

1-E Safety

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1.0 SCOPE

This chapter covers personal protective equipment (PPE) requirements, pre-job safety briefings, confined space entry, and trenching safety and taking precautions in excavated trenches, for all employees when working on DENC and DESC *gas pipeline* systems. Also included are procedures for asbestos containing materials, lead paint removal, and PCB testing.

For additional safety information see the [Gas Safety Manual and Annexes](#).

2.0 REGULATORY REFERENCES

49 CFR Part 192 § [192.605](#)(b)(9); 40 CFR Part 761 § [761.65](#)(c)(1)

3.0 PROCEDURE

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3.1 Personal Protective Equipment

- (a) PPE is protective equipment for the eyes, face, head, extremities, fire resistant clothing, respiratory devices, protective shields/ barriers, etc designed to protect the wearer's body from injury. It is the responsibility of the employee to assess the work area to determine what hazards are present or likely to be present. The appropriate PPE shall be worn to address any hazards identified in the assessment.
- (b) PPE shall be inspected prior to use and always maintained in good condition. Defective or damaged equipment shall be replaced and shall not be used.

[3.1.1 Head Protection](#)

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3.1.1 Head Protection

- (a) A hard hat shall be worn when working in areas where there is a potential for injury to the head from falling objects or electrical hazards. This includes, but is not limited to, areas where overhead work is in progress.
- (b) The hard hat shall be worn in a manner prescribed by the manufacturer with the brim facing the front. Unauthorized apparel shall not be worn between the head and the hard hat.
- (c) Hard hats shall be replaced on a periodic basis in accordance with the manufacturer's recommendations. As a general rule, hard hats are to be replaced every five (5) years. Hard hats that are frequently exposed to temperature extremes, sunlight, or chemicals are to be replaced every three (3) years. *However, a hard hat may continue to be used if it has successfully passed the field test.*

3.1.2 Hand Protection

Hand protection, such as gloves, shall be used when there is exposure to hazards, such as those from skin absorption of harmful substances, chemical burns, thermal burns, and harmful temperatures, and pinch points.

3.1.3 Body Protection

Body protection refers to clothing that will protect the worker from an arc-flash or flash fire-related incident. Wearing flame resistant (FR) clothing reduces burn injury and restricts burns to the body surface directly related to the area of origin. A Fire Suit is a full body suit made of double-lined, fire-resistant coverall material. These suits meet NFPA 2112 specifications and provide required protection for the heat intensity and escape times projected in the AGA publication, [Natural Gas Workers and Natural Gas Fires](#).

3.1.4 Specific Wear

FR & AR rated clothing shall be used when the employee is exposed to potential of a flash fire or arc flash.

- (a) Full FR (to include: FR suits or full coverage uniforms, hood, gloves, hard hat, safety glasses) shall be worn while squeezing pipe. This is also the requirement while releasing the squeeze tool.
- (b) Full FR (to include: FR suits or full coverage uniforms, hood, gloves, hard hat, safety glasses) shall be worn while working in an excavation with an open end of pipe or other opening in the pipe.
- (c) In rare circumstances, Operations Manager or leadership delegate approval is required to retract (b) requirements, above.

NOTE: Management should consider the following before approving the relaxing of FR requirements:

- Confirm 100% shut off / no bleed by
 - Qualified employee will stay at site of shut off (to ensure no unintentional use of the shut off method and/or to communicate any change at the site)
 - Continuously monitor the hole
 - Confirm the shut off capability is within line-of sight to the hole
- (d) Per section 4.1.3 of GD-SF-A-140-001, Full Fire Suit System (Silver Needle Level II Fire Suit), as approved by the Safety Department, and consists of the following components:
- (i) Full body suit made of double-lined, fire-retardant (FR) material with a built-in harness or other effective means to attach a lanyard to assist with extraction.
 - (ii) Self-contained Breathing Apparatus (SCBA) or Pressure Demand Supplied Air Respirator (SAR).
 - (iii) Head protection (multi-layered Nomex® hood or equivalent).
 - (iv) Multi-layered fire-retardant gloves with a gauntlet cuff.
 - (v) Kevlar® lanyard or equivalent.
 - (vi) Appropriate hearing protection.
 - (vii) A torn or damaged Fire Suit, damaged or improperly operating respirator regulator or breathing air cylinder gauges must be reported to supervision.
 - (viii) Untreated clothing made of synthetic fibers such as acetate, nylon, polyester, polypropylene and spandex shall not be worn as a base layer under a Flash Fire Suit. Employees must only wear clothing made of natural fibers such as cotton, wool or silk (an incidental amount of synthetic fabric such as that found in waistbands is allowed).
 - (ix) Whenever full fire suit system is required as part of these procedures an attendant employee *must* don a fire suit system.

