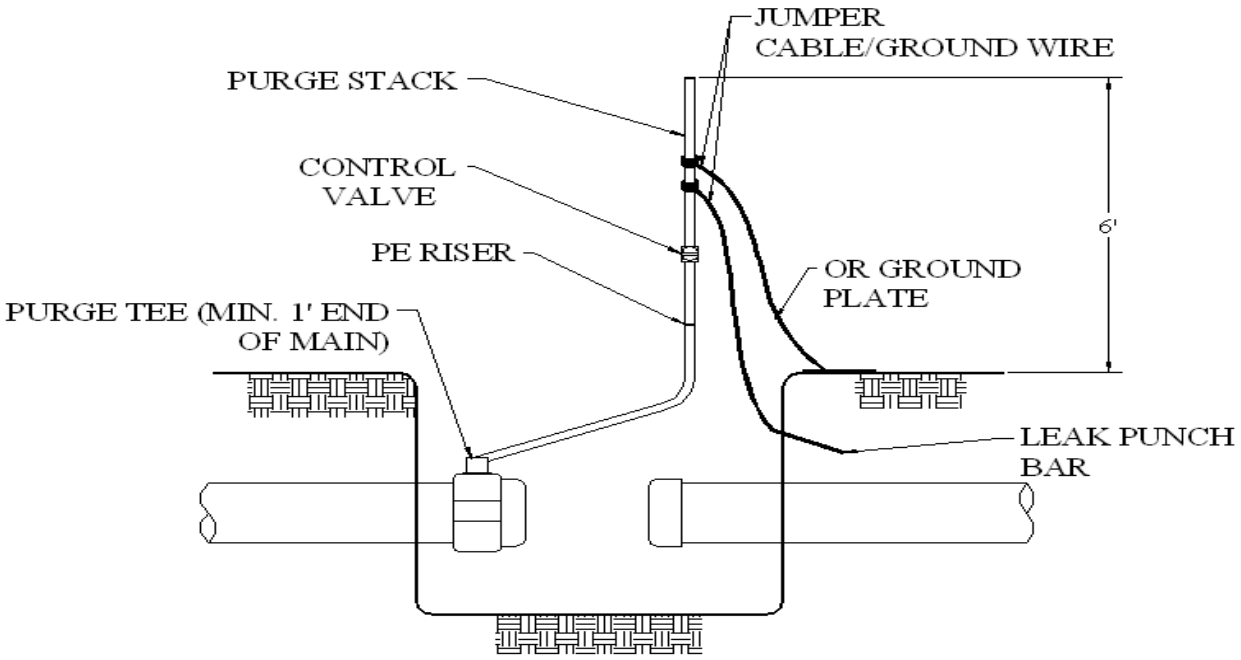
PURGE CHART
Linear feet

Pipe size	0-100’	101-200’	201-500’	501-1000’
1” and smaller				
Purge time (sec)	10	20	45	90

5.4 PURGING MAINS

NOTE: Purge fittings shall be installed within 3' of the end of main.

FIGURE #1



5.5 ABANDONMENT OF GAS FACILITIES

Each Operator facility or pipeline that is abandoned or inactivated must be completed in accordance with a plan, which shall include the following:

A. Each facility abandoned in place and lines not subject to gas pressure, except when undergoing maintenance, must be disconnected from all sources and supplies of gas, purged of gas, and the ends sealed; however, the line need not be purged when the volume of gas is so small that there is no potential hazard.

B. If air is used for purging, the operator shall ensure that a combustible mixture is not present after purging.

C. Long lengths of main shall be cut and sealed every two blocks, or a maximum of 1,000'.

5.6 Methods for Various Purges

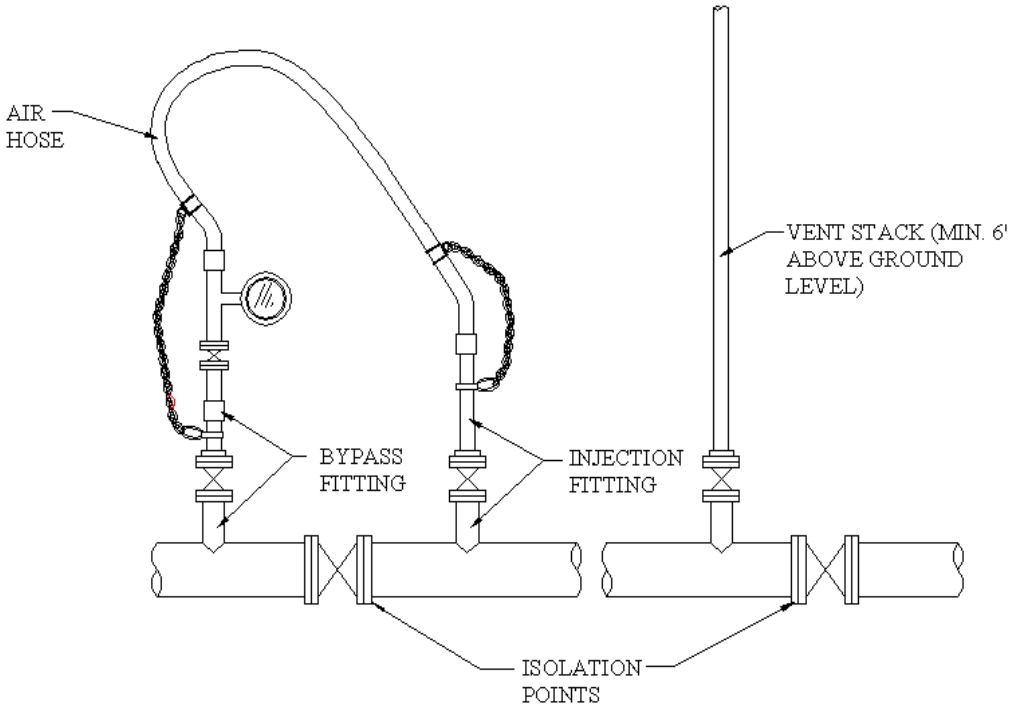
Figures 1 and 2 are typical methods used for various types of purges.

