S·C·U·D

SEVIER COUNTY UTILITY DISTRICT

Operation & Maintenance Manual

OPERATING AND MAINTENANCE PROCEDURES FOR THE NATURAL GAS SYSTEM OF SEVIER COUNTY UTILITY DISTRICT

APPROVED BY:

Executive Administrator	Date
Executive Administrator	Date
Executive Administrator	Date
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Executive Administrator	Date

SEVIER COUNTY UTILITY DISTRICT
OPERATING AND MAINTENANCE PROCEDURES
ANNUAL REVIEW SHEET

ADMINISTRATOR SIGNATURE SHEET		
YEAR		DATE
2011	(Plan was rewritten)	
2012		
2013		
2014		
2015		
2016		
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2018		
2019		
2020		
2021		

PREFACE

This manual mandates operating, maintenance and emergency procedures for S C U D (Sevier County Utility District). All responsible personnel shall be trained in the procedures contained within this manual for the sole purpose of performing at the highest level obtainable.

The appropriate personnel shall review this manual a minimum of once each calendar year not to exceed fifteen months. If revisions are necessary, new copies of this manual will be distributed.

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GENERAL

The O & M manual, Procedures manual and Emergency Operations manual shall be made available to appropriate personnel.

Construction records/documentation and maps, will be made available to appropriate personnel

All responsible personnel shall be trained in the procedures contained within this manual for the sole purpose of performing at the highest level obtainable.

S C U D shall periodically review and the work done by their employees to determine the effectiveness and adequacy of the procedures used in normal operation and maintenance and modify the procedures when deficiencies are found.

Procedures will be reviewed and documented during supervisor meetings, other called employee meetings and inspections by supervisors.

1. *SYSTEM PRESSURES - 192.619 - .623*

1.1 General

S C U D shall assess the pressure limitations of all segments of the gas distribution system and shall maintain up-to-date records and maps of the system. These limitations shall be based on class location, design, construction tests, condition tests, condition and history of the piping and shall comply with all applicable codes. Periodic reviews of the above criteria shall be conducted to insure that the limitations are sufficient.

Operating pressures shall be classified and defined as follows:
Distribution low pressure: *1-60 psig*
Distribution medium pressure: *61-285 psig*
Distribution high pressure: *286-553 psig*

S C U D shall operate the system in such a manner that operating pressures throughout the system conform to the criteria established by S C U D.

All facilities shall be designed, constructed, operated and repaired as per Class 3 or Class 4 requirements as applicable, in accordance with the lasted edition of 49 CFR Part 192.5, "Class Location".

S C U D gas systems are supplied by East Tennessee Natural Gas pipeline at approximately 700 psig. The city gate stations reduce the pressure and deliver gas at a low, medium or high distribution pressure to the district regulator stations.

The district regulator stations reduce the gas pressure to low distribution pressure. S C U D operates at less than 20% of SMYS. The MAOP establishment design criteria shall be noted and accepted under CFR 49, 192.619. The gas distribution systems shall not operate in excess of the established Maximum Allowable Operating Pressure for each system. The description and operating perimeters of all regulator stations can be found in the S C U D "Regulating & Metering Manual.

Upon startup, re-instatement or turning gas onto a line for any reason, care must be taken so that the MAOP plus allowable build up is not exceeded.

1.2 SYSTEM PRESSURE CHANGES

General

Except as outlined in Section 10, "Valves", and Section 18, "Emergency Procedures", there shall be no system pressure changes without prior approval from the S C U D Measurement and/or Engineering Department. This will include, but is not limited to, valve operations, cutting of mains, squeezing off of mains and resetting regulator outlet pressures.
In order to minimize service interruptions, maps shall be utilized in determining the sequence in which valves are to be checked and operated.

Valve Operations Valves located in any main of the Gas Distribution system shall not be opened or closed without prior approval (see Section 10 "Valves"). The default status of all underground valves is "open". The status of a "closed" valve shall be maintained by the Engineering Department.

District Regulator Stations

No pressure changes shall be made on district regulator stations without prior approval from the S C U D Measurement and/or Engineering Department. The pressure setting of district regulator stations shall be

determined in accordance with the needs of the district and related to standards set forth in 1.1 of this section. These changes may be seasonal related.

City Gate Stations

There shall be no pressure changes at any city gate station without prior approval from the Measurement and/or Engineering Department.

2. *SYSTEM MONITORING - 192.631 & .741*

2.1 General

District regulator stations shall be equipped with recording gauges and/or telemetry equipment to monitor the gas pressure in the system. Telemetry communication is also currently utilized at the City Gate Station by East Tennessee Natural Gas.

Selected pressures at strategic locations (check points) throughout the distribution system shall be accessible and conveyed to SCUD by electronic recorders and/or telemetry equipment to monitor the gas pressure in the system. The electronic recorders are downloaded and reviewed monthly for any abnormally high or low pressure conditions.

Telemetry data is downloaded and available at the SCADA terminal located at the S C U D main office. High and low pressure alarms are initiated by the SCADA system.
S C U D shall immediately respond to and investigate any abnormally high or low pressure conditions or alarms. Corrections shall be made as deemed necessary to return the system to normal operating conditions.

2.2 Maintenance of System Monitoring Equipment

Pressure Transmitters: All transmitters shall be given a visual inspection, pressure check (at operating pressure) and calibrated if necessary, to coincide with the annual city gate and district regulator station inspections.
Calibration of transmitters shall be done as needed with a minimum frequency of annually not to exceed 15 months at city gate stations and 36 months at district regulator stations.
Pressure Recorders in the Field*:* Field recorders shall be calibrated as needed but at least every 36 months. Records shall be kept as to found and left conditions.

3. *ODORIZATION - 192.625*

All natural gas distributed to S C U D customers will be odorized sufficiently to be detectable at concentrations in air of 1/5 the lower explosive limit by a person with a normal sense of smell. To ensure proper odorant concentration, an odorant detection test shall be performed monthly at each check point using an odor detection instrument to determine the level at which the gas odor is detected. Odorization equipment at each city gate station shall be visually examined monthly for proper operation and appearance. For the S C U D gas system, approximately 0.5 to 0.75 pounds per MMCF of odorant level is injected in the system. Any abnormal condition(s) shall be corrected and documented. Inspections and maintenance shall be done in accordance with S C U D procedures.

4. *REGULATORS*

Regulators must be of proper size and capacity and be properly installed and protected from dirt, liquids, or other conditions that might prevent proper operation.

4.1 City Gate and District Regulator Stations

Annual Inspections - 192.739

Once each calendar year, at intervals not to exceed fifteen (15) months, each city gate station, district regulator station and accompanying equipment shall be inspected and tested. During the inspection, regulators will be inspected for lock off, controllers should fully open and close valves, and proper set points shall be verified. Appropriate steps shall be taken to correct or repair any malfunctions that are found. The inspection shall follow a procedural checklist which, upon completion, shall be dated and signed by the responsible personnel and recorded.

Periodic Inspections

City gate stations and district regulator stations shall be visually checked anytime a measurement department employee visits a station. Any abnormal condition found shall be either corrected or scheduled for repair, as appropriate.

4.2 Large Commercial and Industrial Regulators

Regulators supplying large commercial and industrial pressure customers shall be inspected a minimum of once each calendar year. Regulators owned by the customer are not subject to inspection or maintenance by S C U D.

4.3 Small Commercial and Residential Regulators

Whenever possible, without entering the customers building, each regulator supplying small commercial and residential customers shall be inspected for proper operation each time the customer's gas meter or regulator is changed or serviced.

5. *RELIEFS - 192.195 & .199 & .201 & .743*

Safety Relief Valves

Safety Relief Valves must be of proper size and capacity and be properly installed and protected from dirt, liquids, or other conditions that might prevent proper operation.

Safety relief valves at city gate stations and district regulator stations shall be inspected once each year, at intervals not to exceed fifteen (15) months. The set point of the relief valve shall be confirmed at the time of the annual inspection. **Relief settings shall be established at and not exceed10% above delivery pressure.**

S C U D will review the calculated required capacity of those relief devices protecting the distribution system and compare calculations with the rated capacity of the regulator. Any problems found will be corrected. **All relief valve stacks shall include a manual cut-off valve upstream of the relief valve and shall be locked in the open position.**

Safety relief valves at customer metering facilities which are owned by S C U D shall be given a visual inspection each time the regulator is inspected. Set point confirmations or capacity determinations of such relief device are not required. Relief devices owned by the customer are not subject to inspection and maintenance by S C U D.

6. *CORROSION CONTROL - 192.465*

6.1 General

Buried steel gas piping must have an external protective coating.
Each external protective coating, whether conductive or insulating, applied for the purpose of external corrosion control must–
(1) Be applied on a properly prepared surface;
(2) Have sufficient adhesion to the metal surface to effectively resist underfilm migration of moisture;
(3) Be sufficiently ductile to resist cracking;
(4) Have sufficient strength to resist damage due to handling and soil stress; and,
(5) Have properties compatible with any supplemental cathodic protection.
(a) Each external protective coating which is an electrically insulating type must also have low moisture absorption and high electrical resistance.
(b) Each external protective coating must be inspected just prior to lowering the pipe into the ditch and backfilling, and any damage detrimental to effective corrosion control must be repaired.
(c) Each external protective coating must be protected from damage resulting from adverse ditch conditions or damage from supporting blocks.
(d) If coated pipe is installed by boring, driving, or other similar method, precautions must be taken to minimize damage to the coating during installation
Within one year of completion of construction of such piping, a cathodic protection system designed to adequately protect the installed piping from external corrosion shall be installed and placed in operation. Steel piping in the S C U D system is protected by a mill applied coating, galvanic anodes and impressed current rectifiers.

Where piping is cathodically protected, field tests and surveys shall be conducted to verify adequate protection. Records of tests, surveys, and other important information shall be maintained by S C U D. This information must include the following:

- Assurance that, complete electrical isolation of the protected piping from foreign structures, including casings, has been accomplished. Pipe casing isolation shall be verified by potential tests, pipe locator or other methods.
- Electrical continuity must have been achieved for each segment of piping protected as a unit. Continuity shall be verified by pipe-to-soil potential surveys. Where continuity cannot be verified by potential surveys, the pipe locator shall be used as verification equipment.
- A pipe-to-soil potential survey of the piping, including all applicable components, laterals and extremities, shall be conducted and must indicate a cathodic potential of at least -0.85 volts to the copper-copper sulfate reference half-cell. Various points must be surveyed to assure adequate coverage of the piping.
- The cathodic protection system shall be designed and installed to minimize any adverse effects on existing, adjacent, underground structures.
- When foreign interference which may affect protected piping or structures is found to exist, corrective measures must be taken to minimize and monitor the effects of such interference.

Cathodic protection shall be installed and maintained in accordance with S C U D procedures. When potential surveys, tests or inspections, indicate an unacceptable level of protection, prompt action shall be initiated and continued until an acceptable level of protection is obtained.