See also:

- [AG-SF-A-140-004 - Personal Protective Equipment](#)

And this safety annex in the online Gas Safety Manual & Annexes:

- [SD-204 Respiratory Protection](#)

3.2 Self Contained Breathing Apparatus (SCBA) Requirements

Self-contained Breathing Apparatus (SCBA) is a full-face, pressure-demand respirator that supplies the user with breathable air from a compressed gas cylinder(s) carried in a frame on the back of the user.

- (a) Whenever an employee (entrant) is required to don an SCBA, an attendant employee *must* also don an SCBA. If the helper employees are in a *safe atmosphere*, they are not required to have the SCBA and respirator donned, only ready.

Note: It is recommended that the helper employee don the full fire suit and the SCBA.

- (b) Any employee in the hazardous atmosphere donning an SCBA must also wear a harness and lanyard, monitored by an attendant employee.
- (c) If an *emergency* occurs that requires the attendant employee to enter the excavation, the third on-site helper employee must then be notified that an emergency has occurred before the attendant employee enters the excavation. This third on-site employee must then don an SCBA and respirator.
- (d) In rare circumstances, the requirement to have 3 employees present may be waived with Manager level authorization. Waiver requests shall be granted only if adequate work practices and procedures are in place to protect employee safety (e.g., fire department personnel are present on scene).
- (e) Employees performing covered tasks where SCBA's are required must be operator qualified to complete the *covered task(s)* and certified to don SCBA equipment. If SCBA certified employees are not also operator qualified for the task(s), then the completion of any required covered tasks must be coordinated and supervised by another employee who is operator qualified for the task(s).
- (f) Employees must have proper authorizations from the manager or delegate to enter an unsafe atmosphere requiring the use of SCBA.
- (g) A lanyard must be attached to the employee entering the unsafe atmosphere and the attendant. The attendant is responsible for controlling a lanyard connected to the Entrant. One Attendant per each Entrant is required.

3.3 Trenching and Excavation Safety [[192.605\(b\)\(9\)](#)]

(a) Excavation Safety

- (1) Trenching and Excavation are among the most hazardous construction operations. An excavation is any man-made cut, cavity, trench, or depression in an earth surface formed by earth removal. A trench is defined as a narrow underground excavation that is deeper than it is wide, and no wider than 15 feet.
- (2) All installations or maintenance activities which involve excavations 4' and greater and less than 20' in depth require completion of the Excavation Checklist (see [section 5.0](#)) (located on back page of pre-job brief) and review of [Chapter 12-B Leak Response, Leak Classification, and Gas Emergencies, Section 3.2 Working in Natural Gas Atmospheres involving Excavations](#) (if leaking gas is present). The Excavation Checklist is required to be completed before work begins and reviewed in the afternoon and after any change in conditions.
- (3) Because excavations pose a serious threat to worker safety, the Occupational Safety and Health Administration (OSHA) established regulations in 29 CFR 1926.650 – 652 which govern work in and around excavations. In general, OSHA requires that all excavations in which employees could potentially be exposed to cave-ins be protected by (1) sloping or benching the sides of the excavation, (2) supporting the sides of the excavation, or (3) placing a shield between the side of the excavation and the work area.
- (4) Adequate precautions *shall* be taken to prevent employee exposure to atmospheres containing more than 20% of the *LEL* (Lower Explosive Unit)

providing proper respiratory protection or ventilation and includes the use of a personal gas monitor. If needed, emergency rescue equipment, including a self-contained breathing apparatus (SCBA) and rescue harness and line shall be provided at the excavation site. If an employee is required to wear a SCBA while working in an excavation, a second employee equipped with at SCBA must be present and prepared to assist if needed. Local fire departments *may* be called upon for assistance with this equipment.

(b) Training:

Initial Competent Person and awareness training will be held for designated individuals as required and a subsequent Competent Person Refresher course will be required once every three years.

(c) Adequate Protective System Requirements:

- (1) Protective system requirements are dependent on the field conditions of the excavation. Soil type must be classified as Type A, B, or C to select an appropriate protective system. See [Soil Classification](#) section below for procedure for classifying soils.
- (2) Type A and Type B soils can be sloped or benched in accordance with SOP AG-SF-A-140-005 Excavation Safety.
- (3) Type C soils may be sloped, but not benched.

(d) Soil Classification:

Note: The soil descriptions for OSHA Type "A", "B", & "C" Soils are based on Appendix A to OSHA Subpart P of 29 CFR Part 1926, "Excavations and Trenches".

