



REFERENCES:

- Title 49 CFR 192.605, Procedural Manual for Operations, Maintenance and Emergencies
- Title 49 CFR 192.751, Prevention of Accidental Ignition

I. POLICY

- A. The DPU will make all reasonable efforts to eliminate conditions which may cause a hazard due to the formation of combustible gas–air mixtures.
- B. If the formation of a combustible gas–air mixture cannot be prevented, actions will be taken to control the sources of ignition or to remove people from the hazardous area.
- C. Questions regarding application of this procedure should be directed to the Deputy Director of Gas and Lights.
- D. Annually, all gas field personnel will review this Prevention of Accidental Ignition (POIA) procedure.

II. GENERAL INFORMATION

- A. When the formation of a gas–air mixture cannot be eliminated, prevention of the fire and explosion hazard relies on control of the ignition sources.
- B. A static electrical charge can be produced by gas flowing in polyethylene pipe. This charge on the inside of the pipe can be a source of ignition if the pipe is cut or damaged while in service.

III. PROCEDURES

A. General Precautions

- 1. All work involving gas and air mixtures shall be handled only by experienced personnel with Operator Qualification.
- 2. Facilities will be operated and maintained so as to minimize the release of gas into the atmosphere. Where this is not possible (such as at gate stations), take measures to prevent accidental ignition:
 - a. Restrict access by means of fences, locked doors, etc.
 - b. Post warning signs such as “No Smoking or Open Flames.”
 - c. Classify the area for the use of explosion proof wiring and components.
- 3. Take steps to minimize the danger of accidental ignition of gas in any structure or area where the potential for gas in combustible mixtures can reasonably be anticipated due to the operation being performed.



- a. When gas is being vented into the open air or there is the potential for the release of gas:
 - (1) Remove each potential source of ignition from the area.
 - (2) Have a properly inspected fire extinguisher ready for use.
 - (3) Construct blow-down connections or vents to direct vented gas away from overhead electric transmission lines and other sources of ignition.
 - (4) Notify Logistics Center so that they can knowledgeably respond to potential gas emergency phone calls from the public.
 - i. NOTE: regardless of this notification ALL gas odor complaints will be investigated.
- b. Place barricades around the work area to keep passing motorists and pedestrians at a safe distance. Use warning signs or other methods of controlling access by others, where appropriate, to limit sources of ignition from being introduced to the area of the hazard.

B. Specific Precautions

1. Elimination of sources of ignition

- a. Determine the area potentially affected. Consider the volume of gas, duration of time and external factors such as wind velocity and direction.
- b. Do not permit smoking, open flames, or cigarette lighters in the area.
- c. Use care when using tools to avoid sparking. Use proper tools to remove manhole covers.
- d. Remove unapproved electrical devices from the area or de-energize them including:
 - (1) Cell Phones
 - (2) Pagers (if not rated as intrinsically safe)
 - (3) Portable Radios (if not rated as intrinsically safe)
 - (4) Lights (if not rated as intrinsically safe)
 - (5) Flares
 - (6) Portable pumps
 - (7) Generators
 - (8) Welding Equipment
- e. Turn off or move vehicles from the area.
- f. When entering buildings with potentially explosive atmospheres, do not ring door bells, operate thermostats, light switches, circuit breakers or telephones.
- g. If necessary, contact appropriate agencies to temporarily disconnect or shut down electric, streetlight, or traffic light circuits.

2. Prevention of electrical arcing.

- a. Use only battery operated devices such as flashlights and pagers that are approved for use in a hazardous atmosphere.

- b. Portable electrical tools (lights, drills, etc.) shall be explosion proof.
- c. Metallic sections to be cut or disconnected shall be bonded over with a standard copper cable (size 10 AWG). In order to make proper electrical contact, the gas main should be filed to bright metal and a copper cable attached securely to it.

3. Gas or Arc Cutting and Welding on Metallic Pipe

- a. Prior to welding or cutting around gas facilities that are, or have been in service, the absence of a combustible atmosphere shall be established with an instrument (Combustible Gas Indicator). If necessary, use suitable means such as an air blower to prevent accumulation of a combustible mixture in the work area.
- b. When a pipe is to be kept full of gas during welding operations, such as installation of Dresser Style 220 reinforcing sleeve (“pumpkin”)
 - (1) A slight flow of gas should be maintained, moving towards the welding operation,
 - (2) The gas pressure at the site of work should be controlled by suitable means, and
 - (3) Only one opening (through the vent) should exist at one time.
- c. If the pipe cannot be kept full of gas during welding or cutting operations one of the following precautions must be taken:
 - (1) A positive means of preventing gas from entering the weld area must be established. Such methods include:
 - i. Double block and bleed (two closed valves with a bleed in between).
 - ii. Physical disconnection from the source.
 - (2) A slight positive pressure of inert gas must be maintained in the pipe during the welding or cutting operation to insure that a combustible atmosphere does not form.

4. Static Electricity on Plastic Pipe

- a. If practical, control gas escaping from damaged pipe using valves or squeeze-offs far enough away to be safe in case of accidental ignition.
- b. All tools used to squeeze plastic pipe in the vicinity of escaping gas or pipe to be cut must be grounded. All cutters used on pipe containing gas must be grounded.
- c. When performing tie-ins to plastic gas mains in service or when workers must enter an excavation with gas escaping from a plastic pipe, the following procedures must be followed to reduce the hazard of static electrical charges:
 - (1) Spray or, if spraying is impractical, pour Leak Detection Solution on exposed polyethylene pipe before entering the excavated area.
 - (2) Soak clean, absorbent rags or paper toweling with Leak Detection Solution.



- (3) Drape the rags or paper toweling over the exposed polyethylene pipe starting at the point where the pipe exits the ground working toward the affected area. The entire pipe must be covered and kept wet while the gas is escaping. An alternative method to draping rags over the pipe is to spiral wrap the pipe starting at the point where the pipe exits the ground. Ample Leak Detection Solution must be on hand and used to ensure constant wetting of the rags or toweling being used. A ground rod may be used to ensure a good contact between the rags or toweling and the ground.
- d. When purging polyethylene plastic pipe, the end should be grounded. The use of a grounded steel pipe termination is required. Even the discharge of inert gases, such as air or nitrogen, can result in an undesirable static discharge.

IV. EXHIBITS

None