6.2 Monitoring Cathodic Protection - 192.465

When tests and surveys of the cathodically protected system indicate an adequate level of protection has been achieved (a negative Cathodic voltage of at least .85 volts with reference to a saturated copper-copper sulfate half-cell), scheduled surveillance of the piping shall be initiated. This must include inspections of cathodic protection facilities and pipe-to-soil potential surveys conducted at various locations designated as routine check or test stations. A sufficient number of such points shall be selected to provide reasonable coverage of the protected area and must be so located that periodic potential tests will reflect the level of protection received by the piping in that area. S C U D shall review each area periodically and where necessary, adjust the monitoring system to reflect changes in the area's piping system. To ensure an effective and continuous level of protection, the following monitoring schedule shall be adhered to:

- ***Impressed Current Areas***
  Bimonthly - Inspect rectifier and check rectifier voltage and current outputs six (6) times each calendar year with intervals not to exceed 2-1/2 months.
  Annually - Potential survey at all test stations within all areas of the S C U D Systems shall be tested once each calendar year with intervals not to exceed fifteen (15) months. Maintenance on test leads will be done during the annual inspection and/or as needed throughout the year.
- ***Galvanic Anode Areas***
  Annually - Potential survey at all test stations within each area once each calendar year with intervals not to exceed fifteen (15) months.
- ***Isolated Main Sections (not in excess of 100 feet)***
  Annually – A pipe to soil potential survey shall be conducted each year on a minimum of ten (10) percent of such sections distributed over the entire system. Surveys must be scheduled in such a manner that a different ten percent will be tested each calendar year so that all sections will have been tested at least once in each ten (10) year period.
- ***Isolated Services and Components***
  Annually - Potential survey of not less than ten percent of isolated services and components distributed over the entire system. Surveys must be scheduled in such a manner that a different ten percent will be tested each calendar year so that all such services and components will be tested at least once in each ten-year period.
- ***Casings***
  Annually – Perform Potential Survey of metallic casings and the steel piping passing through the casing. If the two readings at a location are similar, additional inspections and tests may be made to determine whether the line pipe is electrically isolated from, or shorted to, the casing. When the readings or tests show the casing to be shorted to the line pipe, one of the following courses of action must be followed and performed by S C U D or a contracted Corrosion Control Technician:
  - Clear the short.
  - Monitor the casing with leak detection instruments at intervals not exceeding 4-1/2

6.3 Location of Piping in Relation to Electric Transmission Lines - 192.328

Procedures for the initial protection of piping outlined in this section shall also apply to piping located in the area of electric transmission lines. Monitoring of such piping shall be conducted annually. Routine surveys of piping subjected to induced voltages due to unbalanced line or fault currents shall be conducted only under suitable weather conditions. During surveys or maintenance, only one anode or anode bed shall be disconnected from the pipe at a time so as to maintain grounding for induced voltages. Trouble shooting of piping subjected to induced voltages shall be carried out by a third party NACE certified corrosion control contractor.

When it becomes necessary that the pipe be cut, a bonding conductor shall be attached to the pipe across the point of separation to maintain electrical continuity.

Piping and insulating flanges located in the area of electric transmission lines shall be protected from damage by fault currents or lightning. Protective measures include anodes, grounding cells, zinc ribbon and insulation kits (unions, sleeves and gaskets).

6.4 Monitoring Corrosion - 192.465 & .477 & .481

***Atmospheric Corrosion* - 192.479 & .481**

Above ground natural gas piping exposed to the atmosphere and installed after July 31, 1971 shall be visually inspected at least once every 3 years not to exceed 39 months. If atmospheric corrosion exists on above ground metallic piping, then remedial action shall be taken to protect the integrity of the material.

Close inspection should be made where clamps, rest plates, sleeved openings, pipe at soil-to-air interfaces, under thermal insulation, under dis-bonded coatings, at pipe supports, in splash zones, at deck penetrations, and in spans over water.

Corrosion surfaces shall be properly cleaned and stripped of all active corrosion and properly prepared for coated using approved coating and protective materials.

***Visual Inspection of Steel Piping* - 192.459**

NEW- The coating on steel piping that is to be buried shall be inspected by the construction crew prior to lowering and backfilling to insure that no damage has occurred that would be destructive to corrosion control. If damage is found, the coating shall be repaired by manufacturer approved methods.

EXPOSED- Buried piping which has been intentionally uncovered or otherwise known to be exposed shall be examined by the excavating crew for evidence of external corrosion and/or coating defects.

General corrosion. Except for cast iron or ductile iron pipe, each segment of generally corroded distribution line pipe with a remaining wall thickness less than that required for the MAOP of the pipeline, or a remaining wall thickness less than 30 percent of the nominal wall thickness, must be replaced. However, corroded pipe may be repaired by a method that reliable engineering tests and analyses show can permanently restore the serviceability of the pipe. Corrosion pitting so closely grouped as to affect the overall strength of the pipe is considered general corrosion for the purpose of this paragraph.

Localized corrosion pitting. Except for cast iron or ductile iron pipe, each segment of distribution line pipe with localized corrosion pitting to a degree where leakage might result must be replaced or repaired.

If external corrosion requiring remedial action under 49 CFR 192.483 through 192.489 is found, the operator shall investigate the immediate surface and length beyond the exposed portion (by visual examination) to determine whether additional corrosion requiring action exists in the vicinity of the exposed portion. All actions shall be in accordance with S C U D procedures and recorded.

***Internal Corrosion* - 192.476 & .477**

Whenever any pipe (segment or coupon) is removed from the system for any reason, the internal surface must be inspected for evidence of corrosion. If internal corrosion is found, then adjacent pipe must be investigated to determine the extent of the internal corrosion. Natural gas containing more than 0.25 grain of hydrogen sulfide per 100 standard cubic feet (4 parts -per-million) may not be stored in pipe type or bottle type holders. Provisions shall be made to monitor internal corrosion if the natural gas stream contains more than 0.25 grain of hydrogen sulfide per 100 standard cubic feet (4 parts -per-million). Gas analysis is received and reviewed annually from the gas supplier for compliance of the above.

6.5 Corrosion Control Records - 192.491

All records relating to the operation, maintenance and effectiveness of the cathodic protection system shall be retained by S C U D for a minimum of 5 years or the life of the facilities, whichever is longer? Records must include data pertaining to all locations, tests, surveys, inspections and maintenance to demonstrate the adequacy of corrosion control measures or that a corrosive condition does not exist.

7. *RECORD KEEPING PROCEDURES*

7.1 General

The following records shall be maintained on all new underground piping system installations and repairs and/or changes to existing underground piping systems in detail for the life of the pipeline or at least 5 years whichever is longer, to provide historical information, physical location, design ratings, and any other data necessary for the safe and continuous operation and maintenance by S C U D.

7.2 Gas Distribution Mains

S C U D shall review and update system maps on a regular basis. Completion reports for new installations, repairs or replacements shall be stored as a permanent record for the life of each gas main. All new or replaced mains shall be surveyed and added to the GIS system map.

7.3 Patrols and Leak Surveys

S C U D shall maintain records of distribution pipeline patrols and leakage surveys in accordance with 192.721 & 723 and S C U D procedures.

7.4 Underground Valves

Distribution valves shall be plotted on gas system maps indicating size, type, and location of each valve. The inspection and maintenance records of all valves will be maintained as specified in Section 10 of this manual.

7.5 Services

Completion reports (service orders) showing size, type, tap location, valve location, corrosion control facilities and pressure tests of each service shall be recorded as a permanent record and maintained in the GIS.

7.6 Meters

S C U D shall maintain records on each gas meter for the life of the meter. Records shall include but not be limited to the following:

1. Locations
2. Date of installation and removal
3. Service order when installed and removed
4. Maintenance performed on the gas meter

7.7 Regulators and Relief Valves

S C U D shall keep updated drawings of all city gate stations, district regulator stations, and large industrial regulator installations. All data showing make, type, serial number, inner valve size, set pressures, relief settings etc. and a record of all inspections and maintenance.

7.8 Odorization

Records of the periodic sniff test used to determine effectiveness of odorization shall be kept on file for at least one (1) year.

7.9 Leaks

S C U D shall keep a record of all reported or discovered leaks and the disposition of each leak reported in accordance with the procedure set forth in CFR 192.947 and Sections 7 & 12 of this manual.

7.10 Operator Qualification

S C U D employees performing covered task shall be qualified under an Operator Qualification program. Operator Qualification records shall be maintained by SCUD.

Contractors performing covered tasks for S C U D, shall provide proof of qualification under their own Operator Qualification program or be qualified by S C U D.

8. *GAS ODOR & LEAK RESPONSE - 192.615 & .616 & .723*

Procedures for advising customers and the general public in recognizing gas odors, leaks and emergency conditions, and the reporting of such conditions to the appropriate officials shall be developed and maintained. CFR 49, 192.616

Provisions for receiving reports of gas odors, leaks and emergency conditions shall be maintained twenty-four (24) hours a day, seven (7) days a week.
After working hours, on weekends and holidays, reports will be received and relayed to S C U D by an answering service.
Upon receiving a report of a gas odor, leak or emergency condition, the necessary information will be obtained and relayed to an S C U D representative, who must investigate the call as soon as possible, in accordance with S C U D procedures to determine if any corrective action is required.
Employees involved with responding to gas odors, leaks and emergency conditions, shall be trained and qualified in the appropriate procedures.

9. *GOVERNMENTAL REPORTING - 191.3 & .5 & .7 & .9*

9.1 General

An incident as defined below, must be reported at the earliest practical moment following discovery. It must be reported to the Pipeline and Hazardous Materials Safety Administration (PHMSA) at the **NATIONAL RESPONSE CENTER (WASHINGTON, D.C.). The report may be filed electronically at http://www.nrc.uscg.mil or telephonically at 1-800-424-8802.**

Tennessee Regulatory Authority (TRA), must also be notified both by phone and in writing.

Incident Definition - Any event that involves a release of gas from a pipeline that results in any of the following:

1. A death or personal injury requiring in patient hospitalization (must be confirmed)
2. Estimated property damage of $50,000 or more, including loss to S C U D and others or both, but excluding the cost of lost gas.
3. Unintentional estimated gas loss of 3 million cubic feet of gas or more.
4. An event that is significant, in the judgment of Sevier County Utility District, even though it did not meet the previous criteria.

Gathering the required information to be facilitated shall fall to each department head, upon which each shall establish and implement detailed procedures for obtaining and transmitting required data to the appropriate areas.
The following information shall be reported:

1. Name and appropriate phone numbers of S C U D and person(s) making report.
2. The location of the incident.
3. The time of the incident.
4. The number of fatalities and personal injuries, if any.
5. All other significant facts that are known by S C U D that is relevant to the cause of the incident or extent of the damages.

The electronic or telephonic report will be made by the S C U D president or vice-president.
If the president or vice-president is unavailable, the next available responsible person shall make the report.

9.2 Written Reports - 191.7 & .9

A follow up report, (DOT form 7100.1) will be submitted to PHMSA and TRA as soon as practicable time allows but not exceeding thirty (30) days following the incident.
Reports to PHMSA must be filed electronically at http://portal.phmsa.dot.gov/pipeline unless an alternative method is authorized.
Written reports must be sent to:
Office of Pipeline Safety, Pipeline and Hazardous Materials Safety Administration,
U.S. Department of Transportation, the Information Resources Manager, PHP 10
1200 New Jersey Avenue, SE,
Washington DC 20590-0001

Gathering the required information to be facilitated shall fall to each department head, upon which each shall establish and implement detailed procedures for obtaining and transmitting required data to the appropriate areas.

The responsible personnel repairing the leak shall prepare the required reports and forward them to the S C U D president or vice-president.
Any additional relevant information gathered about an incident after the initial report has been filed, will be filed in a supplemental report or reports that reference the initial report and incident by date and subject.

9.3 Distribution System: Annual Report & Mechanical Fitting Failure Reports - 191.11 & .12

- S C U D shall submit an annual report online via the PHMSA Portal on the **Department of Transportation Form RSPA F 7100.1-1. This report must be submitted not later than March 15, for the preceding calendar year.**
- Each mechanical fitting failure, as required by Integrity management in § 192.1009, will be submitted by SCUD online via the PHMSA Portal on a Mechanical Fitting Failure Report Form PHMSA F-7100.1-2. SCUD shall submit a mechanical fitting failure report for each mechanical fitting failure that occurs within a calendar year not later than **March 15** of the following year.

9.4 Recognizing and Reporting Safety Related Hazardous Conditions - 191.23 & .25

S C U D employees engaged in the operation and/or maintenance of the gas facilities shall report to their supervisor/foreman, conditions which constitute, or if allowed to continue, will constitute a potential hazard to life or property. (See the Safety Related Conditions listed below). S C U D management must file a report and the report must be filed (received by the Associate Administrator, OPS) in writing within five (5) working days after the day the safety related hazardous condition is determined to exist, but no later than ten (10) days after the day the condition was discovered. Separate conditions may be described in a single report if they are closely related. Reports may be transmitted by facsimile at (202) 366-7128.