- (1) Type "A" Soil - Equivalent weight effect of 25 PSF per foot of depth.
 - (i) Cohesive soil (i.e. clay, silty clay, sandy clay, clay loam) with an unconfined compressive strength of 1.5 TSF (tons per square foot) or greater; or
 - (ii) cemented soils such as caliche and hardpan;
 - (iii) No soil is Type A if the soil is fissured; subject to vibration from heavy traffic, pile driving or similar effects; has been previously disturbed; or part of a sloped, layered system where the layers dip into the excavation on a slope of four horizontal to one vertical (4H:1V) or greater.
- (2) Type "B" Soil - Equivalent weight effect of 45 PSF per foot of depth.
 - (i) Cohesive soil with an unconfined compressive strength greater than 0.5 TSF but less than 1.5 TSF; and
 - (ii) granular cohesionless soils including angular gravel, silt, silt loam, sandy loam, and in some cases, silty clay loam and sand clay loam; or
 - (iii) previously disturbed soils except those which would otherwise be classed as Type C; soil that meets requirements for Type A, but is fissured or subject to vibration; dry rock that is unstable; or
 - (iv) material that is part of a layered system where layers dip into the excavation on a slope less steep than four horizontal to one vertical (4H:1V), but only if the material would otherwise be classified as Type B.
- (3) Type "C" Soil – A Cohesive Soil with an Unconfined Compressive Strength of 0.5 tons per square foot or less such as the following:

- (ii) Submerged Soil or soil from which water is seeping.
- (iii) Submerged rock that is not stable; or
- (iv) Material that is part of a sloped, layered system where the layers dip into an Excavation.

(e) Reference:

- (1) All trenches and excavations are subject to the requirements of Occupational Safety and Health Administration (OSHA) established regulations in 29 CFR 1926.650 – 652 which govern work in and around excavations.
- (2) All trenches and excavations are subject to the requirements of [Chapter 12-B Leak Response, Leak Classification, and Gas Emergencies, Section 3.2 Working in Natural Gas Atmospheres involving Excavations.](#)
- (3) All trenches and excavations are subject to the requirements of [3.5 Pre-Job Safety Briefings.](#)

(f) Inspection and Documentation

All excavations to be entered shall be inspected by an excavation competent person prior to entry and the Pre-Job Safety Briefing Form (see [section 5.0](#)) must be completed and retained with compliance records.

3.4 Control of Static Electricity

To minimize the possibility of static electricity generation prior to installing or working on plastic pipe, the following precautions shall be taken:

Note: Personal protective equipment, fire suit system, eye, face, hand and head protection, shall be used when operating in a hazardous atmosphere.

- 1. Exposed plastic shall be grounded by applying a solution of water diluted with non-corrosive detergent to the plastic pipe and surrounding area. A cloth made of 100% cotton, or burlap shall be used to apply the liquids. The solution shall be applied starting at the end of each exposed plastic pipe section that is touching the soil and finishing at the opposite end. A continuous film of the solution shall cover the entire surface of the plastic pipe.
- 2. The cloth(s) shall be soaked in the solution prior to application. The cloth shall then be wrapped around each section of exposed plastic pipe and placed where it is in contact with the soil. The cloth shall be kept wet with the solution until completion of the work.
- 3. The area of plastic pipe to be "squeeze-off" shall be cleaned and saturated by applying the solution liquid to the exposed plastic pipe in the "squeeze-off" area by wiping the pipe with the cotton cloth.
- 4. The area of the cut *should* be cleaned and saturated by a wet cloth. Solution shall be reapplied as needed to the cloth and the cut area until the pipe is completely severed. Solution shall be applied to the cut point while the cut is being made to eliminate static from the inside of the pipe.
- 5. Solution shall be periodically reapplied to the cloth and poured over the exposed plastic pipe until the work is complete.
- 6. All equipment used on plastic pipe shall be electrically grounded. Electrical continuity between the equipment and the soil in which the plastic pipe has been installed should be established in accordance with both of the following:
 - 1. Attach a grounding wire from a metallic section of the equipment to an approved ground rod and insert the ground rod into the soil. If the use of a grounding wire and a ground rod is impractical, the equipment surface shall be covered with a continuous film of an approved liquid

2. The equipment operator shall ensure that they are insulated from the equipment by operating equipment with its insulated handles or providing a means of insulation such as wrapping insulating tape around equipment handles and/or using gloves.

Note: No equipment should be operated in a combustible gaseous atmosphere unless specifically approved for that application by the appropriate Director.

