

PROCEDURES

LEAKAGE INVESTIGATION

9.0 PURPOSE

When gas odor/leak calls are received, time is of the essence. Answer the call as quickly as possible. Gas odor/leak calls have **Top Priority** over all other work.

9.1 SCOPE

- A. Odor Investigation
- B. Linebreak Procedure
- C. Fire / Explosion
- D. No Gas / Low Pressure
- E. Gas Outage

9.2 GENERAL

- A. Upon arrival, always park/stage upwind, uphill or upstream of the situation.
- B. **Reference Emergency Response Plan**

9.3 LEAK / ODOR CALL

- A. Gas leaks may be located, or determined to be present, by sight, hearing, smell, application of liquid leak detector (**Soap Test**), use of appropriate leakage detection equipment, meter clock tests, or pressure tests.
- B. Leak investigation shall not be terminated until the point of origin of the uncontained gas has been located or the source of odor has been identified or positively determined not to be natural gas. If NO leakage is found and NO odor is present, the leak investigation must include the following:
 - 1. Park at a safe distance away from the leak.
 - 2. Pressure test for flow and lock-up when conditions permit.
 - 3. Meter clock test. If conditions do not permit a clock test, turn meter off until such time as a clock test or other appropriate test for leakage can be performed.
 - 4. Soap test MSA.

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5. Leak survey of Operator-owned underground facilities.
- C. Inside Leak Investigation, use CGI.
1. Clear the unit outside in uncontaminated air before entering.
 2. Do not use FI inside of any structure until it has been demonstrated that no explosive mixture of natural gas exists.
 3. Check for the presence of gas at the entrance to the building and periodically throughout the structure including gas appliances, heat registers and in each room.
 4. Gas at .5% LEL inside a structure is generally considered hazardous
- D. If in the judgment of the utility personnel, a hazardous atmosphere exists
1. Ask all occupants to leave the building.
 2. Turn off gas at the MSA.
 3. Notify Dispatch if assistance is required.
 4. Eliminate possibility of ignition
 5. Ventilate the building, if possible
 6. Notify the Fire Department for ventilation, if necessary
 7. Notify the Police Department if area access control is necessary.
- E. If, in the judgment of the Utility Personnel, no hazardous atmosphere exists, proceed with leak investigation
1. Perform a CGI leak check at the following locations:
 - At the point of entry of all underground utility services (gas, water, etc.)
 - All drains
 - At the top of all exterior walls, basement and or building walls from inside the building
 - All cracks in the floor or exterior basement walls
 - In crawl spaces or other openings below the floor in basement less buildings
 - Outside, over the service line, and around the building walls, within one foot of the building wall
 - All down spouts which are connected to underground drains
 - Soap test visible customer gas piping, appliance shut-offs and appliance connectors
 2. If leakage found make repairs as appropriate

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3. If repairs can not be made:
 - Isolate (shut off) appliance
 - If unable to isolate the leak, shut off the gas meter
 - Red tag the appliance or other deficiency
 4. Eliminate potential sources of ignition
 5. Open windows and doors to ventilate the building
- G. If unable to complete a leak investigation because you are unable to or denied access to the site, take the following actions:
1. Contact office for management assistance.
 2. Lock off meter
 3. Conduct a leak survey around the perimeter of the incident scene as close as possible to the site
 4. Periodically check with the authority in charge of the site until access can be gained
- H. If there is positive indication of underground leakage which cannot be controlled by turning off the meter, request appropriate assistance from dispatch.
Immediate action is required for all Grade I leaks
- I. Outside Gas Leak Investigation
- direction investigation
1. Survey perimeter of structure, MSA, service and 250 ft. of main each with F.I. unit. If positive indications are found then continue with CGI.
 2. Check for the presence of gas at:
 - The point of entry of all underground utility services (gas, water, wastewater, etc.)
 - At nearby buildings
 - All drains
 - The top of all exterior basement and/or building walls from outside of the building
 - All cracks in the pavement or exterior basement walls
 3. Continue away from the structure to check:
 - Gas, electrical, water, telephone and sewer manholes,
 - at cracks in the pavement and sidewalks, and at other locations providing an opportunity for finding gas leaks
 4. Determine the extent and migration pattern of the leak then take the necessary actions to make the situation safe

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5. Center and locate the source of the leak. If construction and excavation activities are required contact Dig Alert and monitor the situation until excavation can commence.
6. Excavate near the foundation of involved structures to ventilate gas.
7. Maintain communications with office.
8. Continue actions until natural gas is eliminated and repairs made.
9. It is good practice to make a final leak check at or near the service riser or structure before leaving regardless if leakage has been found elsewhere.

9.4 LINEBREAKS

- A. Take the necessary actions to make the situation safe. Protect life first, then property and the environment.
- B. Advise the dispatcher of the actual field situation and request necessary assistance and equipment as may be required.
- C. If fire or police are present on site, report to the Incident Command Post and provide all necessary assistance.
- D. Follow approved procedures for the control of the gas flow.
- E. If a gas service outage will result. **Refer to Section J-9.6**
- F. Follow approved procedures to locate and repair the damaged facilities.
- G. Document all corrective actions on appropriate forms
- H. Maintain communications with Dispatch and report all appropriate information
- I. Leak survey all natural gas facilities within 250 feet of the incident damage. **Refer to Section J-2.**

9.5 FIRE / EXPLOSION

Each fire or explosion occurrence shall be investigated to determine to what extent gas may have been involved if at all.

- A. Take the necessary actions to make the situation safe.

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- B. Advise the Dispatcher of the actual field situation and request assistance when necessary.
- C. If Fire or Police are on site, report to the Incident Command Post and provide necessary assistance.
- D. Shutoff gas supply.
- E. Shutoff service valves to building(s).
- F. When required, shutoff gas supply at main.
- G. If natural gas is suspected, check for underground gas leaks.
- H. Evacuate personnel if gas concentrations exceed 1 % gas in air (10,000 PPM) in the general atmosphere.
- I. Locate and repair the leak.
- J. Collect and retain any evidence.
- K. Record corrective actions taken.
- L. Maintain communication with Dispatch and report all appropriate information.

9.6 **NO GAS / LOW PRESSURE**

No gas and or low pressure may be as a result of gas leakage or the malfunction of a pipeline facility component. Each such occurrence shall be investigated to determine the cause of the no gas or low pressure and to take the necessary corrective action.

- A. Customer call
 1. Determine cause of no gas/low pressure:
 2. Verify meter is on
 3. Check meter and regulator functions, flow and lock up pressures
 4. Check individual appliances and shut off valves
 5. Check for restricted houseline
 6. Check for leakage

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7. Rectify situation as may be appropriate.
- B. If situation cannot be rectified:
 1. Isolate appliance, tag deficiency
 2. Shut off and lock and blind meter, tag deficiency
 3. Request assistance as may be necessary
- C. If gas outage is suspected, **refer to Section 9.7**

9.7 GAS OUTAGE

An outage call shall be considered an emergency and a priority.

- A. Determine the boundaries of the outage and the number of meters involved.
- B. Conduct investigation as necessary to determine the cause of the outage. Investigation shall include but not be limited to:
 1. Valves in proper positive
 2. Pressure reducing station malfunctions
 3. Significant leakage
 4. Damaged facilities
- C. Repair or correct the situation.
- D. Determine manpower requirements and call for assistance as necessary.
- E. If gas outage is involved:
 1. Turn off gas service valves at each service in the affected area.
 2. Advise appropriate civil authorities of the emergency when necessary.
 3. Initiate re-light procedures.