Safety related hazardous conditions include:

1. In the case of a pipeline that operates at a hoop stress of 20 percent or more of its specified minimum yield strength (SMYS), general corrosion that has reduced the wall thickness to less than that required for the maximum allowable operating pressure, and localized corrosion pitting to a degree where leakage might result.
2. Unintended movement or abnormal loading by environmental causes, such as an earthquake, landslide, or flood, that impairs the serviceability of a pipeline.9 - Repr
3. Any material defect or physical damage that impairs the serviceability of a pipeline that operates at a hoop stress of 20 percent or more of its specified minimum yield strength.
4. Any malfunction or operating error that causes the pressure of a pipeline to rise above its maximum allowable operating pressure plus the build-up allowed for operation of pressure limiting or control devices.
5. A leak in a pipeline that constitutes an emergency.
6. Any safety-related condition that could lead to an imminent hazard and causes (either directly or indirectly by remedial action of the operator), for purposes other than abandonment, a 20 percent or more reduction in operating pressure or shutdown of operation of a pipeline.

S C U D currently does not operate any pipelines at 20% SMYS or above.

S C U D does not use, store, distribute or transport LNG.

Safety Related Conditions not requiring reporting includes:

1. A condition on a master meter system or customer owned service line.
2. A condition that becomes an incident before the reporting deadline for filing a safety related hazardous condition report.

3. A condition on a pipeline that is located more than 220 yards from any building for human occupancy or outdoor place of assembly and does not lie within a active railroad, street, highway, or paved road right-of-way.
4. A condition that is corrected by repair or replacement before the deadline for filing a safety related hazardous condition report.
5. A condition where corrosion is localized on coated or catholically protected pipe and is repaired or replaced before the deadline for filing a safety related hazardous condition report.

The report must be headed "Safety-Related Condition Report" and contain the following information:

1. Name and principal address of operator.
2. Date of report.
3. Name, job title, and business telephone number of person submitting the report.
4. Name, job title, and business telephone number of person who determined that the condition exists.
5. Date condition was discovered and date condition was first determined to exist.
6. Location of condition, with reference to the State (and town, city, or county) or offshore site, and as appropriate, nearest street address, offshore platform, survey station number, milepost, landmark, or name of pipeline.
7. Description of the condition, including circumstances leading to its discovery, any significant effects of the condition on safety, and the name of the commodity transported or stored.
8. The corrective action taken (including reduction of pressure or shutdown) before the report is submitted and the planned follow-up future corrective action, including the anticipated schedule for starting and concluding such action

10 VALVES - 192.145 & .181

10.1 Maintenance - 192.747

The following valves shall be inspected, serviced, and operated annually, not to exceed 15 months, without interfering with the operation of the system. (Valves on the end of a gas line that are to be used for future extension are not included.)

A. UNDERGROUND VALVES:

1. Valves on the inlet and outlet lines to city gate and district regulator stations
2. Valves on a main line.
3. Valves on large commercial or industrial service lines.
4. Valves on inlet lines to farm taps.

B. *ABOVE GROUND VALVES IN CITY GATE AND DISTRICT REGULATOR STATIONS*:

1. Valves on meter runs.
2. Valves on the inlet and outlet lines.
3. Valves on station bypasses.
4. Valves on regulating runs
5. Block valves on relief stacks.

C. ANY OTHER VALVES WHICH ARE DEEMED CRITICAL IN THE EVENT OF AN EMERGENCY.

Valves listed above shall be inspected annually not to exceed 15 months.
Meter set block valves and meter stops shall be inspected and serviced as needed.
Valve maintenance shall be done in accordance with procedures found in the S C U D Procedures Manual.

D. Meter stops turned off for any reason and left unmanned must be locked off.

11 TRANSMISSION LINES - 192.3

S C U D does not operate or maintain any transmission lines.

12 DISTRIBUTION PIPING INSTALLATION & MAINTENANCE

Distribution gas lines installed or repaired shall be done in accordance with this manual and the S C U D Procedures Manual. See Appendix 5 of this manual for Welding and Fusion General Information. See Section 17 for Depth of Cover. Procedures will be reviewed during supervisor meetings, other called employee meetings and inspections by supervisors.

12.1 Surveillance

S C U D shall use continued surveillance of its facilities to determine and take appropriate action concerning changes in class location, failures, leakage history, corrosion, substantial changes in cathodic protection requirements, and other unusual operating and maintenance conditions.
Surveillance is accomplished thru: Patrolling, Exposed Pipe Reports, Cathodic Protection Survey and Leak Survey.
If a segment of pipe is determined to be in unsatisfactory condition, the segment will be replaced or abandoned instead of lowering the MAOP

A. Patrolling - 192.721

The frequency of patrolling shall be determined by the severity of the condition which could cause failure or leakage and the consequent hazards to public safety.
S C U D shall keep records on all mains located in places or on structures where potential physical movement or external loading could cause failure or leakage. Mains subject to anticipated movement or external loading which may result in failure or leakage will be patrolled at least at quarterly intervals (4 times a year) not exceeding 4 ½ months for inside business districts and at least 2 times a year not to exceed 7 ½ months for outside business districts. (Example - Bridge Crossings)

Movement external loading shall be defined as: vibration, vehicular impact, earth movement, future excavations, washouts, floods, unstable soil, landslides, areas where piping support may have been weakened by outside third party construction of other utilities and where hazards that may cause the pipe to move or to be subjected to abnormal loads.

B. Exposed Pipe Reports

Reports are filled out whenever steel pipe is exposed, noting the condition of the pipe and coating. See Appendix?

C. Cathodic Protection Survey

A cathodic survey is perform annually. See section 6 of this O & M manual.

D. Leak Survey - 192.723

Leak Surveys will be conducted annually in accordance with 192.723. Each leak will be documented for the purpose of repair and maintenance. S C U D utilizes GIS to develop and maintain a map depicting the boundaries of the business and non-business districts. Business Districts will be surveyed using gas detection equipment on an annual basis not to exceed fifteen (15) months.

Business Districts include:

1. Areas where the majority of building on either side of the street are utilized for business use, such as retail, wholesale, office, or service.
2. Area where the majority of building on either side of the street are high occupancy multi-story buildings with multiple businesses that share common walls.

3. Area where gas facilities are under continuous paving that extends from the center line of the street to the building wall.
4. Buildings that regularly accommodate more than one hundred (100) people for economic, educational, health, religious, recreational, entertainment or dining purposes.

Non-Business districts are all areas not included in the business districts. These areas will be surveyed with gas detection equipment, on a rotating annual basis so that all non-business districts will be surveyed at least once every five (5) years not to exceed sixty-three (63) months.

Each gas meter **must** be leak surveyed during the appropriate leak survey.

12.2 Leak Classification & Management

The following leak classifications are to be used by S C U D Employees when grading a gas leak. The leaks will be graded in accordance with leak classification criteria in the S C U D procedures manual.

Grade"1" – Leaks -This classification shall designate a leakage condition which, due to its location and/or relative hazard potential, shall require immediate corrective action until the hazardous condition no longer exist. The leak shall then be scheduled for immediate repair activity.

Grade "1" leaks include, but are not limited to:

1. *Any leak which, in the judgment of the representative at the scene, is regarded as potentially hazardous.*
2. Any indication of gas entering a building or tunnel.
3. Any gas reading from a CGI (combustible gas indicator), in a substructure where gas could migrate inside or to the outside wall of a building. Such as: manhole, vault, water meter box, catch basin, etc...
4. Any gas reading from a CGI (combustible gas indicator), at or below ground level, within five (5) feet of the foundation wall of a building which, in the judgment of the Gas Operator, is potentially dangerous.
5. Any reading from a CGI (combustible gas indicator), of 3% gas or greater, in a confined space.
6. Any reading from a CGI (combustible gas indicator) of 3% gas or greater, one (1) foot or higher above the ground or surface, in an area accessible by anyone other than a S C U D representative.
7. Blowing Gas.
8. Leaking gas that has ignited.

Grade"2"- Leaks - This classification shall designate a leakage condition which, due to its location and/or relative hazard potential, does not require immediate attention, but shall be scheduled and repaired within six (6) months unless the line is to be replaced or abandoned. The replacement or abandonment must be completed within twelve (12) months. If the leak is not repaired within six (6) months, it must be rechecked at intervals not to exceed six (6) months.

Grade "2" leaks include, but are not limited to:

1. *Any leak not reaching any of the Grade "1" Leak criteria but in the judgment of the S C U D representative on the scene justifies scheduling repair.*
2. A reading from a CGI (combustible gas indicator), of greater than 1% gas but less than 3% gas, one (1) foot or higher above the ground or surface.
3. A reading from a CGI (combustible gas indicator), of less than 3% gas, in a confined space.
4. A reading from a CGI (combustible gas indicator), of 1.5% gas or greater, at multiple locations more than three (3) feet apart, at the surface, edge or ground along a sidewalk but reading less than 3% gas, at a height of one (1) foot or higher above the ground or surface.

5. A reading from a CGI (combustible gas indicator), of 4% gas or greater, at multiple locations more than three (3) feet apart, at the surface, edge or ground along a road but reading less than 3% gas at a height of one (1) foot or higher above the ground or surface.

Grade"3" Leak- This classification shall designate a leak condition that does not meet any of the requirements for a Grade "1" or Grade "2" leak. A Grade "3" leak shall be monitored at least once every twelve (12) months to determine the current condition of the leakage.

12.3 Repair of Mains and Services - 192.309 & .311

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.

Excavations 5 feet deep or deeper must be properly sloped or protected and air quality checked before entering.

The maintenance of mains and services shall consist of testing, repair, protection and replacement of the component parts. Pipe must be pretested or pressure tested after being installed.

Plastic pipe and/or insert tubing designed and installed in accordance with industry construction standards and procedures may be used as a method of replacement for steel mains and services.

Temporary or permanent repairs shall be made on all lines that have a leak, corrosion pitting or other imperfection or that receive damage, which in the judgment of the S C U D representative would endanger the public. When temporary repairs are used, permanent repairs shall be made as soon as possible.

Mechanical fittings shall not be used as a permanent repair. New and permanently repaired pipe must be fused or welded. Heat may not be applied with an open flame or torch.

Repairs shall be pressure tested and/or tested with soap.

12.4 Abandonment and Deactivation of Facilities - 192.727

Abandonment of Facilities: Facilities to be abandoned will be disconnected from all gas sources, purged and the ends of the pipe sealed. Purging will be done in accordance with S C U D purging procedures. The ends of the pipe shall be capped or welded closed.

Valve boxes shall be removed or the value lid removed and the stand pipe filled with a suitable compacted material.

Deactivation of Services: Whenever service to a customer is discontinued and the meter and/or service riser is left in place, the valve on the service riser shall be locked off.

12.5 *Tapping Pipelines Under Pressure*

Tapping must be done in accordance with manufacturer and S C U D procedures. See S C U D Procedures Manual.

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.

12.6 Purging

All purging must be done in accordance with S C U D procedures. See S C U D Procedures Manual.

13 TEST REQUIREMENTS - 192.501 - .509

All pressure tests must be documented and the records maintained.
Steel: Each new, replacement or reinstated up rated steel main or service shall be pressured tested at a minimum pressure of 90 psig or 1.5 times the expected MAOP whichever is greater and a maximum pressure of 1.5 times 20% SMYS. After allowing time for temperature stabilization of the test material used, the test must be observed for a minimum of 15 minutes for service lines and 2 hours for mains.
In case where it would not create and undue delay in the completion of the job, the test should be left for longer periods of time. The test duration will ensure the discovery of any leaks.

Plastic (PE): New, replacement, and reinstated plastic services shall be pressure tested at a minimum pressure of 90 psig and the maximum test pressure may not be more than three times the design pressure (60 psig for S C U D's distribution system) at a temperature not less than the pipe temperature during the test.
After allowing time for temperature stabilization of the test material used, the test must be observed for a minimum of 15 minutes for service lines and 2 hours for mains. In cases where it would not create an undue delay in the completion of the job, the test should be left for longer periods of time. The test duration will ensure the discovery of any leaks.

Any service line that is temporarily disconnected must be tested the same as a new service line from the point of disconnection to the meter stop before reconnecting. However, if provisions are made to maintain continuous service, such as by installation of a bypass, any part of the original service line used to maintain continuous service need not be tested.