3.5 Pre-Job Safety Briefings [[192.605\(b\)\(9\)](#)]

Good planning is essential for safe and efficient job performance. OSHA requires a safety briefing prior to the start of all jobs to ensure that hazards have been identified and the necessary precautions are in place to prevent injuries. Prior to the start of work, a Pre-Job Safety Briefing shall be conducted as follows:

- (a) Any job (to include routine or emergency) that involves two or more employees or employees and contractor shall complete the Pre-job/Safety Briefing Form found in [section 5.0](#). A contractor representative shall be included in the Pre-job/Safety Brief when working on the same work site as company crews to discuss the job, safety concerns, order of events, etc.
- (b) Perform a "Take 5" in order to assess the hazards and develop a plan for how to mitigate those hazards.
- (c) An employee working alone need not complete a written job briefing. However, a "Take 5" should be reviewed prior to starting work.
- (d) All employees shall perform additional Safety Briefings or review existing Safety Briefing if changes are made to the work plan or when conditions change in the field.
- (e) Additional or review of Safety Briefings shall be held if significant changes occur. Review or additional Safety Briefings must be held after being absent from the job site for a period of time (such as but not limited to lunch, weather or equipment delays, etc), which might affect the safety of the employees or others.
- (f) Any individual(s) (to include other company employees, contractors or others) that arrive after a Pre-Job Safety Briefing has been communicated and are involved in the job shall be included in the process and provided with all the necessary information.
- (g) Pre-Job Safety Briefing Forms should be stored at the local office and retained for a minimum of one year plus one additional year.

3.6 Asbestos Containing Materials (ACM) or Presumed Asbestos Containing Materials (PACM) and Presumed Polychlorinated Biphenyls (PCBs) [[761.65\(c\)\(1\)](#)]

- (a) General requirements for removing, handling and temporary storage of ACM or PACM.

This procedure provides instruction for removing, handling, and transporting ACM or PACM for small scale projects.

NOTE: Notification of a competent person is required at any time where the removal of the pipe coating or gasket material may exceed the scope of this procedure or at any time the asbestos worker needs assistance.

DENC and DESC uses the presumption rule that all coal tar pipe coating is asbestos containing material unless analysis proves otherwise, therefore this procedure shall utilize all management and work practices associated with proper ACM or PACM exposure reduction necessary to minimize fiber release.

- (1) Each DENC and DESC employee or work crew that may encounter *ACM* or *PACM* should have an ACM/PACM removal kit available which is stocked with appropriate tools, equipment, and materials to safely remove, contain, and transport the material. Employees removing pipe ACM or PACM

1. Copy of this work procedure
2. Warning barricade tape
3. OSHA Asbestos Danger Sign

Note: OSHA Danger signage shall read:

DANGER ASBESTOS
MAY CAUSE CANCER
CAUSES DAMAGE TO LUNGS
AUTHORIZED PERSONNEL ONLY

4. Polyethylene sheeting (6 mil. minimum)
5. Standard asbestos waste bags 60"x60" for double bagging (6mil minimum)
6. Disposable gloves
7. Disposable wipes
8. Duct tape or equivalent
9. OSHA Danger/Generator Label (at least 6-inches long on each side)

Note: OSHA Danger Labels shall read:

DANGER
CONTAINS ASBESTOS FIBERS
MAY CAUSE CANCER
CAUSES DAMAGE TO LUNGS
DO NOT BREATHE DUST
AVOID CREATING DUST

10. Permanent marker
11. Spray bottle (with soap/water solution)
12. Plastic box to store the items listed above
13. DOT rated container for PCB's properly labeled with secure lid to transport to temporary storage location
14. Plastic wrap (e.g., Saran Wrap™)

(b) Procedure for the removal of gaskets and pipe coating that contain *ACM* or *PACM* materials and/or presumed PCBs.

- (1) This following procedure is limited to routine/normal activities involving the disturbance of ACM or PACM associated with the removal, repair, installation and/or abandonment of gas pipe and associated equipment. The removal and/or handling of any ACM or PACM shall be done in a

- (2) Before beginning any work, the DESC Project Manager shall verify that all personnel that may handle, disturb, and/or come in contact with ACM or PACM have been properly trained. The training shall be documented in HUB Learning. Contact HUB Learning administrator to access records. (Contractors operating on our DHEC group license shall submit training records to be entered into ITS)
- (3) Prior to removal of any ACM or PACM, conduct a tailboard safety meeting to review the work scope and job task. Once project objectives have been established, place 6mil sheeting beneath the work area, barricade the work area with warning tape and place an asbestos warning sign in clear view at work site.
- (4) Before beginning any work, contact your supervisor (DESC personnel) and/or your construction inspector/specialist (contractor personnel) to notify them that you are going to be removing material that may contain asbestos and PCBs.

The supervisor (DESC personnel) and/or your construction inspector/specialist (contractor personnel) will verify that the asbestos/PCB material has been delivered to the temporary storage site.

The supervisor or construction inspector/specialist shall complete the [Asbestos/PCB Containing Waste Material Log \(SOP AG-SF-A-140-007 Appendix E\)](#) and instruct the individual removing the material where and when all material removed should be logged and stored as required by this procedure.