A. Purge Pipeline of Air

It is not necessary to inject gas through a bypass hose when a line valve can be opened at the injection end of pipeline being purged.

FIGURE #2

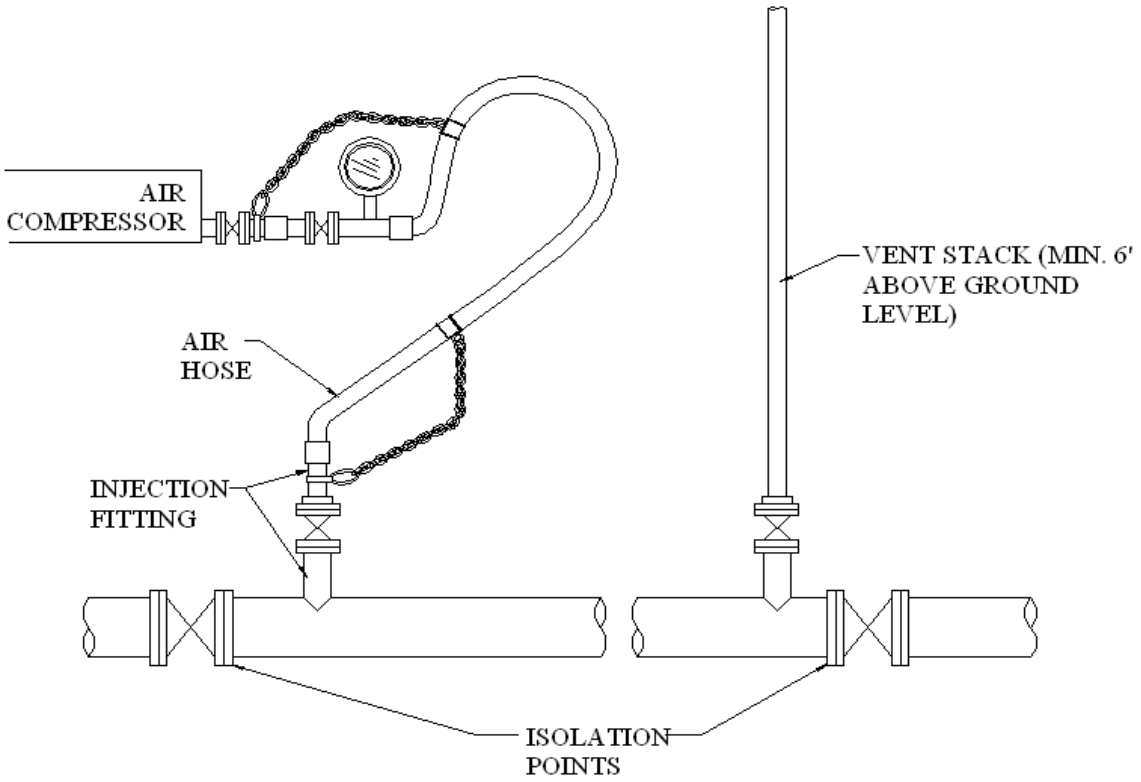
Arrangement for Directly Purging
Air from Pipeline



B. Purging Pipeline of Gas

FIGURE #3

Arrangement for Directly Purging Gas from Pipelines



5.7 VACUUM PURGE / EVACUATION

A high vacuum evacuation may be implemented to remove air and moisture from the pipeline system to be commissioned / gassed.

PROCEDURES
PURGING

A. The procedure shall reach a pressure level at which free water begins to boil off (the vapor pressure of water – 0.362 psig at ground temperature, 70 degrees F).

B. After the pressure has been maintained and as water vapor is constantly exhausted, the volume of air in the system will be negligible having been displaced by the water vapor.

C. When all of the water has been evaporated, the final maximum pressure attainable by the vacuum system shall be applied and held until the system reaches a dew point of –40 degrees F.

D. If there is no free water present, the system will reach the pressure attainable by the vacuum system and held until the system reaches a dew point of –40 degrees F.