14 EXCESS FLOW VALVES (EFVs) - 192.383 & 385

The United States DOT required gas distribution utilities to have an EFV program effective February 3, 1999. Since then, Congress has specified in the 2006 Pipeline Safety (PIPES) Act that all operators of gas distribution systems install EFVs in SFR (Single Family Residence) services in lieu of customer notification. This change went into effect in June 2008. In April 2017, The United States DOT expanded the use of EFVs to branch service SFRs and some commercial services, effective April 14, 2017. The applicable DOT requirement is 49 CFR 192.383. EFVs are spring operated and control the flow of gas through a service line when the flow rate exceeds a predetermined quantity. EFVs must perform to the requirements of 49 CFR 192.381. As such, careful sizing of the EFV is critical. EFVs are typically installed in a coupling and activate when a gas service line is severed due to a dig-in. All EFVs supplied must meet the requirements of ASTM F-1802 and ASTM F-2138. The EFV has a bleed-by mechanism that will reopen the EFV when the pressure on both sides equalizes.

S C U D will give all customers notice of the option to request an EFV installation, except where such installation is not required under § 192.383(c) (i.e., where the service line does not operate at a pressure of 10 psig or greater through the year, the operator has experienced contaminants in the gas stream that could interfere with EFV operation, an EFV could interfere with operation and maintenance activities, or an EFV meeting performance standards in § 192.381 is not available).

EFVs shall be installed on the following types of services with a main pressure greater than or equal to 10 psig. Install EFVs on services as close as practical to the main.

(1) A single service line to one Single Family Residence (SFR);
(2) A branched service line to a SFR installed concurrently with the primary SFR service line (*i.e.,* a single EFV may be installed to protect both service lines);
(3) A branched service line to a SFR installed off a previously installed SFR service line that does not contain an EFV;
(4) Multifamily residences with known customer loads not exceeding 1,000 SCFH per service, at time of service installation based on installed meter capacity, and
(5) A single, small commercial customer served by a single service line with a known customer load not exceeding 1,000 SCFH, at the time of meter installation, based on installed meter capacity.

The EFV shall be sized and installed in accordance with the manufacturer's charts and instructions. The EFV must be sized to handle the expected gas load it will be supplying.
The excess flow valve shall be located as close to the main or lateral as practical.
The EFV, service line and/or riser shall be documented and mapped to identify the presence of an excess flow valve.

Exceptions: S C U D need not install an excess flow valve if one or more of the following conditions are present:

(1) The service line does not operate at a pressure of 10 psig or greater throughout the year;
(2) The operator has prior experience with contaminants in the gas stream that could interfere with the EFV's operation or cause loss of service to a customer;
(3) An EFV could interfere with necessary operation or maintenance activities, such as blowing liquids from the line; or
(4) An EFV meeting the performance standards in §192.381 is not commercially available to the operator.

S C U D must install either a manual service line shut-off valve or, if possible, based on sound engineering analysis and availability, an EFV for any new or replaced service line with installed meter capacity exceeding 1,000 SCFH.

15 SAFETY

Precautions shall be taken to ensure the safety of S C U D employees and the public as well as property.

Areas of safety include but are not limited to:

1. Personal Protective Equipment (PPE) – Hard Hat, Vest, Safety Glasses, etc…
2. Signage and Traffic and Pedestrian Control - (In accordance with the Manual on Uniform Traffic Control Devices)
3. Control of Ignition Sources - 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.
   e) Static Suppression
4. Excavation Safety - Excavations 5 feet deep or deeper must be properly sloped or protected and air quality checked before entering.
5. Vehicle and Equipment Operation

Procedures to ensure safety can be found in the S C U D Procedures Manual

16. *MAINTENANCE RECORDS*

These specifications are covered under Section 7, "Record Keeping Procedures".

17. *DEPTH OF BURIAL - 192.327 & 361*

17.1 *Distribution Mains*

Gas distribution mains must be installed with a **minimum of twenty-four inches (24") cover** in accordance with CFR 49/DOT 192.327. All depths specified in this standard meet or exceed the required twenty-four inches (24") minimum cover for distribution mains.

Where an underground structure prevents the installation of a distribution main with the minimum cover, the main may be installed with less cover if it is provided with additional protection to withstand anticipated external loads. Such installations cannot be made without prior approval of proper S C U D authority. Any additional protective material shall not be in direct contact with the gas main.

17.2 *Service Lines*

Gas service lines must be installed with a **minimum of 12 inches (12”) cover on private property and at least 18 inches (18”) of cover in streets and roads** in accordance with CFR 49/ DOT 192.361.

However, where an underground structure prevents installation at those depths, the service line must be able to withstand any anticipated external loads.

18. *EMERGENCY PROCEDURES 192.615*

18.1 *General*

S C U D shall provide employees involved in emergency response, access to the Emergency Operations Manual and Emergency Procedures.

Employees involved with responding to gas emergency conditions, shall be trained and qualified in the appropriate procedures.

S C U D shall review and document, activities to verify the effectiveness of the training and emergency procedures.

Since the uncontrolled and unwanted release of natural gas could result in situations hazardous to life and property, the following emergency procedures are established to bring the emergency under control in the shortest possible time and with a minimum of customer outage. In all emergency situations, the protection of life should always receive priority over the protection of property.

Care must be taken to secure the scene and extinguish ignition sources.

18.2 Recognizing Safety Related Hazardous Conditions

S C U D employees engaged in the operation and/or maintenance of the gas facilities shall report to their supervisor/foreman, conditions which constitute, or if allowed to continue, will constitute a potential hazard to life or property. (See the Safety Related Conditions listed below). S C U D management must file a report and the report must be filed (received by the Associate Administrator, OPS) in writing within five (5) working days after the day the safety related hazardous condition is determined to exist, but no later than ten (10) days after the day the condition was discovered. Separate conditions may be described in a single report if they are closely related. Reports may be transmitted by facsimile at (202) 366-7128.

Safety related hazardous conditions include:

1. Unintended movement or abnormal loading by environmental causes, such as an earthquake, landslide, or flood, that impairs the serviceability of a pipeline.
2. Any malfunction or operating error that causes the pressure of a pipeline to rise above its maximum allowable operating pressure plus the build-up allowed for operation of pressure limiting or control devices.
3. A leak in a pipeline that constitutes an emergency.
4. Any safety-related condition that could lead to an imminent hazard and causes (either directly or indirectly by remedial action of the operator), for purposes other than abandonment, a 20 percent or more reduction in operating pressure or shutdown of operation of a pipeline.

SCUD currently does not operate any pipelines at 20% SMYS or above.

SCUD does not use, store, distribute or transport LNG.

Safety Related Conditions not requiring reporting includes:

1. A condition on a master meter system or customer owned service line.
2. A condition that becomes an incident before the reporting deadline for filing a safety related hazardous condition report.
3. A condition on a pipeline that is located more than 220 yards from any building for human occupancy or outdoor place of assembly and does not lie within an active railroad, street, highway, or paved road right-of-way.
4. A condition that is corrected by repair or replacement before the deadline for filing a safety related hazardous condition report.
5. A condition where corrosion is localized on coated or catholically protected pipe and is repaired or replaced before the deadline for filing a safety related hazardous condition report.

18.3 ***Definition of Emergency***

As used in these procedures, the word "emergency" shall include but not be limited to the following definitions:

1. The continued safe operation of a major segment of the gas distribution system is endangered, or
2. A gas leak (ignited or not) is of such magnitude that major roads or highways must be closed, or
3. A failure or malfunction of S C U D Natural Gas System exists that:
    a. Affects a large number of customers or imposes a danger to life and health of such magnitude that mobilization of all available emergency forces is required, or
    b. Necessitates immediate action to prevent or lessen property damage or save lives.
4. A fire and/or explosion have occurred near, or directly involve, the S C U D Natural Gas System.
5. A natural disaster has occurred.

Some of these situations may require invoking the Emergency Call Lists, and/or may be reportable to the TRA or PHMSA.

18.4 ***Location of Equipment and Materials (See S C U D Emergency Procedures Manual)***

Any equipment and materials that may be necessary in an emergency shall be made available at the S C U D OC. ***Any good neighbor policy or a Mutual Assistance agreement between gas systems shall be used to their best effort to cooperate and assist each other and render aid.***

18.5 ***Response***

When responding to an emergency, safe and timely arrival is the first priority. See SCUD Procedure # EMER005.

Other considerations:

- Has appropriate SCUD personnel been notified
- Is fire department needed
- Is law enforcement needed
- Have isolation valves been identified
- Has scene been secured
- Is evacuation needed
- Is aid needed from neighboring gas utilities

18.6 ***Gas Inside or Near a Building***

For the specific situation of gas detected inside or near a building, see Section 8 in this manual & Odor Call Procedures in the Procedures Manual

18.7 Blowing Gas

For the specific situation of blowing gas, see Appendix 4 in this manual.

18.8 ***Location of Equipment and Materials (See S C U D Emergency Procedures Manual)***

Any equipment and materials that may be necessary in an emergency shall be made available at the S C U D OC. ***Any good neighbor policy or a Mutual Assistance agreement between gas systems shall be used to their best effort to cooperate and assist each other and render aid.***

18.9 ***Gas Supply Failure or Emergency***

A. ***Supplier Transmission Facilities - (Leak, Low Pressure/Outage, Over Pressure)***

1. The first representative of S C U D detecting or receiving word of failure on any pipeline supplier's gas lines shall notify the Construction Manager, Maintenance Manager or the Technical Services & Engineering Manager, giving that person relevant information. The information shall be passed along to the pipeline gas supplier and pertinent S C U D employees.

2. S C U D shall maintain a current list of telephone numbers of the pipeline company officials who are required to be notified of such emergencies. See Appendix 1 "Contacts" for ETNG (Spectra Energy) phone numbers.
3. If the pipeline company requests assistance, S C U D will coordinate the dispatching of its gas crews to the scene.
4. S C U D shall adjust pressures, shift loads, curtail customers and take other action deemed necessary to protect customers, the system and minimize outages.
5. S C U D shall maintain communications with the pipeline company and keep updated reports until the emergency is cleared.

B. ***SCUD Gate & District Regulator Stations - (Leak, Low Pressure/Outage, Over Pressure)***

1. The first S C U D representative to have knowledge of an emergency at a gate or district regulator station shall report the situation to the Measurement Supervisor or Measurement Dept. If the S C U D office is the first notified, the information shall be relayed to responding personnel in the field. **See O & M Section 1(System Pressures) for a detailed description of the S C U D Regulator Stations**
2. When adequate information is available to determine that an emergency does exist, S C U D shall initiate emergency procedures.
3. The Measurement Dept. shall respond and make needed adjustment and repairs to restore the gas system to normal pressure.
4. S C U D shall shift loads, curtail customers and take other action deemed necessary to protect customers, the system and to minimize outages.
5. The highest ranking, responsible S C U D employee on the scene will coordinate activities and issue instructions necessary to bring the emergency under control. Station valves will be closed only upon proper clearance from the Measurement Dept., except where, in the opinion of the person in charge, the emergency is so severe that immediate shut down is imperative, in which case he may issue shut down instructions without such clearance. If he does so, he shall notify the proper S C U D authority at the earliest practical moment.
6. Over pressure - Regulator stations have reliefs and/or regulators set up as worker monitor to prevent over pressurization of the system. Blowing reliefs are dispatched as a broke line and responding employees are to secure the scene and assist the Measurement department as needed.
7. The on-site S C U D representative shall keep the proper S C U D authority informed of current status, take pressure and/or flow readings as needed, and advise when the emergency is under control.
8. ***Designated*** fire, police, and other public officials shall be kept abreast of current leakage and emergency procedures.
9. Upon startup, re-instatement or turning gas onto a gas line for any reason, care must be taken so that the MAOP plus allowable build up is not exceeded.
10. The S C U D President or Vice-President of Operations & Engineering shall notify the DOT and TRA, when necessary, in accordance with federal and state regulations. See Incident Reporting in the Procedures Manual.