- (5) Before beginning any work, put on all required personal protective equipment.
- (6) Place polyethylene catch sheeting (6 mil) directly beneath the area to contain and collect dislodged ACM or PACM. All dislodged coating must be properly contained and transported for disposal once job is complete
- (7) Adequately wet the ACM or PACM material with a soap/water solution prior to and during the removal process.
- (8) Wrap plastic wrap (e.g. cling wrap) (Min. 12 wraps around circumference of pipe) on pipe section where PACM/ACM is to be removed. This work practice reduces the potential for fiber release. (Remember to keep material that potentially contains asbestos adequately wet during the removal process.)
- (9) Power tools shall not be used to remove ACM or PACM to include the use of a burning apparatus.
- (10) Remove materials from the affected pipe/flange to allow subsequent maintenance work activities to proceed without disturbing adjacent ACM or PACM. Removed ACM or PACM shall be contained and collected in the 6 mil polyethylene catch sheeting below the work area.

NOTE: Use of a burning apparatus/cutting torch to remove coal tar coating/gaskets is strictly forbidden. Please note that once the coating/gasket material has been removed a cutting torch can be used to remove the steel pipe and/or fittings.

- (11) Decontamination: After removal activities are completed, all work surfaces of the pipe/flange/tools shall be wiped down with disposable wipes and soap/water solution to ensure that all ACM or PACM have been removed.
- (12) When decontamination is complete, place all used wipes and disposable gloves into the polyethylene catch sheeting that contains dislodged ACM or PACM debris. Fold or roll into a manageable size depending on size of the 6 mil drop sheeting. Material shall be placed in two 6 mil disposal bags.
- (13) Use the proper OSHA & PCB labels for each bag. The stickers shall be completed to indicate date, address, town/city, amount, name of individual (print first and last name) that removed material and company name they are employed by. Place the stickers on the outside of the approved storage bag(s). Place PCB sticker on the plastic transport container, drums, and dumpster.

- (14) Transport the sealed and labeled bag(s) from the job site to the nearest temporary storage location in the properly labeled and sealed transport container as soon as possible, not to exceed five business days from the date removed, if bags contain ACM/PACM.

If the material cannot not be transported within 5 business days, contact the ECC to coordinate and to ensure final transport will arrive in the 30-day window. (In order to facilitate a manageable routine, local offices may establish a set day of the week to transport field-removed ACM/PACM.)

NOTE: Materials assumed to contain PCBs, such as coal tar based pipe wrap, shall not be stored in a temporary location for more than 30 days, and it shall be disposed at the Environmental Services approved landfill within 30 days of removal from the ground.

NOTE: ACM or PACM materials are not considered "disposed" when they are taken to a container or dumpster.

NOTE: All ACM or PACM shall be disposed at a DENC and DESC Environmental Services Department approved landfill. Properly sampled materials that have been verified to be negative ACM may be disposed as scrap waste or recycled for metal recovery.

State Specific: South Carolina

South Carolina Department of Health and Environmental Control (SCDHEC) has declared the ACM or PACM removed by hammering/chipping is considered friable. Any undisturbed ACM or PACM shall be considered non-friable.

- (15) ACM or PACM waste, scrap, debris, bags, containers, equipment, and contaminated clothing consigned for disposal shall be collected and disposed of in sealed, labeled, impermeable bags or other closed, labeled, impermeable containers.

- (16) Once transported to the designated temporary storage location, place ACM or PACM waste in appropriate designated storage container that is properly labeled with the OSHA Danger Label and PCB Label.

- (17) Enter the appropriate information on the [Asbestos/PCB Containing Waste Material Log \(SOP AG-SF-A-140-007 Appendix E\)](#) located at the temporary storage location.

- (c) Sample testing – shall only be done by Trained and Licensed Asbestos Inspector. Pipe maybe tested prior to the start of project to determine if the coating is negative for ACM. Any material determined to be negative for ACMs should be disposed of per instructions from Environmental.

- (d) Procedure for handling pipe segments coated with **ACM** or **PACM**

- (1) Coated pipe that is not to be removed from the ground when retired, can remain in-place without further coating removal activity. Those pipe segments can be left in place if minimal possibility exists that those sections will not be disturbed by a third party. If there is a possibility that the pipe segment will be disturbed:

(i) remove portions of pipe and/or segment that will be disturbed,

(ii) test the coating for asbestos (by a qualified Licensed Asbestos Inspector) to determine if the segment can be retired in place without ACM or PACM removal and dispose of waste.

- (2) If piping will potentially require removal due to future construction or other constraint activities and/or the pipe will be cut into sections for disposal at a landfill, the affected section should be tested for ACM content. Removal of pipe with excavation equipment should be done carefully.

as not to damage ACM or PACM coating. Any damaged coating should be properly wrapped or collected if broken-free from pipe, and properly transported for disposal.