18.10 Distribution System Failure or Emergency

The first S C U D representative to have knowledge of an emergency shall notify the S C U D Dispatcher. An S C U D representative shall be dispatched to verify the emergency, determine the extent and type of

emergency and contact the appropriate S C U D personnel. Emergency being confirmed, radio emergency procedures shall be initiated.
For after hour's emergencies, the on-call employee shall verify the emergency, determine the extent and type of emergency and contact the appropriate S C U D personnel.
The highest ranking S C U D representative shall take charge upon arriving on the scene. The person in charge will coordinate activities and issue instructions necessary to bring the emergency under control.

The primary objective will be the protection of life first and then property. This shall include the following:

1. Evacuate and secure the area. Enlist fire & police assistance as needed.
2. Request assistance of S C U D employees as needed.
3. Determine if repairs can be made without shut down.
4. If mains must be shut down, request clearance from the appropriate S C U D authority, to operate valves in accordance with valve procedures. When issuing clearances in an emergency, operate the system with a minimum of outage. If in the opinion of the person in charge, the emergency is so severe that immediate shut down is imperative, he/she may do so without clearance, but the proper S C U D authority shall be notified at the earliest practical moment.
5. Only properly authorized S C U D personnel shall operate gas system valves. Fire or police officials or other outside individuals are not authorized to operate valves or instruct others (including S C U D personnel) to operate valves.
6. Upon terminating the supply of gas to an area, each individual service must be shut off either at the meter or the service valve (if one exists).
7. Proceed as necessary in accordance with any requirements of Section 10 that may be appropriate.
8. The gas supply to the affected area shall not be restored until it is verified that each individual service is shut off. This shall entail a house to house investigation.
9. Upon startup, re-instatement or turning gas onto a line for any reason, care must be taken so that the MAOP plus allowable build up is not exceeded.
10. Upon restoring service, all S C U D piping and meters shall be purged of air and appliances relit. In the event a customer is not home when service is to be restored, the meter must be left off and locked and a notification card shall be left in a conspicuous location requesting that the customer call S C U D to arrange for restoration of service when they can be home.

The person in charge shall keep the proper S C U D authority informed as to status of the emergency and advise when the emergency has been brought under control and when service has been fully restored.

Appropriate fire, police, and other public officials shall be kept current concerning leakage and emergency procedures.

18.11 Other Emergency Responsibilities

A. In case of fire or explosion, 911 shall be called immediately. S C U D shall assist the fire department as directed.
   Current phone numbers of each Fire Department and the area served shall be made readily available to all parties concerned. Phone numbers and maps shall be provided depicting area Fire Department Stations.
B. In case of a flood, S C U D personnel shall follow the S C U D Flood Emergency Procedures. When considered necessary for evacuation and/or security purposes, the first responsible person on the scene shall have the Gas Operator notify the appropriate law enforcement agency serving the area in which the emergency occurs.
   Current phone numbers of each law enforcement agency and the area served shall be made readily available to all parties concerned.

C. See Appendix 2 for reporting forms
D. Safety Response: Administers first aid to injured person(s) to the extent of their ability.
   Assists and advises in any manner directed by the person in charge.
E. All media inquiries or requests for news releases concerning the emergency will be referred to the S C U D President.
F. Gas Investigation Committee
   Following an emergency that is reportable to PHMSA and TRA, or that is otherwise consequential; an investigative team shall conduct an investigation and submit to the appropriate authority a final report concerning the following:
   1. Cause of the emergency
   2. Extent of damages and injuries
   3. Recommended action to prevent a similar occurrence
G. A supervisors meeting shall be scheduled at least once each calendar year for the purpose of discussing emergency procedures.

18.12 Investigating Failures - 192.617

In order to minimize the possibility of recurring piping failures which result in gas leakage, S C U D shall establish and implement procedures for reporting, recording and investigating such failures. Failures shall be reported, recorded and investigated in accordance with S C U D procedures.
Any failure of the gas system resulting in a reportable incident shall be reported in accordance with section 9 of this manual.

19. PUBLIC AWARENESS & DAMAGE PREVENTION 192.616

19.1 General

There shall be a continuing education program to enable customers, the public, appropriate government agencies, and persons engaged in excavation activities to recognize a gas emergency for the purpose of reporting it to S C U D. CFR 49, 192.616

The following is a minimal list of information to be supplied:

1. ***Information about gas.***
2. ***Recognition of gas odor.***
3. ***What to do and what not to do when a strong gas odor is detected.***
4. ***Necessity of notifying 811 (Tennessee One Call System, Inc.) prior to excavating or performing excavation related activities.***
5. ***Telephone number to call for information or to report an emergency.***

Information may be conveyed to the public by radio, television, newspaper, meetings, public talks, bill stuffers, mailings, and/or handouts.

A record of the public education program and related activities shall be maintained by S C U D.

19.2 Damage Prevention

S C U D is a member of the Tennessee One-Call System (811). The telephone number is 811 or 1-800-351-1111. Anyone considering underground construction is to be encouraged to call for underground utility location at least three (3) working days prior to digging.
S C U D shall maintain a continuously updated, list of all persons requesting underground utility location in its service area.
S C U D shall raise public awareness of the one call system through newspaper, radio and television advertisements, and postings at public/government buildings and or bill stuffers.

Underground construction contractors will be routinely reminded of the one call system at pre-construction meetings and in their dealings with S C U D distribution personnel.

All requests for facility locations, including those generated within S C U D shall be directed to the Tennessee One Call System to ensure consistency in service and record keeping. Parties requesting locations may contact S C U D to check the status of their request.

Tennessee One Call System tells the locate requestor which utility companies will be notified and suggests that if there are any other known utilities in the area, those companies should be contacted directly. Tennessee One Call System further informs the caller of the date the locate is to be completed and assigns the requesting caller a number which can be used to verify the request and check the status of location work.

Gas pipeline locations are to be indicated by yellow paint and or wooden stakes and approved yellow flags. Any offset used in marking to preserve the markings shall be duly noted on the ground or stake.

If there is reason to believe underground construction will damage the gas pipeline, the locator is to notify the appropriate gas personnel. A SCUD representative will contact and coordinate with the excavator to ensure the integrity of the pipeline through inspection of work. If blasting is to be done, S C U D relies on the blasting contractor to conduct a site-specific technical evaluation of the potential impact on the pipeline. Distance from the pipeline, soil type, blast intensity and blast frequency all must be considered to

determine if the blasting will create a safety concern for the pipeline. If the pipeline is believed to have been damaged, a leak survey will be performed.

S C U D shall participate with utility companies, excavators, locators, contractors, etc. for the purpose of damage prevention and improving communications between all members of the excavating community. This is done to provide a forum of concerned professionals to have a joint effort in developing a plan to protect life and property for the people of Tennessee.

19.3 Liaison with Public Officials

Liaison shall be maintained with the appropriate fire and police organizations and the Emergency Management Agency with respect to gas emergency procedures. The purpose of such liaison shall be to acquaint the appropriate governmental agencies with S C U Ds ability to respond to a gas system emergency and to discuss the responsibilities of each agency that may respond to a gas emergency.

Gas emergency training sessions, emphasizing proper procedures to follow in a gas emergency, may be scheduled with fire and police organizations or performed in Safety Meeting sessions as required.

Liaison with the Emergency Management Agency will be coordinated by S C U D as part of the **"S C U D Emergency Response Plan."**
Liaison with local fire and police agencies will be coordinated by S C U D.
Records of meetings or training sessions held with governmental agencies for the purpose of gas emergency response shall be kept on file with the Public Awareness Plan.

20. UPRATING STEEL & PLASTIC DISTRIBUTION SYSTEMS 192.551-.557

20.1 General

This section details the steps necessary for uprating steel and plastic distribution systems. S C U D shall prepare a written uprating plan consistent with S C U D uprating procedures and suitable requirements of 49 CFR, Part 192. The plan shall be reviewed with key engineering and administrative personnel of S C U D prior to implementation. Administrative personnel shall see that the appropriate personnel in their respective departments are instructed in the proper application of this plan.

20.2 Design Criteria

S C U D shall determine the consequences of uprating a segment of a steel or plastic distribution system, taking into consideration the following:

1. The condition of the system to be uprated shall be determined by examination of historical documents, maintenance records, field checks, leakage surveys, and original design criteria (if available).
2. Any material, valves or fittings not capable of withstanding the proposed maximum allowable operating pressure shall be either removed or replaced prior to uprating the system.
3. If maintenance records indicate a history of considerable leakage, or if more than one (1) year has passed since the last leak survey, a new leak survey shall be conducted. The results of the survey shall be analyzed to determine appropriate action to be taken.
4. The proposed maximum allowable operating pressure shall be consistent with the condition of the *segment to be uprated and with applicable requirements of 49 CFR, Part 192.*
5. The test pressure and duration of the test shall be determined in accordance with requirements of the CFR, 49, and shall be specified on the uprating plans.
6. Any modifications to customers' metering facilities by the proposed uprating shall be so designed to take place jointly with the uprating plan, giving special consideration to pressure regulation to the customer.
   A. When uprating a standard pressure system, service regulators shall be proposed for installation on all service lines upstream of the meter.
   B. When uprating intermediate and medium pressure systems, existing service regulators and/or other pressure limiting devices shall be examined for maximum allowable working pressure and proper orifice size, and replacements proposed for installation as required.
   C. Customer's receiving line pressure delivery shall be contacted to determine a mutually agreeable delivery pressure, and if any regulation or limiting devices need to be install as uprating procedures are implemented.
   D. All pressure regulators and other pressure limiting devices to be utilized on service lines and meter centers on a high pressure system shall meet the requirements of 49 CFR, Part 192.197(c) "Control of the Pressure of Gas Delivered from High -Pressure Distribution Systems".

20.3 Application

The Manager of the Gas Operator, and all affected administrators shall see that the appropriate personnel are instructed in the proper application of the uprating procedures.

The uprating process shall be conducted in a systematic manner to insure adequate safety of all concerned, and to provide a minimum of outage for the customers.

All leaks discovered either before or during the uprating process shall be repaired or the leaking segment replaced, before further pressure increases are permitted. In addition, any repairs, replacements, or alterations in the segment to be uprated that are necessary for safe operation at the increased pressure shall be made prior to beginning the uprating process.

Each segment to be uprated shall be tested in accordance with the predetermined test pressure. Pressure increases shall be incremental, and shall not exceed ten (10) psig per increase or 25% of the total pressure

increase, whichever produces the fewer number of increments. **There must be at least two equal incremental increases.** The rate of each increase shall be gradual.

After each pressure increase, allowing adequate time for the system to stabilize, a leakage survey shall be conducted and each detected leak repaired before further increases are permitted.

20.4 Records

Records of investigations, work performed, and pressure tests conducted in connection with up rating a segment of the gas system shall be retained by S C U D for the life of the segment.

21. MAOP 192.619-.623

Unless the requirements set forth in this section have been met, no segment of the gas system may be operated at a pressure greater than the previously established maximum allowable operating pressure (MAOP).

In no case shall the maximum allowable operating pressure of a system be raised to a value higher than that permitted in 49 CFR, Part 192 for a new line constructed of the same materials and in the same class location.

The system in which the pressure is to be increased shall be isolated from any adjacent system that will continue to be operated at a lower pressure.

Separation valves shall not be permitted unless an additional safety device is used to prevent accidental over pressuring, (regulators, relief valves and or securities).

Upon startup, re-instatement or turning gas onto a line for any reason, care must be taken so that the MAOP plus allowable build up is not exceeded.

All new low pressure mains & services must be tested to establish an MAOP of at least 60 lbs.
All new medium pressure mains & services must be tested to establish an MAOP of at least 285 lbs.
All new high pressure mains & services must be pressured to establish an MAOP of at least 553 lbs.

In determining the MAOP, all mains & services shall assume a Class 3 or Class 4 location factor (1.5)

22. CUSTOMER NOTIFICATION

For the purpose of this notification, customer owned piping is defined as all piping downstream of the gas meter.
S C U D does not maintain customer owned piping. Therefore, S C U D must notify affected customers once, in writing, of the following information:

1. S C U D does not maintain the customer's piping.
2. If the customer's piping is not maintained, it may be subjected to the potential hazards of corrosion and leakage.
3. Buried gas piping should be:
   a. Cathodically protected if steel pipe is used.
   b. Periodically inspected for leaks
   c. Periodically inspected for corrosion if steel pipe is used; and
   d. Repaired if any unsafe condition is discovered.
4. When excavating near buried gas piping, the piping should be located in advance, and excavation done by hand.
5. Above ground piping should be:
   a. Periodically inspected for leaks.
   b. Periodically inspected for atmospheric corrosion.
   c. Periodically inspected for damage, stressed or unsafe conditions.
   d. Repaired if any above conditions are found.
6. Plumbers and heating contractors may locate, inspect, and repair the customer's buried piping.