- (3) Before disconnecting pipe segment, only remove enough ACM or PACM coating to make a cut on the pipe. Approximately 6 inches of coating should be removed down to bare steel to allow pipe to be cut safely.
- (4) Once cut and before removing pipe segment, remove any loose ACM or PACM coating on pipe segment. Wrap plastic around the entire length of the pipe including duct tape on the edges to keep coating from becoming delaminated during transport and/or handling.
- (5) Attach a PCB sticker to the pipe.
- (6) When pipe is loaded and ready for transport, any damaged or loose coating should be duct taped, sealed, or encapsulated. All coated pipe should be transported in a manner as not to further damage coatings.
- (7) The pipe should be cut into manageable lengths for transportation. Only Gas Operations Class III O&M Asbestos Worker qualified personnel can remove coating at the cut locations and the coating material must be removed before using a cutting torch and/or saw.

These pipe segments and all ACM or PACM pipe coating removed should be transported to designated storage locations and/or approved landfills.

- (8) The Corporate Environmental Services Department audits and approves all landfills for disposal of ACM/PCB. The current approved landfill is located in Emelle, Alabama.

All waste disposal should be coordinated through the ECC.

This removal should be documented on the [Asbestos/PCB Containing Waste Material Log \(SOP AG-SF-A-140-007 Appendix E\)](#).

(e) Temporary storage location and transportation of *ACM* or *PACM* to secure locations

- (1) ACM or PACM waste, scrap, debris, bags, containers, equipment, and contaminated clothing consigned for disposal shall be collected and disposed of in sealed, properly labeled, PCB rated DOT approved containers. Each container shall be stored in a secured area.
- (2) Removed pipe coatings/gasket materials shall be transported from the job site in a sealed container and deposited in the properly labeled and sealed container at the nearest temporary storage as soon as possible, not to exceed five business days from the date removed, if bags contain ACM/PACM.

If the material cannot not be transported within 5 business days, contact the ECC to coordinate and to ensure final transport will arrive in the 30-day window. (In order to facilitate a manageable routine, local offices may establish a set day of the week to transport field-removed ACM/PACM.)

- (3) Each designated temporary storage location shall have an approved DOT container located in a secure location. The container shall be lined with a 6 mil. polyethylene bag. The container must be labeled with the following:

DANGER, Contains Asbestos Fiber, Avoid Creating Dust, Cancer & Lung Disease Hazard

PCB sticker

- (4) To ensure all materials are transported to the landfill before 30 days, a sign shall be placed on the temporary storage container with the compliance date set by the ECC.

If materials were removed from the field before the date on the sign, they shall not be placed in the storage container. If this is the case, contact your supervisor or construction inspector/specialist in order to ensure the material is disposed in 30 days.

- (5) Each designated temporary storage location shall maintain an [Asbestos/PCB Containing Waste Material Log \(SOP AG-SF-A-140-007 Appendix E\)](#) to track ACM or PACM to be transported for disposal.
- (6) The log will be reviewed by the Project Supervisor/Inspector to ensure only trained individuals have removed ACM or PACM and completeness of log. The log shall be maintained for three years. (Linear feet for coating and square feet for gaskets)
- (7) The following list of DESC facilities designated as temporary storage locations for potential ACM (and neither assumed or confirmed to be containing PCBs):

State Specific: South Carolina

Columbia Gas Operations*

Aiken Gas Operations

Abbeville Gas Operations

Florence Gas Operations

Marion Gas Operations

Sumter Gas Operations

Myrtle Beach Gas Operations

Georgetown Gas Operations

Lake City Gas Operations

Charleston Gas Operations*

Summerville Gas Operations

Beaufort Gas Operations

Bushy Park LNG Operation

* Columbia, Charleston, Gastonia, and South Durham are the four shipping sites that the other sites will transfer all ACM or PACM material stored in metal containers to every 30 days.

(f) Disposal of *ACM* or *PACM*

- (1) All ACM or PACM will be disposed of every 30 days.

Note: ACM or PACM materials are not considered "disposed" when they are taken to a container or dumpster. It is only considered disposed when it has arrived at the approved landfill.

- (2) All containers should be properly sealed, labeled as specified above.
- (3) Coordinate pickup date with the ECC to ensure that all PACM and ACM is shipped in time to meet the 30-day requirement.
- (4) To ensure all materials are transported to the landfill before 30 days, a sign shall be placed on the temporary storage container with the compliance date set by the ECC. If materials were removed from the field before the date on the sign, they shall not be placed in the storage container. If this is the case, contact the ECC in order to ensure the material is disposed in 30 days.
- (5) All asbestos will be transported to the landfill from the four shipping sites in Columbia, Charleston, Gastonia, and South Durham.
- (6) All disposed asbestos should be brought to either of the four shipping sites prior to the date scheduled by ECC, so that all removed asbestos material is shipped to the approved landfill for disposal within 30 days after removal from the gas system.

To ensure materials arrive at the approved landfill within the 30-day window, transport from the four shipping sites may be staggered by two weeks. The transport containers in Gastonia may be transported two weeks before South Durham. The transport container in Columbia may be transported two weeks before Charleston.

- (7) Environmental will be responsible for all paperwork needed for disposal. (Asbestos/PCB Containing Waste Material Log; Shipping Manifest)

3.7 PCB Testing

- (a) If any oil, distillate, or free-flowing liquid is found in a pipeline during maintenance work, Environmental should be notified and the liquid should be tested for PCBs in accordance with 40 CFR 761 and DENC and DESC's Environmental Department requirements. If the liquid could escape the pipeline during maintenance activities, proper precautions must be taken to capture this liquid. Avoid contact with these liquids and wear appropriate PPE (eye and skin protection to include face shield, long sleeves and rubber gloves). Proper methods to capture the liquid include:
 - (1) A leak proof container such as a sealable bucket or drum
 - (2) A temporarily constructed frame lined with plastic sheets and absorbent material that permits transfer to a sealable drum or bucket
 - (3) Other methods as approved by the Director.
- (b) Once captured, liquid should be tested for PCB's by DENC and DESC Environmental personnel or an approved contractor. If PCB's of 50 *ppm* or more are present, specific plans will be required to dispose of any contaminated pipe or material. Each sample tested should be clearly identified as to the location where it was obtained.

3.8 Lead Paint Removal

The following are requirements for the removal of aged paint, rust, and foreign materials, potentially containing lead, from aboveground pipelines.

- (a) The materials listed below are required at the job site. These materials should be kept in a plastic box labeled "lead paint removal material."
 - (1) Copy of work procedure

- (2) Caution tape or temporary sign
 - (3) Polyethylene catch sheeting (3-4 mils)
 - (4) Polyethylene one gallon zip-lock bags
 - (5) Duct Tape
 - (6) Permanent marker or "CONTAINS LEAD CONTAMINATES" stickers
 - (7) Moist towelettes
 - (8) Wire brush, file, paint scraper, and/or draw knife
- (b) No smoking, eating, or chewing while performing removal.
 - (c) Prior to working, designate work area with caution tape or sign.
 - (d) Attach polyethylene catch sheeting directly beneath the removal area to contain and collect dislodged particles.
 - (e) Use brushing, filing, or scraping to dislodge aged paint, rust, or other foreign materials from aboveground piping.
 - (f) When brushing, filing, or scraping is complete, empty contents of polyethylene catch sheeting into a one-gallon zip-lock bag.
 - (g) Wipe down brushed or scraped section of pipe with moist towelette.
 - (h) Wipe down polyethylene sheeting with moist towelette.
 - (i) When wipe-down is complete, dispose of towelette in the one-gallon zip-lock bag containing the dislodged particles.
 - (j) Seal zip-lock bag and label "CONTAINS LEAD CONTAMINATES" with marker or sticker.
 - (k) Fold polyethylene catch sheeting and store in plastic material container for re-use.
 - (l) Wash hands.
 - (m) Empty waste material from one-gallon zip-lock bag into DOT 17 steel drum, marked "contains lead", with locking lid.
 - (n) Re-seal zip-lock bag.
 - (o) Place zip-lock bag back into "lead paint removal material" container for re-use.
 - (p) Wash hands.

3.9 Confined Space Entry

3.9.1 General

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

[3.9.3 Identification](#)

[3.9.4 Entry](#)

3.9.1 General

This procedure include the requirements for identification of a confined space and entry requirements.

- (a) Ensure that Permit-Required Confined Spaces are permanently marked in the field (Company Property Only).
- (b) Contact your Supervisor and/or Safety Specialist if you have any questions about a space.