Such notification shall be made no later than August 14, 1996 or ninety (90) days after the customer first r eceives gas at a location where such piping has been identified. S C U D policy is to provide notification at the time of service application.

A copy of the notice currently in use may be found in appendix 3.

23. CONTROL ROOM MANAGEMENT 192.631

S C U D does not maintain a Control Room or employ a controller.

24. OPERATOR QUALIFICATION (OQ) 192.801

S C U D utilizes a third party program to meet the requirements for an Operator Qualification (OQ) program. This program consists of classroom and/or computer based training (CBT) for knowledge and performance evaluations for assessment of skills. See the OQ manual.

25. DISTRIBUTION INTEGRITY MANAGEMENT PROGRAM (DIMP) 192.1001

See the Distribution Integrity Management Plan (Plan) for S C U D (Sevier County Utility District). This Plan is intended to meet the requirements of 49 CFR Part 192, Subpart P and covers the entire S C U D system. S C U D utilizes an industry standard third party program to meet these requirements.

This Plan was developed based on the design, construction, operation and maintenance records of S C U D, including: incident and leak history, corrosion control records, continuing surveillance records, patrolling records, maintenance history, and excavation damage experience, as well as the judgment and knowledge of S C U D employees.

APPENDIX 1

CONTACTS

TENNESSEE PUBLIC UTILITY COMMISSION (TPUC)

	Phone	Phone	Fax
Office	**800-342-8359**	**615-741-2904**	**615-741-1228**

Chief			
	Phone	**Cell**	**Email**
Annette Ponds	**615-770-6859**	**615-476-4716**	**annette.ponds@tn.gov**

Gas Pipeline Safety Engineers			
	Phone	**Cell**	**Email**
Pete Hut	***615-770-6862***	***615-969-2042***	**pete.hut@tn.gov**
Shinisha Freeman	***615-770-6860***	***615-308-1489***	**shinisha.freeman@tn.gov**
Travis Aslinger	***615-770-6864***	***615-202-9848***	**travis.aslinger@tn.gov**
Phil Hendricks	***615-770-6861***	***615-969-1768***	**phil.hendricks@tn.gov**
Tim Thompson	***615-770-6865***	***615-306-9165***	**tim.thompson@tn.gov**
Regina Brown	***615-253-4086***	***615-587-9150***	**regina.a.brown2@tn.gov**

Administrative Assistant			
	Phone		**Email**
Vicky Nelson	***615-770-6863***		**vicky.nelson@tn.gov**

National Contact			
	Phone		
Washington DC Response Center	**800-424-8802**		

Fire Departments

Emergency		911
Blount County - Station 7		865-977-8002
Caton's Chapel		865-428-1177
English Mountain		865-429-3729
Gatlinburg		865-436-5112
Northview		865-933-9564
Pigeon Forge		865-429-7381
Pittman Center		865-436-9684
Rural Metro - Knoxville		865-573-5779
Sevier County		865-428-5111
Sevierville		865-453-9276
Seymour - Chapman Hwy		865-573-7475
Seymour - Hwy 411		865-984-7489
Walden's Creek		865-453-3123
Wears Valley		865-428-4232

Law Enforcement

Emergency		911
Blount County		865-273-5000
Gatlinburg		865-436-5181
National Park Service		865-436-1294
Pigeon Forge		865-429-9063
Pittman Center		865-436-5499
Sevier County		865-453-4668
Sevierville		865-453-5506

Homeland Security

Ken Garner		865-868-1753 Cell 865-680-4924

Emergency Management Agency

Joe Ayers	Director	865-453-4919
	Asst Director	865-453-4920
Rodger Ogle	Operations Officer	865-453-4922
Todd Spence	Communications Officer	865-453-4921
TEMA/East		800-553-7374
FEMA		202-646-2500

Ambulance

Emergency		911
Blount County - Rural Metro		865-982-2500
Gatlinburg		865-436-5112
Kodak/Northview		865-933-9564
Pigeon Forge		865-429-7381
Sevier County		865-453-3248
Seymour		865-573-1471

Hospital

LeConte Medical Center		865-446-7000

East Tn Natural Gas - Spectra Energy

Gas Control	24 Hr Emergency	888-231-2294
Office - Sevierville		865-453-5772
Office - Kingsport		423-349-4121
Mohan Prasad	Compressor Station/Pipeline	865-388-3610
David Lawson	Compressor Station/Pipeline	865-388-9502
John Harris	Supervisor	540-230-4212
Tim Ferguson	Area Manager	276-623-6292

TN 811 (Tennessee One Call)

TN 811		811
TN 811		800-351-1111
TN 811		615-366-1987
Bill Turner	Executive Director	615-366-1987 Ext 7122
Bill Berzins	IT/GIS	615-366-1987 Ext 7126
June Bradford	Call Center Manager	615-366-1987 Ext 7183

Cities/Counties/Utilities

Appalachian Electric		865-475-2032
Atmos Energy		865-379-9290
AT&T	Brian Carrado	865-789-1383
Blount County		865-982-4652
Charter		888-438-2427
Comcast		865-453-2739
Gatlinburg City		865-436-1400
Gatlinburg Water/Sewer		865-436-4681
Jefferson Cocke Utility		423-623-3069
Knox Chapman Utility		865-577-4497
KUB		865-524-2911
National Park Service - Admin		865-436-1208 or 1221
National Park Service - Maint		865-436-1302
Pigeon Forge City		865-453-9061
Pigeon Forge Water/Sewer		865-429-7312
Pittman Center		865-436-5499
SCES		865-453-2887
Sevier County Hwy Dept		865-453-3452
Sevier County Water		865-774-3623
Sevierville City		865-453-5504
Sevierville Water/Sewer		865-453-5522
Shady Grove Utility		865-397-3790
Webb Creek Utility		865-430-3640

Airport

Gatlinburg/Pigeon Forge		865-453-8393

APPENDIX 2
Forms

Location # _____ **S·C·U·D** **Date On Scene** _____

Date Notified _____ **ODOR REPORT** **Time On Scene** _____

Time Notified _____ **865-453-3272** **Time Investigation Complete** _____

Meter # _____ **ERT #** _____ **Reading** _____

Name_____ Caller_____

Address_____City/Town_____

Reported Odor Location_____

Area/s Checked_____

_____No Measurable Natural Gas or Carbon Monoxide (CO) Found Checked with CGI/CO Detector_____

Natural Gas-in-Air Found - Reading_____% Location/Area_____

Natural Gas Leak Found - Reading at Leak_____% ***Leak: Above Ground_____ Below Ground_____***

Leak Location/Source_____

CO-in-Air Found - Reading_____PPM Location/Area_____

CO Leak Found - Reading_____PPM CO Symptoms Chart Given_____

CO Leak Location & Source_____ _____

Action Taken

Repaired_____ Valved Off Equipment/Piping_____ Disconnected, Line Plugged_____ Red Tagged_____

Turned Over To: Measurement Dept_____ Underground Maintenance Dept_____ Name_____

Locked Meter Off_____ Other_____

Pressure Test Needed_____ Repair or Other Details:_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

If a specific piece of equipment or gas piping is determined to be the source of emeission, DO NOT use that equipment or gas piping until necessary repairs have been made. Call SCUD for a recheck after repairs are made.

DISCLAIMER: Sevier County Utility District (SCUD) checks air quality for natural gas and carbon monoxide (CO) strictly for the safety, piece of mind, and as a service to our customers. We make the best judgments possible on the spot, and in case of emergency or above standard reading of natural gas or carbon monoxide (CO) emission, take appropriate steps to secure the situation, including referral to the local fire department for further emergency action. Such action may include temporary interruption of service to one or all of the gas consuming appliances on the premises. We reserve the right to check all the equipment or piping involved to be sure of its repair and proper operation before gas service is restored to this premises. We do not diagnose nor repair problems with the gas piping or equipment.

I have read and understand the above conditions and explanations. I further understand that the SCUD cannot prevent re-entry into the above building, but have made me aware of the precautions and recommendations they have made. If I decide to disregard the advice given, I will hold SCUD and any employee blameless. I understand that refusals to sign this document may also result in temporary termination of gas services, due to possible unsafe conditions.

Customer/Complaintant_____ Customer Not Home_____

SCUD Employee/s _____

SCUD DAMAGED LINE REPORT - FIELD USE

LEAK ID #	LOCATION #
DATE:	W O #
TIME REPORTED:	TIME ON SCENE:
TIME FINISHED:	TIME GAS OFF:

SERVICE ADDRESS:

OPERATOR'S NAME:

GAS UTILITY/GAS CONTRACTOR	MUNICIPALITY	UTILITY	HOME OWNER	CONTRACTOR	FARMER
LANDSCAPER	OTHER?				

PIPE LOCATED? YES NO	LOCATED PROPERLY? YES NO
811 TICKET #	811 INFO GIVEN?

PERSON/COMPANY RESPONSIBLE:

ADDRESS

PHONE

CONTRACTOR COMMENTS

CONTRACTOR SIGNATURE DATE:

SCUD EMPLOYEE DATE:

PIPE SIZE	HOLE SIZE	COMPLETELY SEVERED	FOOTAGE REPLACED
EXCESS FLOW VALVE? YES NO			

GAS TERMINATION DISCRIPTION:

UNITS RESPONDING

2-Matt B	22-Cedar H	37-Randy L	54-Nick L	79-Josh D	93-Daniel P	
10-Alan D	23-Greg R	40-Darren M	56-Randy H	82-Dean L	94-Gabe S	
11-Marty M	26-Pepper H	41-Rob K	58-Phil T	85-Scotty M	96-Nathan B	
12-Randy U	29-Larry B	42-Ricky J	62-Steve A	86-Seth R	97-Garrett J	
15-Joey A	31-Kevin Fl	43-Kevin C	64-Andrew H	89-Seth L	99-Will W	
18-Jon B	32-Russell Q	50-Kenny T	69-Jay R	91-Bently M	101-Bo S	
20-Bob T	35-Brian D	51-Mark K	78-Jeff T	92-Michael F	110-Chase E	

REPAIR LABOR

UNIT #	Reg Hrs	OT Hrs

UNIT #	Reg Hrs	OT Hrs

REPAIR DISCRIPTION:

MATERIALS USED:

PROCEDURAL CORRECTIONS NEEDED:

INCIDENT REVIEWED BY:

DATE:

*Date*_____ ***S C U D SAFETY CHECKLIST*** *Time*_____

Must be completed by employee present at the scene

*Location #*_____ *Service Order #*_____ *Work Order #*_____

Job Being Performed _____

*SCUD Employees/Contractors*_____

_____

Address _____

Physical Location of Work _____

Work Site/Scene Secure/Safe for Public & SCUD: *Yes*____ *No*____ ***CGI*** *: Yes*____ *No*____ *N/A*____

IGNITION SOURCES CONTROLLED: *Yes*____ *No*____ *N/A*____

*Traffic Control: Yes*____ *No*____ *N/A*____ *Signs/Cones: Yes*____ *No*____ *N/A*____

*Hole/Ditch Safe - Yes*____ *No*____ *Proper Entrance/Exit for Ditch – Yes*____ *No*____

Static Suppression: *Spray*____ *Grounding*____ *N/A*_____

Fire Extinguisher: *Yes*____ *No*____ *N/A*____ *Off the truck: Yes*____ *No*____ *Fire Dept*____

Broke Line/Leak: Turn Out Gear: Yes____ No____ N/A____

Valve Lock/Out Tag/Out: Valve Turned Off: Yes____ No____ Valve Continuously Manned: Yes____ No____

Wrench removed from valve, secured and red valve lid installed: Yes____ No____ Eng Dept Notified: Yes____ No____

Paperwork: Broke Line Form____ 811 Info Given____ Odor Form____

Purging*:* Main____ Service Line___ Reading_____% Natural Gas

Wind direction considered & monitored ____

Purge Point is smaller than the pipe being purged ____

Purge Point at least 7 ft high ____ **(For mains or high flow rate purging)**

Purge point a minimum of 10 from ignition sources ____ N/A ____ **(For mains or high flow rate purging)**

Purge direction is away from structures, people, ignition sources and confined spaces ____

Valve or squeeze off used for purging is manned until purging is stopped ____

PPE*:* Seat Belts Worn: Yes____ No____ No Seat Belts on Equipment____

Hard Hats: Yes____ No____ N/A____ Safety Vests: Yes____ No____ N/A____

Safety Glasses/Face Shield: Yes____ No____ N/A____

Comments: _____

_____

_____

_____

_____

S C U D Employee _____ Unit # _____

SEVIER COUNTY UTILITY DISTRICT
SAMPLE EXPOSED PIPE REPORT

Status	Active	
Exposed Pipe Report ID	EXP-PF-07122016-01	
Date of Report	7/13/2016 10:32 AM	
Reason Exposed	Leak	
Leak ID (if applicable)	PF-04272016-04	
Work Order (if applicable)		
Location Number (from GIS)		208251
CIS Customer Name (from GIS)	SONIC OF PIGEON FORGE LLC	
Address (from GIS)	PARKWAY 2246	
City (from GIS)	Pigeon Forge	
Meter Number (from GIS)	N315683	
Riser Type (from GIS)	Anodeless	
GIS Area (from GIS)	Pigeon Forge	
Leak Survey Area (from GIS)	PF 02	
Operating Pressure (PSIG)		160
Surface Type	Asphalt Road	
Soil	Clay	
Pipe Size (from GIS)		6
Depth of Pipe	4'-0"	
Exposed Length	Less than 2 ft	
Pipe Coating	Coal Tar	
Pipe Coating Condition	Good	
Pipe Coating Repaired	Yes	
Pipe Condition - Rust	No Rust	
Pipe Condition - Pitting	No Pits	
Max Corrosion Pit Depth (if applicable)		
Pipe Condition - Other	Good Not Accessible	
Internal Corrosion		-1.48
P/S On Reading (V)	Randy Hodge	
Drawing		
Picture Attachment		
Comments		
X Coordinate (from GIS)		2686230.886
Y Coordinate (from GIS)		548430.3342
Asset ID		750003743
Operational Area	SCUD > Pigeon Forge	

ODOR CALLS

If the caller states the odor or hissing/blowing is located where someone is digging treat the call as a broke line.

If the caller states the odor is near the meter and they hear hissing, ask if anyone is digging near the meter or if the meter has been damaged. If yes, treat the call as broke line. If no, treat the call as an odor.

If the caller states the odor is inside and they hear hissing/blowing, request at least one unit respond emergency traffic.

DATE: _____

Phone # NOT at location of odor. _____

Phone # on caller ID: _____

Callers Name: _____ On Site Contact Name: _____

Odor Reported: Indoor Outdoor _____ *(mark one)*

Where did the caller state the odor was coming from? _____

Is anyone currently at the address where the odor is reported? Yes No _____ *(mark one)*

If the odor is indoor and no one is at the address, advise them that the gas will be shut off & they can call when they return to the address

Name of Business/Residence: _____

Address of Odor: Street: _____

City: _____

Subdivision: _____

Pagers/Phones: Front office "805" to Odor Group

All Times must Include AM or PM

Time Call Received: _____

Time Dispatched: _____

Units Responding: _____

Time Units Responded: _____

Created Service Order? Yes No _____ *(mark one)* Service Order # _____

Employee/s Name or Signature _____

BROKEN LINE INFORMATION

Date: _____ Time Call Received: _____

Is it Blowing? Yes No *(Please circle one)*

Caller's Name: _____ Phone Number on Caller ID _____

Name of contact person on site where broke line is reported: _____

Address of Broken Line:

Street: _____

City: _____

Subdivision: _____

Nearest Landmark: _____

Where on site is broken line (behind building, side of building, road, driveway, etc.) _____

CALL 911 TO DISPATCH FIRE DEPARTMENT!!!

(Front office "805" to ALL Units)

Note Pager (Groups: Broke line 1 & 2)

Units Responding: _____

Time on Scene: _____ AM PM

Time Gas is off: _____ AM PM

Broke Line text sent at_____ AM PM by: _____

Gas Off text sent at_____ AM PM by: _____

Employee's Signature: _____

APPENDIX 3

CUSTOMER NOTIFICATIONS

SCUD is responsible for the main gas line at the road and the gas piping running up to and including the gas meter.
The customer is responsible for all gas piping from the outlet of the meter up to and including the gas appliances.

MAINTENANCE

- The customer is to maintain all piping after the outlet of the meter to prevent corrosion, leaks or damage.
- Customer owned buried gas piping should be:
  - Periodically inspected for leaks.
  - Periodically inspected for corrosion if piping is metallic. Metallic pipe must be cathodically protected to prevent corrosion. SCUD may be contacted for cathodic protection options if needed.
  - Repaired if any unsafe condition is found.
- When excavating near buried gas piping, the piping should be located in advance, and the excavation should be done by hand. SCUD is responsible for locating its own lines after TN 811 has been properly notified. The customer is responsible for locating their own lines. The installer, plumber, or heating contractor may be able to assist with locating and repairing the customer's gas piping.

INSTALLATION

- *No mechanical fittings are allowed underground.*
- *Gas piping must not be in contact with any chemicals that may cause corrosion or damage.*

1. **Black Iron or Galvanized Pipe - CANNOT** be installed underground (even if it is sleeved) or in contact with the ground or standing water**.**
2. **Copper Tubing -** May be installed underground but all underground joints must be silver soldered.
3. **CSST (Corrugated Stainless Steel Tubing):**
   - May be used underground if sleeved in PVC or if direct burial CSST is used.
   - The installation must be done in accordance with manufacturer's procedures.
   - **No** fittings may be installed underground.
4. **PE-Polyethylene (Plastic) – CANNOT** be used above ground.
   - High or medium density PE pipe may be used but must be welded (fused).
   - The welder must be certified to weld which ever type of PE pipe is being used. SCUD is not qualified to weld medium density pipe.
   - Anode-less risers must be used to turn up out of the ground.
   - PE pipe shall not be installed under a building slab or building.

Buried piping must be a minimum of 12 inches deep. See **404.10 IFGC.** For exception see **404.10.1 IFGC**
Buried gas piping shall not penetrate building foundation walls at any point below grade. Gas piping shall enter and exit a building at a point above grade and the annular space between the pipe and the wall shall be sealed.**404.4 IFGC**

*Natural gas installations completed prior to June 1, 2014 are grandfathered but black iron and galvanized pipe must be properly cathodically protected if it is to be in contact with the ground. **See 404.9, 404.9.1 and 404.9.2 IFGC.** The owner is responsible to provide cathodic protection for any steel piping that is underground. SCUD may be contacted for cathodic protection options if needed.

*Propane switch outs are grandfathered, but the owner is responsible to provide cathodic protection for any black iron or galvanized piping that is underground. SCUD may be contacted for cathodic protection options if needed. A hold harmless must be signed for any piping that cannot be inspected.

S·C·U·D

SEVIERCOUNTYUTILITYDISTRICT

453-3272

This letter is to inform you about Excess Flow Valves (EFVs). The EFV is installed in the service line and reduces the flow of gas to the structure if the service line is broken, only allowing a small amount of gas to seep thru the valve. When the line is hit you will only hear a brief rush of gas before the EFV activates. The gas smell from the gas seepage may come and go depending on the wind and amount of cover over the line.

EFVs have been available since the late 80s but were only installed if requested by the customer.
Beginning in 2009 the Federal Department of Transportation (DOT) required an EFV be installed on all new and rehabbed residential service lines.

When a gas line is hit but is not blowing please do not assume that it is dead or abandoned. Call us and let us know that a line was hit but it is not blowing and we will determine if there is an excess flow valve on it or if it is abandoned. Our gas lines may be black or yellow plastic or steel.

If you are digging, plowing or trenching be sure to call 811 to have the utilities located before starting and call 453-3272 anytime you smell gas.

If you have any questions, feel free to give us a call.

Thank You,

APPENDIX 4

UNCONTROLLED RELEASE OF GAS (BLOWING GAS)

The safety of yourself and the public is the number one priority.

SECURE THE SCENE FIRST!

EXTINGUISH IGNITION SOURCES

RELIEF RELIEVING

Contact the Measurement Department Supervisor and/or Measurement Department Personnel

BROKEN GAS LINE

BROKE LINE CALLS MUST GO THRU THE OFFICE OR 911 DURING WORKING HOURS! If you receive a broke line phone call, tell the caller to call 911, then you should relay the information you received (town, street, address, etc…), to the office.

(1) Broke line Definitions:

A. If customer says they hear gas blowing from a line or meter.
B. If customer smells odor where digging or grading is being done.

(2) In either situation listed above:

A. During working hours:

1. Dispatcher will call 911
2. Employees with turnout gear should keep the gear in the truck in which they are working.
3. All Service Department, Underground Maintenance, and Measurement & Control employees must call in their location and if they are responding, over the radio. When available, four (4) employees need to respond with at least three (3) employees having turnout gear with them.
4. The closest available outside operations employee will call in their location and respond to the incident to secure the scene and assess the situation and observe for potential ignition sources.
5. Use a CGI, when available, to determine a gas free area and keep everyone back approximately 50 feet from the gas free area, if possible.
6. Do not suit up until back up arrives. The supervisor, foreman or senior employee will not suit up, if possible, and will monitor and coordinate the scene. Fire department may assist in securing and monitoring the scene.
7. **DO NOT WORK BROKE LINE ALONE. The scene must be kept secure. Sufficient fire or SCUD Personnel must be present before attempting to stop the flow of gas.**

B. **After working hours:**

1. The On Call guy should verify that 911 has been called. If not, call 911 and request the fire department to respond.
2. Verify, that either the Underground Maintenance Foreman, Service Department Forman, Measurement & Maintenance Supervisor, Director of Operations or one of the personnel in the service department have been notified. If available, four (4) employees need to respond with three (3) having turnout gear with them.
3. The first one on the scene must secure the area and observe for potential ignition sources.
4. **Use a CGI, when available, to determine a gas free area and keep everyone back approximately 50 feet from the gas free area, if possible.**

5. Do not suit up until back up arrives. The supervisor, foreman or senior employee will not suit up, if possible, and will monitor and coordinate the scene. Fire Department may assist in monitoring and securing the scene.
6. DO NOT WORK BROKE LINE ALONE. The scene must be kept secure. Sufficient fire or SCUD personnel must be present before attempting to shut off gas flow.

(3) OPTIONS FOR STOPPING GAS FLOW:

THE NUMBER OF CUSTOMERS LOST IS NOT AS IMPORTANT AS YOUR WELL BEING! Consider all your options for stopping the gas flow.

Before turning any valves, consult either the Underground Maintenance Supervisor, Measurement Supervisor, Service Department Foreman, Director of Operations or Service Department Personnel.

Option A – Isolate using valves, if loop fed.
Option B – Valve or squeeze off feed (in gas free area when possible).
Option C – Build bypass and squeeze off both sides.
Option D – Stop the gas flow in the hole or ditch at the point of the break. ***This can only be done after receiving approval from either the Underground Maintenance Foreman, Service Department Foreman, Measurement & Maintenance Supervisor, Director of Operations or SR. VP of Engineering & Operations*.**

(4) All meters involved must be turned off before restoring gas service.

(5) If customer is not home, the meter must be locked off and door hangers left. Get the meter number and address of any meter locked off and turn it into the dispatcher.

(6) Fill out a broke line report.