3.9.2 Definitions

- (a) COMPETENT PERSON – One who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has the authorization to take prompt corrective measures to eliminate them.
- (b) CONFINED SPACE – a space that has all of the following characteristics:
 - (1) Has limited or restricted means for entry or exit (for example: tanks, vessels, silos, storage bins, hoppers, vaults, and pits are spaces that may have limited means of entry).
 - NOTE:** Attics with pull-down stairs may eliminate a restricted access condition
 - (2) Is large enough and so configured that an employee can enter fully and perform assigned work.
Example: ≥ 48 " depth or other physical barriers, a door or entryway that is less than 2' wide and 6' height
 - (3) Is not designed for continuous employee occupancy (for example: crawl space, vault, attic)
- (c) HAZARDOUS ATMOSPHERE – An atmosphere that may expose employees to the risk of death, incapacitation, and impairment of ability to self-rescue (that is, escape unaided from a permit space), injury, or acute illness from one or more of the following causes:
 - (1) Flammable gas, vapor, or mist in excess of 10 percent of its lower flammable limit (LEL).
 - (2) Airborne combustible dust at a concentration that meets or exceeds its LEL. (This concentration may be approximated as a condition in which the dust obscures vision at a distance of 5 feet or less.)
 - (3) Atmospheric oxygen concentration below 19.5 percent or above 23.5 percent.
- (d) PERMIT-REQUIRED CONFINED SPACE (PERMIT SPACE) - A confined space that has one or more of the following characteristics:
 - (1) Contains or has a potential to contain a hazardous atmosphere.
 - (2) Contains a material that has the potential for engulfing an entrant.
 - (3) Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross-section.

(4) Contains any other recognized physical or health hazard.

NOTE: (1) & (4) are the only two that may impact gas operations.

(e) PHYSICAL HAZARD – Any conditions that could impede an entrant's ability to exit the space without assistance.

3.9.3 Identification

(a) A competent person shall identify all confined spaces and/or permit required confined spaces in which an employee may work.

(b) Open space and allow it to ventilate.

(c) Evaluate space to determine if it is a confined space and identify any hazards that may make it a Permit-Required Confined Space.

(d) If it is a Confined Space determine if a [Confined Space Entry Permit](#) (PDF file) is Required:

(1) Is there an Atmosphere hazard?

- Oxygen deficient atmosphere (19.5% or less)
- Oxygen enriched atmosphere (23.5% or higher)
- Flammable gases or vapors ($\geq 10\%$ LEL)
- Hydrogen Sulfide ≥ 20 ppm
- Carbon Monoxide (CO) ≥ 35 ppm
- Other Toxic substances present

NOTE: A hazardous atmosphere must be considered Immediately Dangerous to Life or Health (IDLH). This condition requires the following:

- Self-Contained Breathing Apparatus (SCBA)
- Lifeline and Standby person for Non-Entry Rescue
- Notification to rescue service

(2) Is there a Physical hazard?

- Potential for falling
- Animal / Insect
- Electrical / Mechanical

State Specific: South Carolina

(e) A space classified as a Permit-Required Confined Space may be reclassified as a Non-Permit Confined Space in accordance with [SD-300, Enclosure II](#).

3.9.4 Entry

- (a) Perform an initial CGI check to evaluate the atmosphere before entering space, and continually monitor the space while working.
- (b) Install ladder for safe access to pits 48 inches and deeper.
- (c) Entry can be made in a non-permit required Confined Space.
- (d) Entry shall not be made in Permit Required Confined Space unless a [Confined Space Entry Permit](#) (PDF file) is filled out and signed, and the entry is authorized by the Director.

4.0 TRAINING/QUALIFICATIONS

See the appropriate system [Operator Qualification Program](#) for required OSHA training and personnel qualifications.

5.0 DOCUMENTATION/FORMS

- [Pre-job Safety Briefing Form](#) (PDF file)
- [Excavation Checklist](#) (PDF file)
- [Pre-job Safety Briefing Form / Excavation Checklist](#) combined (PDF file)
- [Confined Space Entry Permit](#) (PDF file)
- [Examples of Containers and Signage](#) (PDF file)
- [Asbestos/PCB Containing Waste Material Log_\(SOP AG-SF-A-140-007 Appendix E\)](#) (.xls file)

State Specific: South Carolina

- [DESC Form-OM 510 - Asbestos Labels](#) (PDF file)
- [DESC Asbestos Abatement Quarterly Report for Pipe](#) (Microsoft Word file)

6.0 RELATED DOCUMENTS

- TEIC Safety Procedures
 - [AG-SF-A-140-002 – Ladder Safety.pdf](#)
 - [AG-SF-A-140-003 – Hearing Conservation Program.pdf](#)
 - [AG-SF-A-140-007 - Asphaltic Pipe Wrap Removal and Handling_\(Rev 0A\)](#)
- Safety annexes:
 - [SD-202 Eye Protection Program](#) (online manual)
 - [SD-203 Hearing Conservation Program](#) (online manual)

- [SD-205 Personal Protective Equipment](#) (online manual)
- [Dominion Energy Hazardous Materials Transportation Guide \(HMTG\) - 2020](#) (PDF file)

7.0 APPENDICES

State Specific: South Carolina

- [DESC Emergency Contact List](#) (Excel file)
- [DESC Gas Operations PPE Matrix](#) (PDF)

(UNCONTROLLED IF PRINTED)