APPENDIX 5

WELDING & FUSION

S C U D STEEL WELDING & PLASTIC FUSION PROCEDORES

GENERAL

192.225 Welding Procedure

a) Welding procedures must be qualified under section 5, section 12, or Appendix A of API Std 1104 (incorporated by reference, *see* § 192.7). The quality of the test welds used to qualify welding procedures must be determined by destructive testing in accordance with the referenced welding standard(s) or section IX ASME Boiler and Pressure Vessel Code (BPVC) (incorporated by reference, *see* §192.7) to produce welds which meet the requirements of this subpart. The quality of the test welds used to qualify welding procedures must be determined by destructive testing in accordance with the referenced welding standard(s).

S C U D procedures were qualified under API 1104.

b) Each welding procedure must be recorded in detail, including the results of the qualifying tests. This record must be retained and followed whenever the procedure is used.

See the S C U D Welding Manual for verification of the requirements stated above.

192.227 Qualification Of Welders

a) Except as provided in paragraph (b) of this section, each welder or welding operator must be qualified in accordance with section 6, section 12, or Appendix A of API Std 1104 (incorporated by reference, *see* §192.7) or section IX of ASME Boiler and Pressure Vessel Code (BPVC) (incorporated by reference, *see* §192.7). However, a welder or welding operator qualified under an earlier edition than the edition listed in §192.7 may weld but may not re-qualify under that earlier edition.

b) A welder may qualify to perform welding on pipe to be operated at a pressure that produces a hoop stress of less than 20 percent of SMYS by performing an acceptable test weld, for the process to be used, under the test set forth in section I of Appendix C of this part. Each welder who is to make a welded service line connection to a main must also first perform an acceptable test weld under section II of Appendix C of this part as a requirement of the qualifying test.

S C U D welder is qualified under Appendix C. See the SCUD Welding Manual.

192.229 Limitations On Welders & Welding Operators

a) No welder or welding operator whose qualification is based on nondestructive testing may weld compressor station pipe and components.

b) A welder or welding operator may not weld with a particular welding process unless, within the preceding 6 calendar months, the welder or welding operator was engaged in welding with that process.

c) A welder or welding operator qualified under §192.227(a)–

1) May not weld on pipe to be operated at a pressure that produces a hoop stress of 20 percent or more of SMYS unless within the preceding 6 calendar months the welder or welding operator has had one weld tested and found acceptable under either section 6, section 9, section 12 or Appendix A of API Std 1104 (incorporated by reference, *see* §192.7). Alternatively, welders or welding operators may maintain an ongoing qualification status by performing welds tested and found acceptable under the above acceptance criteria at least twice each calendar year, but at intervals not exceeding 7½ months. A welder or welding operator qualified under an earlier edition of a standard listed in §192.7 of this part may weld, but may not re-qualify under that earlier edition; and
2) May not weld on pipe to be operated at a pressure that produces a hoop stress of less than 20 percent of SMYS unless the welder or welding operator is tested in accordance with paragraph (c)(1) of this section or re-qualifies under paragraph (d)(1) or (d)(2) of this section.

d) A welder or welding operator qualified under §192.227(b) may not weld unless–

1) Within the preceding 15 calendar months, but at least once each calendar year, the welder or welding operator has re-qualified under §192.227(b); or
2) Within the preceding 7½ calendar months, but at least twice each calendar year, the welder or welding operator has had–
   (i) A production weld cut out, tested, and found acceptable in accordance with the qualifying test; or
   (ii) For a welder who works only on service lines 2 inches (51 millimeters) or smaller in diameter, the welder has had two sample welds tested and found acceptable in accordance with the test in section III of Appendix C of this part.

S C U D welder qualifies once each calendar year but not to exceed 15 months.

192.231 Protection from weather.

The welding operation must be protected from weather conditions that would impair the quality of the completed weld. *Wind guards may be needed during windy weather.*

192.233 Miter joints. – *S C U D does not do miter joints, fittings are used.*

192.235 Preparation for welding.

Before beginning any welding, the welding surfaces must be clean and free of any material that may be detrimental to the weld, and the pipe or component must be aligned to provide the most favorable condition for depositing the root bead. This alignment must be preserved while the root bead is being deposited.

192.241 Inspection and test of welds.

(a) Visual inspection of welding must be conducted by an individual qualified by appropriate training and experience to ensure that:
   (1) The welding is performed in accordance with the welding procedure; and
   (2) The weld is acceptable under paragraph © of this section
   (3) The acceptability of a weld that is nondestructively tested or visually inspected is determined according to the standards in section 9 or Appendix A of API Std 1104 (incorporated by reference, *see* §192.7). Appendix A of API Std 1104 may not be used to accept cracks.

192.245 Repair or removal of defects. – *S C U D does not repair welds; the weld must be cut out.*

S C U D uses socket welds on pipe smaller than 2-3/8 " O.D.

For steel butt weld certification, test samples must be from 2-3/8 O.D. pipe and the largest diameter steel pipe we have in the system.

The welding area shall be of suitable size and condition for the welder to perform the necessary welds in a safe and proper manner.

The welding site must be secured and monitored if combustible gases may be present. No welding or cutting may be done on a pipe containing a combustible mixture.

Filler metals and fluxes shall be protected from deterioration and excessive moisture changes. Welding rods or other material which shows signs of damage or deterioration shall not be used

Visual, non-destructive and destructive inspection standards may be used, where allowed in these procedures, to determine the weld quality.

PLASTIC PIPE FUSION

GENERAL

192.281 Plastic pipe.

(a) *General*. A plastic pipe joint that is joined by heat fusion may not be disturbed until it has properly set. Plastic pipe may not be joined by a threaded joint or miter joint.

(b) Solvent cement joints. *SCUD does not use solvent cement.*

(c) Heat-fusion joints. Each heat-fusion joint on plastic pipe must comply with the following:

(1) A butt heat-fusion joint must be joined by a device that holds the heater element square to the ends of the piping, compresses the heated ends together, and holds the pipe in proper alignment while the plastic hardens.

(2) A socket heat-fusion joint must be joined by a device that heats the mating surfaces of the joint uniformly and simultaneously to essentially the same temperature.

(3) An electrofusion joint must be joined utilizing the equipment and techniques of the fittings manufacturer or equipment and techniques shown, by testing joints to the requirements of 192.283(a)(1)(iii), to be at least equivalent to those of the fittings manufacturer.

(4) Heat may not be applied with a torch or other open flame.

(d) Adhesive joints. *SCUD does not use adhesive.*

(e) Mechanical joints. *SCUD does not use mechanical fittings.*

192.283 Plastic pipe; Qualifying joining procedures.

(a) Heat fusion joints. Before any written procedure established under 192.273(b) is used for making plastic pipe joints by a heat fusion method, the procedure must be qualified by subjecting specimen joints made according to the procedure to the following tests:

(1) The burst test requirements of–

(i) In the case of thermoplastic pipe, paragraph 6.6 (Sustained Pressure Test) or paragraph 6.7 (Minimum Hydrostatic Burst Test) of ASTM D2513–99 for plastic materials other than polyethylene or ASTM D2513–09a (incorporated by reference, *see* 192.7) for polyethylene plastic materials;

(ii) In the case of thermosetting plastic pipe, paragraph 8.5 (Minimum Hydrostatic Burst Pressure) or paragraph 8.9 (Sustained Static Pressure Test) of ASTM D2517 (incorporated by reference, *see* 192.7); or

(iii) In the case of electrofusion fittings for polyethylene (PE) pipe and tubing, paragraph 9.1 (Minimum Hydraulic Burst Pressure Test), paragraph 9.2 (Sustained Pressure Test), paragraph 9.3 (Tensile Strength Test), or paragraph 9.4 (Joint Integrity Tests) of ASTM F1055 (incorporated by reference, *see* 192.7).

(2) For procedures intended for lateral pipe connections, subject a specimen joint made from pipe sections joined at right angles according to the procedure to a force on the lateral pipe until failure occurs in the specimen. If failure initiates outside the joint area, the procedure qualifies for use; and,

(3) For procedures intended for non-lateral pipe connections, follow the tensile test requirements of ASTM D638 (incorporated by reference, *see* 192.7), except that the test may be conducted at ambient temperature and humidity. If the specimen elongates no less than 25 percent or failure initiates outside the joint area, the procedure qualifies for use.

See the following letter and report from Performance Pipe

(b) Mechanical joints. *SCUD does not use mechanical joints.*

(c) A copy of each written procedure being used for joining plastic pipe must be available to the persons making and inspecting joints.

(d) Pipe or fittings manufactured before July 1, 1980, may be used in accordance with procedures that the manufacturer certifies will produce a joint as strong as the pipe.

192.285 Plastic pipe: Qualifying persons to make joints.

(a) No person may make a plastic pipe joint unless that person has been qualified under the applicable joining procedure by:
(1) Appropriate training or experience in the use of the procedure; and
(2) Making a specimen joint from pipe sections joined according to the procedure that passes the inspection and test set forth in paragraph (b) of this section.

(b) The specimen joint must be:
(1) Visually examined during and after assembly or joining and found to have the same appearance as a joint or photographs of a joint that is acceptable under the procedure; and
(2) In the case of a heat fusion;
(i) Tested under any one of the test methods listed under 192.283(a) applicable to the type of joint and material being tested;
(ii) Examined by ultrasonic inspection and found not to contain flaws that would cause failure; or
(iii) Cut into at least three longitudinal straps, each of which is:
(A) Visually examined and found not to contain voids or discontinuities on the cut surfaces of the joint area; and
(B) Deformed by bending, torque, or impact, and if failure occurs, it must not initiate in the joint area.

(c) A person must be re-qualified under an applicable procedure once each calendar year at intervals not exceeding 15 months, or after any production joint is found unacceptable by testing under 192.513.
(1) Does not make any joints under that procedure; or
(2) Has 3 joints or 3 percent of the joints made, whichever is greater, under that procedure that are found unacceptable by testing under §192.513.

(d) Each operator shall establish a method to determine that each person making joints in plastic pipelines in the operator's system is qualified in accordance with this section.

192.287 Plastic pipe: Inspection of joints.

No person may carry out the inspection of joints in plastic pipes required by 192.273 (c) and 192.285(b) unless that person has been qualified by appropriate training or experience in evaluating the acceptability of plastic pipe joints made under the applicable joining procedure.

O & M REVISIONS

10-25-16

- Changed appendix 5 to Welding & Fusion General
- Made Revisions the very last section in the very back of the manual
- Updated DOT web addresses in section 9 – Reporting
- 191.23 & 25 Put safety related condition info in section 9 – Reporting
- 192.605 Added statement about making maps, records, and history available to appropriate operating personnel in - General
- 192.605 Added statement about startup & MAOP in section 21 – MAOP, 1 – System Pressure, 18 – Emergency Procedures
- 192.605 Added statement about review of work done by SCUD personnel and documenting meetings in - General
- 192.613 Addressed Surveillance in section 12 – Distribution Piping Installation & Maintenance
- 192.613 Added info about conditions & repairs requiring MAOP reduction in section 12 - Distribution Piping Installation & Maintenance
- 192.615 SCUD will make Emergency manual available to appropriate personnel – General & section 18 – Emergency procedures
- 192.615 SCUD will review activities after emergencies – Section 18 – Emergency procedures
- 192.739 Added specifics about regulators will be properly installed – section 4 – Regulators
- 192.751 Added info about preventing accidental ignition in section 12 – Distribution Piping Installation & Maintenance
- 192.225-245 Added welding info to Appendix 5
- 192.281-287 Added fusion info to Appendix 5
- 192.461 Added statements about pipe coating in section 6 – Corrosion Control
- 192.481 Added statements about atmospheric corrosion in section 6 – Corrosion Control
- 192.491 Added statement about corrosion control record retention in section 6 – Corrosion Control
- 192.721 Added statement about patrolling bridge crossing frequency
- Added statement that each meter must be leak surveyed during appropriate leak survey in section 12 – Distribution Piping Installation & Maintenance

8-10-16

Changed 12.1 - Patrolling to Surveillance and put Patrolling, Exposed Pipe Report, CP Survey and Leak Survey under that section. Added Exposed Pipe report to Appendix 2.
Changed Trench Safety to Excavation Safety in Section 15

9-24-15:

Added Part D to Section 10 – Valves
Removed reference to procedures manual from 9.1 - General – first paragraph.
Updated Damaged Pipe Report
Added Appendix 5 – Revisions.

10-9-14:

10-10-13: