

November 2, 2019

VIA CERTIFIED MAIL

Mr. Dustin Hubbard
Director, Office of Pipeline Safety
PHMSA Western Region
12300 W. Dakota Ave., Suite 110
Lakewood, CO 80228

Re: CPF 5-2019-0016

Dear Mr. Hubbard:

AmeriGas Propane, LP, received the Notice of Probable Violations letter directed to James Palkovic, VP Operations – West, dated May 16, 2019, which indicated apparent deficiencies within the AmeriGas propane distribution systems on Maui, Hawaii and Oahu.

AmeriGas is committed to the safety of our employees, customers, and neighbors and compliance with Federal regulations. AmeriGas takes PHMSA's concerns seriously. While AmeriGas does not agree that the circumstances identified by PHMSA constitute actual violations, in the interest of cooperation with PHMSA, here we are providing documentation showing the steps we took to address the alleged violations, as described below (see enclosed flash drive for documents and photographs by District).

PROPOSED COMPLIANCE ORDER

1. 192.357 Customer meters and regulators, installation

a) Each meter and each regulator must be installed so as to minimize anticipated stresses upon the connecting piping and the meter.

1. In regard to Item Number 1 of the Notice pertaining to not properly supporting gas meters by mounting bracket or by pipe supports, AmeriGas must:

a) Follow AmeriGas' O&M Manual – Meters, Regulators, and Service Lines.

- b) Inspect gas meters on Maui, Kona, and Oahu, Hawaii (Districts) for proper supports.
- c) All gas meters that do not have proper support must be corrected and must have the proper mounting brackets or pipe supports. Mounting bracket that will be installed must not have a metal to metal contact with the gas meter.
- d) Create a list of how many meters are there per customer in all Districts.
- e) Revise inspection form(s) to indicate or to include a checkbox to show that meters have been inspected for proper support.
- f) Remove the foreign corrugated plastic water line on top of the aboveground gas service pipe at Imua Mamalahoa Center (this system is in Kona. The system where the gas pipe ran underneath corrugated pipe is Tosei on Maui) or reroute the gas service pipe.

RESPONSE:

Oahu Gas Service, Maui Gas Service, and AmeriGas Kona have begun to follow the AmeriGas O&M Meters, Regulators, and Service Lines procedure. Each District has inspected pipeline meter sets for proper supports, and have installed supports where previously missing or inadequate. Here AmeriGas is providing documentation for the installation of meter supports, a list of meter customers by District, as well as the internal Atmospheric Corrosion and Patrolling forms which contain a check box for meters & supports. AmeriGas has also rerouted the gas service pipe at the Tosei system (Imua Mamalahoa Center is in Kona), and is providing documentation indicating the same.

2. 192.455 External corrosion control: Buried or submerged pipelines install after July 31, 1971.

- (a) Except as provided in paragraphs (b), (c), and (f) of this section, each buried or submerged pipeline installed after July 31, 1971, must be protected against external corrosion, including the following:**
 - (1)...**
 - (2) It must have a cathodic protection system designed to protect the pipeline in accordance with this subpart, installed and placed in operation within 1 year after completion of construction.**

2. In regard to Item Number 2 of the Notice pertaining to not having cathodic protection system on all buried pipelines, AmeriGas must:

- a) Follow AmeriGas' O&M Manual – Corrosion Control.
- b) Inspect the pipeline system in all Districts to create a list of each pipeline system to show if the system has steel risers, anodeless risers, underground PE pipe or underground steel pipe.
- c) Install cathodic protection systems on all underground steel pipe and steel risers.
- d) Re-train and re-qualify all personnel or contractors who will be installing and testing cathodic protection systems.

RESPONSE:

Oahu Gas Service, Maui Gas Service, and AmeriGas Kona have begun to follow the AmeriGas O&M Corrosion Control procedure. AmeriGas has created a list of each system service risers and underground pipe to identify material type. Districts have installed cathodic protection on underground metallic systems where previously missing or inadequate, as indicated by the included documentation. Company personnel have been retrained and qualified on installing and testing cathodic protection systems.

3. 192.481 Atmospheric corrosion control: Monitoring.

(a)...

(c) If atmospheric corrosion is found during an inspection, the operator must provide protection against the corrosion as required by 192.479.

3. In regard to Item Number 3 of the Notice pertaining to not providing protection against atmospheric corrosion found during an inspection, AmeriGas must:

a) Follow AmeriGas' O&M Manual – Corrosion Control.

b) Reevaluate and inspect the pipeline system in all Districts for atmospheric corrosion.

c) Correct or apply protection to all pipeline systems and containers that have atmospheric corrosion.

d) Inspect all gas meters in all Districts that are in contact with the ground and correct any deficiencies. Gas meters must not contact the ground to ensure proper inspection of the bottom surface of the meters for atmospheric corrosion

e) Replace all severely corroded aboveground pipe and components at Maui Coast Hotel system and any other pipeline systems in the Districts that need replacement.

f) Re-train and re-qualify all personnel or contractors who will be inspecting, installing new pipe, applying new coats and any other covered tasks for the corrective actions.

RESPONSE:

Oahu Gas Service, Maui Gas Service, and AmeriGas Kona have begun to follow the AmeriGas O&M Corrosion Control procedure. District locations have inspected and applied protection to tanks and pipelines deemed to have inadequate coatings. Districts have inspected meter installations to ensure there is adequate separation between meter bottoms and the ground. Corroded aboveground pipe and components have been replaced at the Maui Coast Hotel. Company personnel have been retrained and qualified on inspecting, installing new pipe, applying new coats and any other covered tasks for the corrective actions.

4. 192.605 Procedural manual for operations, maintenance, and emergencies.

(a) General. Each operator shall prepare and follow for each pipeline, a manual of written procedures for conducting operations and maintenance activities and for emergency response. For transmission lines, the manual must also include procedures for handling abnormal operations. This manual must be reviewed and updated by the operator at intervals not exceeding 15 months, but at least once each calendar year. This manual must be prepared before operations of a pipeline system commence. Appropriate parts of the manual must be kept at locations where operations and maintenance activities are conducted.

4. In regard to Item Number 4 of the Notice pertaining to not following the AmeriGas procedures for Emergency Plan, Odorization of Gas, Abandonment of Facilities and Damage Prevention Program, AmeriGas must:

- a) Follow AmeriGas' O&M Manual – Emergency Plan.
- b) For all Districts, schedule and participate in emergency response drills and deployment exercises with local emergency responders to establish unified incident command roles, operating procedures and preparedness for various emergency scenarios where appropriate.
- c) Revise your Emergency Plan to include how often AmeriGas will participate or conduct actual emergency response drills and deployment exercises.
- d) Follow AmeriGas' O&M Manual – Odorization of Gas, for testing of odorant level by using the testing methods/equipment described in Step 5 of the procedure.
- e) Train and qualify all personnel on the use of the gas odorization testing methods set forth in AmeriGas' O&M.
- f) Revise the odor test inspection form to indicate the odor test method/equipment used, date of calibration, amount of odorant detected, etc.
- g) Inspect the pipeline system in all Districts and document all inactive pipeline service and follow AmeriGas' O&M Manual - Abandonment of Facilities.
- h) Re-train and requalify all personnel that will be inspecting and abandoning inactive pipeline on AmeriGas' O&M Abandonment of Facilities procedure.
- i) Re-train and re-qualify all personnel regarding AmeriGas' O&M Damage Prevention Program and procedures.

RESPONSE:

Oahu Gas Service, Maui Gas Service, and AmeriGas Kona District employees have been retrained and have begun to follow the AmeriGas O&M Emergency Plan, Odorization of Gas (new), Abandonment of Facilities, and Damage Prevention procedures. Each District has scheduled and participated in training exercises with local emergency responders. AmeriGas has created a new Odor Concentration Level Testing procedure for the Hawaii Districts that includes a new record keeping form, and has secured the equipment necessary to perform this test. Each Hawaii District has inspected each

system and properly abandoned inactive services. Company personnel have been retrained and requalified on AmeriGas Abandonment of Facilities and Damage Prevention procedures.

5. 192.707 Line Markers for mains and transmission lines.

(a) Buried pipelines. Except as provided in paragraph (b) of this section, a line marker must be placed and maintained as close as practical over each buried main and transmission line:

- (1) At each crossing of a public road or railroad; and,**
- (2) Wherever necessary to identify the location of the transmission line or main to reduce the possibility of damage or interference.**

5. In regard to Item Number 5 of the Notice pertaining to not having line markers along each side of an aboveground section of a main line in an area accessible to the public, AmeriGas must:

- a) Follow AmeriGas' O&M Manual – Damage Prevention Program.
- b) Inspect the pipeline systems in all Districts and install pipeline markers where needed.

RESPONSE:

Oahu Gas Service, Maui Gas Service, and AmeriGas Kona have begun to follow the AmeriGas O&M Damage Prevention procedure. Hawaii Districts have inspected pipeline systems and have installed pipeline markers where needed.

6. 192.723 Distribution systems: Leakage surveys.

(a)...

(b) The type and scope of the leakage control program must be determined by the nature of the operations and the local conditions, but it must meet the following minimum requirements:

(1) A leakage survey with leak detector equipment must be conducted in business districts, including tests of the atmosphere in gas, electric, telephone, sewer, and water system manholes, at cracks in pavement and sidewalks, and at other locations providing an opportunity for finding gas leaks, at intervals not exceeding 15 months, but at least once each calendar year.

6. In regard to Item Number 6 of the Notice pertaining to not conducting leakage surveys with leak detector equipment in business districts, including tests of the atmosphere in gas, electric, telephone, sewer, and water system manholes, at cracks in pavement and sidewalks, and at other locations providing an opportunity for finding, AmeriGas must:

- a) Follow AmeriGas' O&M Manual – Leak Surveys.

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- b) Conduct leak surveys of all pipeline systems in the Maui District either by pressure test or by using leak survey equipment.
- c) Train and qualify all personnel that will be conducting leak survey using an instrument.

RESPONSE:

Oahu Gas Service, Maui Gas Service, and AmeriGas Kona have begun to follow the AmeriGas O&M Leak Survey procedure. The Maui Gas Service District has completed leak surveys of all pipeline systems they service by means of a pressure test or, for aboveground only piping by use of a CGI and leak detector solution. Personnel that conduct leak surveys have been requalified on using an instrument for this test. Here AmeriGas is providing documentation of the Maui system leak surveys and retraining records.

Thank you for your consideration in this matter. Please do not hesitate to contact me at 215-970-4159 or by email at david.hedrick@amerigas.com if you or your staff have any questions or require additional information.

Thank you,

David Hedrick

David Hedrick
Pipeline Safety Manager
AmeriGas Propane, LP

Cc: C. Serna, AmeriGas Area 55 Director
N. Chatriand, AmeriGas, West Region Safety Director
L. Whitmore, AmeriGas Pipeline Safety Manager
M. Langston, AmeriGas Group Safety Director

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Odorization of Gas, State of Hawaii

Relevant Regulations and Regulatory Guidance

To assure the proper concentration of odorant, each operator in Hawaii must confirm the addition of a warning agent so as to be detectable to a concentration in air of not over one-fifth the lower limit of flammability by conducting periodic sampling of combustible gases using an instrument capable of determining the percentage of gas in air at which the odor becomes readily detectable.

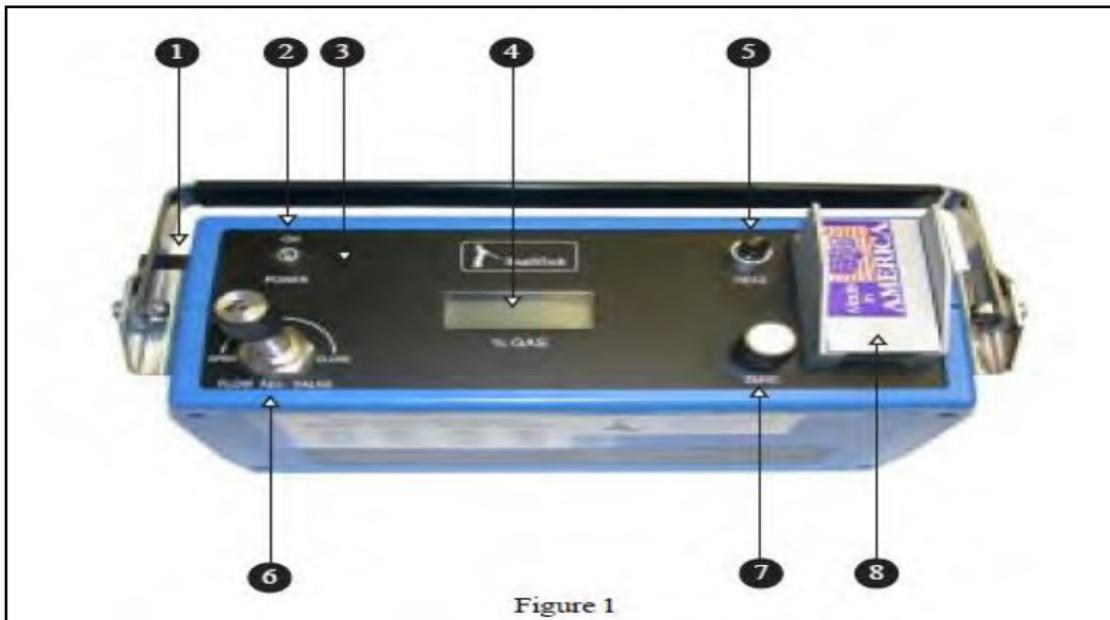
These tests shall be performed with an odorometer or equivalent device capable of determining the percentage of gas in air at which the odor becomes readily detectable by the tester in accordance with 49 C.F.R. §192.625(f).

Procedure

Operators must test odorant levels with an ODORATOR or a similar instrument at least once each calendar year, but with intervals not exceeding 15 months, at each LPG jurisdictional system(s). If odorant levels are not detectable at one-fifth the lower limit of flammability, the District Manager must be contacted *immediately* and prompt remedial action must be taken.

Odorator 1 Test Procedure

- Step 1:** Connect the sample hose to the gas supply outlet valve and to the ODORATOR inlet port (1 in Fig 1). The test point pressure should be at 14 inches water column or less and should never be used at a test point that is 4 psig or greater.
- Step 2:** *Gently*, turn the flow valve (6 in Fig 1) clockwise until closed.
- Step 3:** Turn the power switch (2 in Fig 1) to “on” position.
- Step 4:** Open the gas supply outlet valve.
- Step 5:** For new instruments turn the flow valve (6 in Fig 1) counter-clockwise fully to open the valve. This will condition the ODORATOR system. Wait for about 30 seconds or until you smell an odor of gas at the blower exhaust, whichever occurs first, then immediately turn the flow valve clockwise to fully close the valve.
- Step 6:** Push the read switch (5 in Fig 1) and while holding it down adjust the zero knob (7 in Fig 1) until the LCD reads “.00”. Release the read switch.



Step 7: Sniff the un-odorized air stream at the exhaust port.

Step 8: Slowly open the flow valve counter-clockwise while sniffing with your nose directly over the blower exhaust port approximately $\frac{3}{4}$ ". Your upper lip should lightly touch the front edge of the blower exhaust port.

Step 9: When a change in odor, or first faint smell of gas is detected, stop turning the flow valve and push the read switch. Make a note of the percent gas reading shown on the LCD (4 in Fig 1). Use the calibration chart (Fig 2) to determine the actual percent gas reading. This is the threshold limit value or threshold value.

NOTE: The operator should frequently pause when sniffing for odorant, moving the nose away from the instrument, breath fresh air, then continue the test. This precaution is necessary because the sense of smell fatigues rapidly during this type of test.

Step 10: Slowly open the flow metering valve another $\frac{1}{2}$ - 1 turn, wait about 30 seconds and then position the nose about $\frac{3}{4}$ of an inch above the exhaust port and sniff the exhaust.

Step 11: If the exhaust does not have a readily detectable odor repeat step 10. If the exhaust does have a readily detectable odor, push and hold the read switch down and make a note of the percent gas in air on the LCD. Use the calibration chart (Fig 2) to determine the actual percent gas reading. This reading is the **readily detectable limit**.

Note: Contact your District Manager immediately if the readily detectable limit is above 0.43% gas in air ($\frac{1}{5}$ of 2.15 lower flammability limit).

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Step 12: Close the gas supply valve.

Step 13: Disconnect the sample hose from the gas supply outlet.

Step 14: Fully open the flow adjustment valve counterclockwise and leave the ODORATOR on for approximately one minute after the test to purge the mixing chamber.

Step 15: Turn the ODORATOR off.

Step 16: Document the test and the sample site(s) on the AmeriGas Gas Odorization Test Report and place the report in the systems binder or folder.

HEATH CONSULTANTS INC.
PROPANE GAS CALIBRATION CHART

ODORATOR READING	ACTUAL % READING	ODORATOR READING	ACTUAL % READING
0.05 %	0.05 %	0.45 %	0.40 %
0.10 %	0.09 %	0.50 %	0.46 %
0.15 %	0.12 %	0.55 %	0.55 %
0.20 %	0.17 %	0.60 %	0.66 %
0.25 %	0.20 %	0.65 %	0.77 %
0.30 %	0.23 %	0.70 %	0.88 %
0.35 %	0.28 %	0.75 %	1.01 %
0.40 %	0.33 %	0.80 %	1.14 %

Figure 2

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If you cannot smell propane odorant or if the readily detectable limit is above 0.43% gas in air (1/5 of 2.15 lower flammability limit) the following steps must be taken:

Step 1: CONTACT your supervisor immediately.

Step 2: Have another qualified employee repeat the procedure.

Step 3: If low odorant is confirmed, the District Manager must make provisions for additional odorant to be added.

Step 4: The proper level of odorant must be confirmed after the additional odorant has been added and documented on the AmeriGas Gas Odorization Test Report .

Odorator 2 Test Procedure

NOTE: The operator should frequently pause when sniffing for odorant, moving the nose away from the instrument, breath fresh air then continue the test. This precaution is necessary because the sense of smell fatigues rapidly during this type of test.

1. Inspect the sample tubing and instrument for serviceability. Sniff tubing and instrument to determine if there is a retained gas odor. If the tubing has a retained gas odor, replace it. If the instrument has a retained gas odor, send it in to the manufacturer for maintenance.
2. Make sure all valves are closed – gas supply and Flow Metering Valve.
3. Connect the sample hose to the gas supply outlet and the ODORATOR 2 inlet port.
4. Wake up the ODORATOR 2 by holding down the power key (PWR).
5. After start up, the ODORATOR 2 should read 0.00 on the display. If the unit does not read 0.00 refer to the operator’s manual to re-zero the instrument.
6. **Open the Gas Supply Valve. Maximum inlet pressure is 4 psig.**
7. Completely open the Flow Metering Valve (turn counter clockwise). Wait 10 seconds to condition the unit, keep your nose away from the Exhaust Port.
8. Perform a Self-Test at least once per test day. Press “Self-Test” on the key pad. Wait for “SELFTTEST” and “OK” to show up on the display.
9. Close the Flow Metering Valve, (turn clockwise), do not over tighten, finger tight only.
10. The instrument is now conditioned and ready for testing.

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11. Wait about 30 seconds, place your nose approximately $\frac{3}{4}$ of an inch above the Exhaust Port and sniff the exhaust. The detected odor should still smell like an “instrument” and not odorant.
12. Press the “Zero” key, to automatically zero the instrument.
13. Press the “Read” key to record the zero value and the display will show “TDL” for performing a Threshold Detection Level test.
14. Slowly open the Flow Metering Valve counter clockwise by $\frac{1}{4}$ to $\frac{1}{2}$ turn, wait about 30 seconds, position the nose approximately $\frac{3}{4}$ inch above the Exhaust Port and sniff the exhaust.
15. If no odor is detected, repeat step 14.
16. The first faint smell of odor is called the TDL level. When detected, press the “Read” key to record the TDL reading. RDL will then be displayed
17. Continue to adjust the Flow Metering Valve and sniff until a Readily Detectable Level of the gas odor is detected.
18. Press the “Read” key. The RDL reading and GPS location will be automatically recorded.
19. The ODORATOR 2 will then enter “Purge” mode at the completion of the tests.
20. During “Purge” mode, press the up or down arrows on the key pad to scroll through the last ZERO, TDL, and RDL readings.
21. Record these readings on company forms.
22. If an additional test is required at the same location, press the “*” key and return to step #11.
23. If no additional testing is required, close the gas supply outlet valve. Disconnect the sample hose from the gas supply and verify the Flow Metering Valve is closed, finger tight only. The ODORATOR 2 will turn itself off after purging or it may be turned off by pressing and holding the “PWR” key until “ZZZZZ” appears on the display.



Figure 1. ODORATOR 2 Top Panel Layout

- | | |
|-----------------------------|-------------------|
| 1. Accessory door/pull knob | 7. Keypad |
| 2. Gas inlet | 8. Alarm |
| 3. Mini USB 2 | 9. GNSS antenna |
| 4. Flow metering valve | 10. Blower intake |
| 5. LCD | 11. Exhaust Port |
| 6. Charge LEDs | |

If you cannot smell propane odorant or if the readily detectable limit is above 0.43% gas in air (1/5 of 2.15 lower flammability limit) the following steps must be taken:

Step 1: CONTACT your supervisor immediately.

Step 2: Have another qualified employee repeat the procedure.

Step 3: If low odorant is confirmed, the District Manager must make provisions for additional odorant to be added.

Step 4: The proper level of odorant must be confirmed following the steps above after the additional odorant has been added and documented on the AmeriGas Gas Odorization Test Report .

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Record Retention

Records shall be preserved documenting each odorant concentration level test at a LPG jurisdictional system for a period of not less than 10 years. *AmeriGas policy dictates that the Bill of Lading receipts will be maintained in the daily folders for a minimum of 10 years.*

References:

- NFPA 58 - 2004 Edition
- 49 CFR 192.11 Petroleum Gas Systems
- 49 CFR 192.625 Odorization of Gas



Gas Odorization Test Report

System Name: _____

System Address: _____

Odorant Test Type: Odorator Stain Tube

Odorator: Make: _____ Model: _____

Serial #: _____ Last Calibration Date: _____

Odorator Test Readings

Test Location	Readings (% Gas in Air)	
	Threshold Reading % Gas in Air	Readily Detectable Reading % Gas in Air
1		
2		
3		

Contact your District Manager immediately if the Readily Detectable Limit is above 0.43% Gas in Air

Stain Tube: Detector Tube #: _____ Serial #: _____

Stain Tube Test Readings

Test Location	Readings (PPM)		
	Original Concentration Level	Temperature Correction Factor	Corrected Concentration Level
1			
2			
3			

The reading on the detector tube must be greater than the corrected concentration level

Temperature F	32	41	50	59	68	77	86	95	104
Correction Factor	1.7	1.55	1.4	1.2	1	0.93	0.85	0.78	0.7
Min. PPM Value	2.9	3.2	3.6	4.2	5	5.4	5.9	6.4	7.1

Inspector's Name: _____

Inspector's Signature: _____ Date: _____

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Emergency Plan

Purpose

The purpose of this emergency plan is to establish operating guidelines applicable to various emergency situations. The emergency plan includes:

- Provisions for responding to various emergencies.
- Emergency operations procedures.
- Provisions for maintaining personal contact with public officials of local government and their fire and police departments, prior to and during an emergency.
- Training of employees in the emergency operations procedures.

Scope

Response to emergency situations will vary depending on the location of the facility involved, system pressure and many other variables. Employees must take appropriate action in each emergency based on standard operating procedures and their own experience and knowledge.

An emergency condition exists when a Company representative has determined that extraordinary procedures, equipment, personnel and/or supplies must be employed to protect the public from existing or potential hazards. Emergencies identified herein include:

- Gas leak investigation
- Inside investigation
- Outside investigation
- Gas explosion and/or fire
- Natural disaster

Incident Command Center

The ICC will consist of personnel, facilities, equipment, communications and procedures, operating within a common organizational structure to gain control of a significant emergency situation. It is activated when, upon the judgment of the AmeriGas Area Director, a serious threat exists to our ability to provide safe and continuous service to a significant number of customers. In the absence of the AD he/she will designate backup person(s) responsible for activation considerations of the ICC.

- Major sections of the ICC include:
- Command (Management)
- Plan
- Operations
- Administration

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In a major emergency, overall control, mitigation and recovery efforts will be directed from the ICC, with the assistance from the Field Incident Commander (FIC) located at or near the scene. The ICC will provide a location, equipment and staff sufficient for strategic management of a major incident. The ICC will be equipped with communication equipment, call lists for personnel and services and other necessary supplies to support a 24 hour-a-day operations.

The Field Incident Commander will:

- Assume command of the incident location.
- Assess the emergency location.
- Determine mitigation strategies and set-up ICC, Staging, Operating areas.
- Request resources.
- Manage tactical mitigation of incident.
- Coordinate activities with other response agencies (Fire, Police, etc.)
- Coordinate the use of external resources.
- Prepare and communicate status reports to the ICC
- Call for additional support, as needed.
- Receive and implement direction from the ICC
- Declare the incident “over” when appropriate.

Requirement (192.615)

Each operator shall establish written procedures to minimize the hazard resulting from a gas pipeline emergency. At a minimum, the procedures must provide for the following:

- Receiving, identifying, and classifying notices of events which require immediate response by the operator.
- Establishing and maintaining adequate means of communication with appropriate fire, police, and other public officials.
- Prompt and effective response to a notice of each type of emergency, including the following:
 - Gas detected inside or near a building.
 - Fire located near or directly involving a pipeline facility.
 - Explosion occurring near or directly involving a pipeline facility.
 - Natural disaster.
- The availability of personnel, equipment, tools, and materials, as needed at the scene of an emergency.
- Actions directed toward protecting people first and then property.
- Emergency shutdown and pressure reduction in any section of the operator's pipeline system necessary to minimize hazards to life or property.
- Making safe any actual or potential hazard to life or property.

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- Notifying appropriate fire, police, and other public officials of gas pipeline emergencies and coordinating with them both planned responses and actual responses during an emergency.
- Safely restoring any service outage.
- Beginning action under §192.617, if applicable, as soon after the end of the emergency as possible.

Each operator shall:

Furnish its supervisors who are responsible for emergency action a copy of that portion of the latest edition of the emergency procedures established under paragraph (a) of this section as necessary for compliance with those procedures.

- Train the appropriate operating personnel to assure that they are knowledgeable of the emergency procedures and verify that the training is effective.
- Review employee activities to determine whether the procedures were effectively followed in each emergency.
- Each operator shall establish and maintain liaison with appropriate fire, police, and other public officials to:
 - Learn the responsibility and resources of each government organization that may respond to a gas pipeline emergency;
 - Acquaint the officials with the operator's ability in responding to a gas pipeline emergency
 - Identify the types of gas pipeline emergencies of which the operator notifies the officials; and
 - Plan how the operator and officials can engage in mutual assistance to minimize hazards to life or property.

Procedure

Emergency Response Procedures

Gas Leaks / Odors

If there is ANY report or other indication of a gas leak or gas odor, ***it must be treated as a potential leak, even if there is a possibility that the customer may be running out of gas.*** An employee must immediately respond to the customer location and conduct a gas leak investigation when gas odor or a gas leak is reported.

Receiving the Call

Emergency Call Centers can receive emergency notifications 24 hours per day, 7 days a week.

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The following are directions to employees who receive emergency calls.

Document the following information:

- Name, address and telephone number of caller.
- Location of emergency. Request intersecting streets or nearby landmarks.
- Nature of problem. Emergencies such as odor complaints, fire, explosion or any others as noted in this plan, require immediate response.
- Location of problem – indoors versus outdoors.

Advise the customer to:

- **No Flames or Sparks:** Put out all smoking materials & other open flames. Do not use lights, appliances, telephones, including cell phones. Flames or sparks from these can trigger an explosion.
- **Leave the Area Immediately:** Get everyone out of the building or area where you suspect gas is leaking.
- **Shut-Off the Gas:** Turn off the main gas supply valve on the propane tank if it is safe to do so by turning the valve to the right to close (clockwise). In a Multi-Meter or Multi-Unit installation the gas can be turned off at the supply shut off valve prior to the meter or regulator if the gas odor or possible leak was reported within the unit.
- **Do Not Return to the Area or Building until AmeriGas or the local officials who have responded determine it is safe to do so.**
- **Get Your System Checked:** Before you attempt to use any of your propane appliances, AmeriGas personnel or another qualified propane service technician must conduct a leak check.

AmeriGas Responder Procedure:

The following procedures are to be followed when responding to Gas Leak / Gas Odor Calls.

- Verify that the customer is out of the building
- Upon arrival, check to see that container valve(s) or the shut off valve(s) on the meter(s) is closed.
- Verify the location of the leak / odor with customer.
- If container(s) is out of gas, **follow AP 8.3 Out of Gas Delivery.**

If the gas leak or odor complaint is indoors, **follow AP 9.4 System Leak Checks.**

If the gas leak or odor is indoors or near a building, the first priority is to “make it safe,” protecting people first and then property.

Perform a leak check and/or leak test and properly document it on an SSO.

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If a leak is found, repair the leak and perform another leak check and/or leak test and properly document it on the SSO.

After completion of a successful leak check (**no leaks**), place all appliances back into service and light pilots, **follow AP 11.6, Appliance Lighting**

Complete a Sales & Service Work Order by documenting all services performed, including, but not limited to the leak checks performed.

Contact the customer and inform them of the completed service.

If the gas leak or odor complaint is outdoors, refer to the Leak Survey procedure of the O&M manual, and use the following guidelines

Observe conditions in the vicinity and in the immediate area of the complaint call, and note the following:

- Odors detected in the area
- Wind direction
- Construction in the area
- Company/Contractor crews in the area
- Sewer work in progress
- Bubbles in water puddles
- Dust particles blowing from a hole
- The sound of gas movement
- Dead or dying grass or other vegetation

Circle the building, fan and sniff the air with CGI or flame ionization (FI) unit to identify the odor as gas or another substance.

Properly zero the CGI in uncontaminated air prior to taking readings.

To uncover the potential hazard, proceed to the street and check:

- Catch basins
- Manholes
- Sewer drains
- Valve boxes
- Cracks in the pavement
- Utility poles
- Fence posts
- Recent patch work in the street
- Sewer work in the area
- Dead spots of grass

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If a leak is located, continue to check for multiple leaks, especially if excavation damage is suspected. In the case of excavation damage, the pipe could have been moved or stressed, and a failure could occur in a coupling or fitting away from the excavation site.

If the leak has not been located, check all outdoor appliances, fuel line and fixtures for leakage:

- Gas meters
- Regulator vents
- Propane tanks

Determine the extent of the leak using any surface opening, bar holes, or test holes, as needed.

Once the general leak area has been defined, pinpointing is used to better define the source and extent of the leak. Pinpointing can limit the amount of excavation

If the spread pattern of the leak cannot be determined, evacuate any buildings deemed at risk.

At the time of the leak investigation the following shall be considered:

- It may be necessary to evacuate nearby buildings.
- A leak at the main or service line should be vented to atmosphere if possible, to prevent entrance to nearby buildings.

Ventilate all manholes and other removable street openings where gas is present.

- Avoid causing sparks while removing covers.
- Place barricades at each open hole, including manholes.
- Do not allow smoking near any known leak location(s).
- Place warning signs when necessary to advise approaching motorists.
- Do not enter any manhole.

Notify your supervisor as soon as practical.

Keep a fire extinguisher available at all times.

The flow of gas to the leak area shall be stopped when necessary.

An employee shall not enter an excavation or other opening alone in such a situation and shall not expose himself to hazards unnecessarily.

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When necessary, appropriate in-line valves shall be identified by using mapping and valve reports and be physically located for prompt shutdown. The actual closing of valves should only be undertaken after consulting the District Manager, Area Director or Regional Safety Manager unless the employee believes that there is an imminent danger.

Police and fire departments shall be notified, if warranted, about the existing situation.

Gas Explosion and/or Fire

Explosion

Upon indication that an explosion has occurred, the first employee(s) on the scene of an explosion (regardless of cause) shall coordinate response with the on scene site coordinator.

If emergency response officials have not yet arrived on the scene, call 911 and use the following guidelines:

- Ensure that people first then property are protected from additional occurrences.
- Clear the danger area and start evacuating buildings in the area.
- Re-route traffic.
- If unignited gas is escaping, take reasonable precautions to prevent accidental ignition.
- Contact the DM/AD or RSD to report the incident and request additional assistance.
- If it is suspected that gas may be involved in the explosion, a subsurface gas detection survey shall be performed around the entire perimeter of any building(s) involved in the incident. Check adjoining properties on all sides of the affected area or address to determine if gas is migrating from another location.

Conduct an outdoor leak investigation.

Perform continuous monitoring of all structures (indoors and outdoors) until the leak is located and made safe.

If it is determined that gas is not involved, verify with the incident commander that it is acceptable for all AmeriGas personnel to depart from the site.

Fire

Upon indication that gas may be or is involved in a fire, or when fire is located near or directly involving a gas facility, AmeriGas responders shall:

- Isolate the danger area, and re-route traffic as necessary to protect the general public until emergency responders arrive.
- If gas is burning out of control inside a building, do NOT enter the building:

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- Call the fire department or 911.
- Shut the gas off at the tank, gas meter or the curb valve if they are in a safe location.
- The gas line must be disconnected / plugged / retired as soon as the site may be accessed.
- In certain industrial or commercial areas, fire response personnel may rely on the gas company to shut off service.

If gas is burning outdoors, the best method of controlling the fire is to shut off the gas flow. In most cases do not attempt to extinguish the fire while gas is still escaping since an explosive atmosphere may result.

In order to protect life, it may be absolutely necessary to extinguish a gas fire before the gas flow can be stopped.

If the fire must be extinguished prior to stopping gas flow, wet the surrounding area to prevent re-ignition.

Anticipate and evaluate the potential for damage to polyethylene pipe exposed to the heat of flames or direct flame impingement. If any plastic mains, services or rubber gaskets are exposed to the heat of fire, then there is a potential hazard. Steps shall be taken to prevent system damage and the release and possible re-ignition of gas.

When necessary, appropriate in-line valves shall be identified by using mapping and valve reports and be physically located for prompt shutdown. Valves (other than those located on the meter set) to control the escaping gas should be operated by qualified gas company personnel or qualified contractors only.

Gas valves shall not be turned back on except by qualified gas company personnel or qualified contractors.

Arrange to squeeze off plastic services or plastic mains where valves are not safely available. Efforts may be necessary to stop off metallic mains which cannot be shut down in any other manner. Be aware of the formation of static electricity on plastic pipe which can cause ignition, and follow necessary safety procedures.

If the gas supply cannot be safely shut off, direct the Fire Department to spray surrounding combustibles with water if they are in danger of igniting.

If gas is suspected of being the primary reason for the fire, odorant tests shall be made in the immediate affected area and at the closest delivery point. All information must be documented,

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including but not limited to operator(s), equipment ID, time, date, weather conditions, temperature, threshold, readily detectable, etc.

Leak tests shall be performed on any facilities that may have been affected by the incident at operating pressure and that data shall be documented.

With approval from the Fire Marshall, secure any physical evidence from the site.

Natural Disaster

When the Company is notified of a flood, earthquake or tornado that has a potential to affect Company facilities, there are critical steps which must be followed to ensure the integrity of the system. All Company personnel, when responding to notifications of floods or earthquakes which may involve an AmeriGas gas facility, shall follow the methods established in this procedure.

The Area Director shall coordinate local operations during a natural disaster. Notification shall be made to the District Manager.

Direct resources in a manner to determine the potential effects of the disaster on the pipeline system. A subsurface gas detection survey shall be performed around the entire area including the perimeter of any building(s) involved in any incident. The following procedures shall be used during a natural disaster.

Maintain contact and coordinate with local emergency responders (fire, police, etc.) on gas emergencies, notifying them of affected pipeline location(s) and condition(s), and providing other relevant information, if applicable.

Position personnel to take emergency actions, such as shut down, isolation or containment.

Initiate emergency shutdown procedures as necessary.

Valves shall be shut off only when it is positively determined that a portion of the system has been flooded.

Regulator station(s) shall be shut off only when it is positively determined that the system served by that station or stations has been flooded.

Civil Disturbances

The hazards generally encountered are from vandalism and may involve broken lines, open valves or damaged regulators and meters.

Give priority to the control of any leaks.

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Make repairs. If repairs cannot be made at the time, isolate and lock off the affected portions of the system.

Damage to Major Segments of the System

Generally, others digging and damaging the piping cause this type of damage.

Isolate the damaged sections. Make repairs. If repairs cannot be made at the time, lock off the isolated sections until repairs can be made. Ensure the remaining portions of the piping system are leak-free.

Make sure there is no flammable concentration of gas pocketed in ditches or low-lying areas.

Blasting

When you are aware of any blasting having been done in the vicinity of the gas system, survey the system to determine if there is any evidence of a leak or other damage. Respond to any hazardous conditions as outlined elsewhere in this Section.

Interruption of Gas Supply

The primary objective is to determine the reasons for the interruption and correct the problem. Respond to any hazardous conditions as outlined elsewhere in this Section.

Gas service is not to be resumed until conditions are corrected for safe operation, and all pressure/leak tests are satisfactorily performed.

When restoring service to a system serving multiple customers, service is to be restored on a house-to-house basis. Shut each customer off at the service riser. Purge the lines, if necessary.

Conduct a leak check of all service and house lines, using a water manometer and/or block gauge.

If you cannot get into a house or metered service because the customer is not at home, do not restore service. Lock the customer's service off and leave a red tag in a conspicuous place requesting the customer to contact the gas company for restoring service.

Rules Applying to All of the Above Emergencies

When working with any gas leaks, make sure the area is kept free of ignition sources.

When repairs have been made, make sure the area is free of flammable concentrations of gas, inside and outside of buildings in the area, using a quantitative combustible gas indicator.

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When repairs have been made to damaged piping, ensure the affected sections are leak-free before re-introducing gas. If repairs cannot be made to any part of the system at the time, the affected sections will be made safe until permanent repairs can be made.

Where appropriate, and under the direction of the AmeriGas Legal Department, failed equipment will be sent to a laboratory for examination for the purpose of determining the cause(s) of the failure and minimize the possibility of recurrence.

Accident and Incident Reporting – 49 CFR-191.5, 191.9(a), 191.9(b)

Telephone or submit electronically an incident report at the earliest possible moment, **but in any case within one hour (49 CFR 191.5)** of a release of LP-gas from a system involving:

- An event that involves a release of gas from a pipeline, or liquefied petroleum gas that results in one or more of the following consequences:
 - A death, or personal injury necessitating in-patient hospitalization ¹; or
 - Estimated property damage of \$50,000 or more, including loss to the operator and others, or both, but excluding cost of gas lost; or
 - Unintentional estimated gas loss of three million cubic feet (82,262 gallons) or more;
- An event that results in an emergency shutdown of an LPG facility. Activation of an emergency shutdown system for reasons other than an actual emergency does not constitute an incident.
- An event that is significant in the judgment of the operator, even though it did not meet the above criteria.

The telephone or electronic incident report is made to the National Response Center at:

- TOLL FREE (800) 424-8802
- IN WASHINGTON, D.C. (202) 267-2675
- 24 HOURS EVERY DAY
- or electronically at <http://www.nrc.uscg.mil>

The report must include the following information:

- (1) Names of operator and person making report and their telephone numbers.
- (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 the operator that are relevant to the cause of the incident or extent of the damages.

¹ A worker fatality must also be reported to the Occupational Safety and Health Administration (OSHA) within 8 hours and any amputation, loss of an eye, or in-patient hospitalization must be reported to OSHA within 24 hours. Injury reporting can be made to the OSHA 24-hour hotline at 1-800-321-6742.

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Within 48 hours after the confirmed discovery of an incident, to the extent practicable, an operator must revise or confirm its initial notice with an estimate of the amount of product released, an estimate of the number of fatalities and injuries, and all other significant facts that are known by the operator that are relevant to the cause of the incident or extent of the damages. If there are no changes or revisions to the initial report, the operator must confirm the estimates in its initial report.

An incident requiring a telephone report must be followed by a written report, which is to be submitted electronically not more than 30 days after detection of the incident to <http://portal.phmsa.dot.gov/pipeline> [49 CFR 191.9 (a)]

When additional relevant information is acquired a supplemental report will be filed that clearly ties back to the original report as required by 49 CFR 191.9 (b). **Report Form RSPA F7100-1**

When damage is \$50,000 or more, Washington DC must be notified and a completed DOT Form RSPA F 7100.0 must be provided electronically within 48 hours of discovery of the incident.

Media Contact, Public and Private Statements

No statement or release of any specific information is to be given without authorization from the President of AmeriGas.

Review of Emergency Response Plans

After each emergency, whether actual or simulated, conduct a review of the procedures followed to determine if the emergency response plan was effective.

Emergency Responder

DM's are required to take the Module 3: Emergency Responder Training for DM's before engaging in any communications or conducting any drills or plans with emergency responders. If you require this training, please contact the OQ Administrator in Valley Forge. The eight step checklist for tactical procedures (see pages 17-31) must be used when developing the emergency response plan with the local emergency officials.

Emergency Contacts: The DM is required to communicate, to local and state emergency officials, current contact information and confirm the contact information for the local emergency responders.

Liaison with Emergency Officials: Communication with emergency responders should include detailed information pertaining to the pipeline facility located within their jurisdiction.

Documentation of meeting shall be retained including names, and items that were discussed. The documentation shall be retained in the emergency plan.

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Emergency Response Plans

No emergency plan can cover all situations and conditions. There is no substitute for sound judgment by the persons involved. In an emergency, the safety of the people is the highest priority.

Annually the DM is required to meet with the local emergency responders to communicate emergency response plans and increase awareness of pipelines and responses to emergencies.

Emergency Drills and Exercises: Districts are to participate in emergency response drills and deployment exercises with the local emergency responders to establish unified incident command roles, operating procedures and preparedness for various emergency scenarios where appropriate. District participation with these exercises is to occur at least every 5 years.

Emergency Telephone Numbers

Post emergency telephone numbers for police, fire, hospital, burn center, emergency response group, etc., on the telephones or in a highly visible location in the District Office. Use 911 if that is the proper emergency number for your location.

Post District contact telephone numbers on propane storage tanks and fence gates, if applicable, for public use. Ensure there is a positive method of contacting qualified emergency personnel outside of working hours. For Districts not using the Emergency Communication Center (ECC), use an answering service or machine that directs the caller to a specific emergency contact.

An internal emergency response list of personnel with names and telephone numbers prioritized will be retained in each District.

A list of equipment, tools, and materials, as needed at the scene of an emergency will be retained in each District.

Maintain all repair equipment necessary to control an emergency in a location that is known to, and accessible to, all employees at any time, and ensure that appropriate employees know how to use the equipment that may be required from other sources.

Discuss the various types of emergencies that could occur with the appropriate personnel.

Each employee who delivers propane or installs or services the gas system will be alert to any unsafe or potentially unsafe condition or procedure that may be encountered. Correct the problems, if possible; if not, take action, to include shutting off the gas supply to the area, and report the situation to the appropriate personnel.

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Investigation of Failures Requirement (192.617)

Each operator shall establish procedures for analyzing accidents and failures, including the selection of samples of the failed facility or equipment for laboratory examination, where appropriate, for the purpose of determining the causes of the failure and minimizing the possibility of a recurrence.

This document describes procedures to be used to report and investigate material failures involving pipeline facilities. The goal of the failure investigation is to find the root cause of the failure in order that corrective action may be taken to prevent future failures.

The procedure is applicable to material failures experienced on PHMSA jurisdictional facilities.

This procedure is not applicable to customer-owned equipment or piping, vehicular accidents, or occupational injuries.

The AmeriGas emergency plan shall be implemented, as appropriate, when a material failure occurs. Not all occurrences of a failure will require the implementation of the emergency plan.

If a failure results in a DOT reportable incident as described in PHMSA Form 7100.1, follow the appropriate reporting requirements to PHMSA, and the local Authority Having Jurisdiction (AHJ). Information should also be recorded on Material Investigation Failure Report. The forms should then be sent to the AmeriGas OPS Corporate Compliance Manager or other designated person. All failures, including excavation, that are not a DOT reportable must still be documented. Documentation shall be kept with the inspections of that system. Failures that should be reported could occur during installation of mains, services, etc., or may occur any time after installation.

Reportable failures that do not qualify as a DOT reportable incident or are not caused by excavation damage must still be documented. This documentation should be completed on the top portion of the Material Investigation Failure Report. The bottom portion of this report shall also be completed for mechanical fitting failures that result in a Grade 1 leak. The Material Investigation Failure Report should then be sent to the AmeriGas OPS Corporate Compliance Manager or other designated person. Failures that should be reported could occur during installation of mains, services, etc., or may also occur any time after installation. If the cause of the failure or defect appears procedural or equipment related in nature, it should be submitted on the Material Investigation Failure Report and reviewed for evaluation and corrective action.

Possible Failures:

- Inoperable valves that cannot be corrected with normal maintenance;
- Relief or regulator failures; (Note: Pressures that exceed the MAOP plus allowable build-up shall be treated in accordance with the procedures for a Safety Related Condition).
- Meter failures and malfunctions; and

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- Cracks, leaks or other failures of any flanges, fitting or other components.
- Premature tool and equipment (i.e. tapping and stopping equipment, leak survey equipment, and pipe locator equipment) failures. Equipment replacement or repairs that are the result of normal usage do not need to be reported.

The completed form, along with the failed specimen, should be sent to the AmeriGas OPS Corporate Compliance Manager. If it is not practical to send the failed facility, it should be retained in a safe location where it can be examined. If it is determined that a facility has a high rate of failure, and the reason for the failure has been established, the failed facility may not need to be preserved. The AmeriGas OPS Corporate Compliance Manager or other designated person will communicate to Operations if certain failed facilities no longer need to be preserved. However, a particular facility may need to be retained.

Those items that have high rates of failure must be documented, for example, mechanical tee failures may be documented on a separate spreadsheet for tracking purposes.

Mechanical Fitting Failure Reports (191.12)

An operator must submit electronically a mechanical fitting failure report, PHMSA Form F-7100.1-2, for each mechanical fitting failure that occurs within a calendar year not later than March 15 of the following year (for example, all mechanical failure reports for calendar year 2014 must be submitted no later than March 15, 2015). Alternatively, an operator may elect to submit its reports throughout the year. In addition, an operator must also report this information to the State pipeline safety authority if a State has obtained regulatory authority over the operator's pipeline

Failure Investigation and Preservation

Detailed investigation of a material failure should be conducted. Photographs should be taken of the failure site and surrounding area, when practical.

The failed specimen needs to be preserved and handled carefully for possible metallurgical analysis or pressure tests, etc. The failure surface shall be protected during the cutting, lifting, identifying and shipping of pipe and/or fitting.

The failed specimen should be preserved in the following manner:

- Avoid cutting too close to the failure so that the pressure (or other) testing may occur. When possible allow six (6) inches or two (2) pipe diameters of good pipe on each side of the fitting or joint that has failed.
- Do not paint or attempt to clean the specimen.
- If applicable, identify the orientation of the specimen with respect to the remaining facilities and fixed landmarks. Also indicate the direction of the gas flow.

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- If the specimen was involved, or has not been ruled out as being involved, in a loss event (property damage or injury claim), the AmeriGas OPS Corporate Compliance Manager or other designated person should be notified. In addition, in such situations, the specimen should be treated as evidence and recorded on the AmeriGas Chain of Custody Log to identify the company material potentially involved in a failure or loss event.

Recover and preserve all AmeriGas-owned gas equipment that survives an incident such as fire or explosion, even when the cause has been determined to be other than gas related. Tag and maintain this equipment until the case is officially closed.

The AmeriGas OPS Corporate Compliance Manager or other designated person shall coordinate the analysis of failed specimens and report findings, as appropriate. Any necessary additional follow-up action such as additional leak surveys, removal of the material from stock, etc., will be established after the cause of the failure has been determined.

Safety Related Condition Reports – 49 CFR 191.23

OPS require operators of LP-gas systems to report certain safety-related conditions. **See 49 CFR section 191.25 for information on report specifics.**

A written report must be filed within five working days after the operator first determines that a "safety related condition" exists, but not later than ten working days after the day the operator discovers the condition.

Each operator is also required to update its operations and maintenance plan to include instructions enabling personnel who perform operation and maintenance activities to recognize conditions that may be safety-related conditions.

Typical conditions that would need to be reported by a small operator include:

- unintended movement or abnormal loading of pipeline facilities by environmental causes such as earthquakes, landslides, or floods, that impairs the serviceability of a pipeline; or
- any malfunction or operating error that causes the pressure of a pipeline to rise above its maximum allowable operating pressure plus the pressure build-up allowed for operation of pressure limiting or control devices; or
- a leak that constitutes an emergency and is not repaired within five days of determination.

Safety related conditions that do not require a report include:

- condition on a customer owned service line; or
- a condition resulting in an incident, as defined in **49 CFR 191.3.**; or
- a condition on a pipeline more than 220 yards from any building or outdoor place of assembly, unless it is within the right-of-way of an active railroad, paved road, or highway; or a condition that is corrected before the report-filing deadline, except for certain corrosion related conditions.

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See **49 CFR 191.23 (b)** for further information.

Address for Safety-Related Condition Reports

Reports may be transmitted by electronic mail to *InformationResourcesManager@dot.gov* or by facsimile at (202) 366-7128.

Annual Distribution Report - 191.11

For all company systems that serve 100 or more customers from a single source the company will submit electronically each year, not later than March 15, an Annual Report for Gas Distribution System (DOT Form RSPA-F 7100.1-1), with a copy to Pipeline and Hazardous Material Safety Administration and a copy to the state



FIGURE 7-3 Fire control operations.

TACTICAL DECISION-MAKING FRAMEWORK

Emergencies are handled safely and effectively when the responders are dependent on a predetermined and approved system for managing the emergency. Much like a football team which plays by a set of rules and executes plays on game day using the quarterback's playbook, the Incident Commander and emergency responders will be more effective when they are not dependent on one person to tell them what to do during every step of the operation. Once the Incident Commander commits to a general strategy (offensive, defensive, or nonintervention) emergency responders must be able to implement the IC's game plan without a great deal of direct supervision.

The Eight Step Process[®] is a widely used general Standard Operating Procedure (SOP) that has been adopted by many public safety and industrial Emergency Response Teams for managing hazardous materials emergencies. The procedure outlined below can serve as a general framework for systematically resolving a propane emergency. However, it will be most effective when it is adopted and incorporated into a local Emergency Response Plan, SOP or training program. Like the adoption of NIMS, understanding and implementing the fundamental concepts is more important than adopting the exact terminology as long as terms are consistent.

The basic order of the tactical decision-making process should include:

1. Site Management and Control
2. Identify the Problem
3. Evaluate the Hazards and Risks
4. Select the Proper Protective Clothing
5. Develop Plan of Action and Coordinate Resources
6. Implement Response Objectives
7. Decontamination and Clean-up Operations
8. Terminate the Emergency

A model tactical procedure for managing propane emergencies based on the Eight Step Process[®] is provided as a general guideline for preparing a local Standard Operating Procedure. The information is referenced from the textbook, *Hazardous Materials: Managing the Incident*, (3rd edition).

NOTE: For more information on the Eight Step Process[®], consult Chapters 4 through 12 in the textbook *Hazardous Materials: Managing the Incident*, (3rd edition) (Oklahoma State University Fire Protection Publications, Stillwater, OK, 2005; available from Fire Protection Publications at 800-654-4055 or Red Hat Publishing at 800-603-7700).

TACTICAL PROCEDURE BASED ON THE EIGHT STEP PROCESS[®]

STEP 1: SITE MANAGEMENT AND CONTROL

FUNCTION: Site management and control is managing and securing the physical layout of the incident. Reality is that you cannot safely and effectively manage the incident if you do not have control of the scene. As a result, site management and control is a critical benchmark in the overall success of the response and is the foundation upon which all subsequent response functions and tactics are built.

GOAL: To establish the playing field so that all subsequent response operations can be implemented both safely and effectively.

CHECKLIST:

- During the approach to the incident scene, avoid committing or positioning personnel and units in a hazardous position. Assess the situation and consider having an escape route out of the area if conditions should suddenly deteriorate. Remember the basics—uphill and upwind.

CAUTION: Emergency responders must be aware that certain chemical releases may travel throughout the scene and impact response routes. In addition, LP-Gas and some other chemicals (e.g., anhydrous ammonia) may be mistaken for fog or other normal weather and environmental conditions. The danger area may extend beyond the visible vapor cloud.

- Establish command of the incident in accordance with the jurisdiction's Incident Management System procedure and establish an Incident Command Post. If other public safety units are already on-scene, ensure operations are coordinated and unified.
- Establish a Staging Area (Level I, II) for additional responding equipment and personnel.
- Establish an isolation perimeter (i.e., outer perimeter) to isolate the area and deny entry. Establish access control—restrict emergency site access to authorized essential personnel; all non-essential personnel should be isolated from the problem. Isolation perimeters should include land, water and air areas.

- ❑ Establish a hot zone or inner perimeter as the “playing field.” The location of the inner hot zone should be identified and communicated to all personnel operating on the site. Methods of identifying the restricted area would include visible landmarks, barricade tape, traffic cones, etc.
- ❑ Positive-pressure self-contained breathing apparatus (SCBA) and full protective clothing are required for personnel entering the hot zone. Rescue operations should follow the “two in two out” guideline.
- ❑ If civilians are injured or are casualties and personal contamination is suspected, isolate all personnel until emergency decon can be established.
- ❑ Initiate public protective actions (PPA).

STREET SMART TIPS:

- ❑ Site Management establishes the playing field for the players (responders) and the spectators (everyone else).
- ❑ The initial 10 minutes of the incident will determine operations for the next 60 minutes, and the first 60 minutes will determine operations for the first 8 hours.
- ❑ Don’t try to control more real estate than you can effectively isolate and control.
- ❑ Remember the basics. The more time, distance and shielding between you and the material, the lower the risk will be.
- ❑ Large releases of propane may travel great distances, find ignition sources and flash back to the source of the leak. During approach to the incident scene, avoid positioning personnel and vehicles in a hazardous position or location.
- ❑ Designate an emergency evacuation signal and identify rally points if emergency evacuation is necessary.
- ❑ Remember the *First Law of Hot Zone Operations* when dealing with propane and other hazardous materials: To play in the game you must:
 - Be trained to play
 - Be dressed to play
 - Have a buddy system with back-up personnel (minimum of 2 in/2 out)
 - Have decon established, as appropriate
 - Coordinate with Command and Safety

STEP 2: IDENTIFY THE PROBLEM

FUNCTION: Identify the scope and nature of the problem. This includes:

- Recognition, identification, and verification of the hazardous materials involved in the incident;
- Type of container, as appropriate; and
- Exposures.

Methods of identification include analyzing container shapes, markings, labels and placards, and facility documents (e.g., Material Safety Data Sheets or MSDS); using monitoring and detection equipment; and identifying by the senses (i.e., physical observations, smell, reports from victims and facility representatives, etc.). Responders should remember that even when the hazardous substances involved have been identified, the information should always be verified.

GOAL: To identify the scope and nature of the problem, including the type and nature of hazardous materials involved as appropriate.

CHECKLIST:

- Survey the incident—identify the nature and severity of the immediate problem, including the recognition, identification and verification of the material(s) involved, type of LP-Gas or other container involved, and any potential or existing life hazards. If multiple problems exist, prioritize them and make independent assignments.
- Clues for determining if LP-Gas is involved include:
 - Occupancy and location
 - Container shapes
 - Markings and colors
 - Placards and labels
 - Shipping papers or facility documents
 - Monitoring and detection equipment
 - Senses, including physical observations, smell, etc.
- Factors to consider in assessing the type of container involved include:
 - Bulk vs. non-bulk
 - Pressurized vs. non-pressurized
 - Number of compartments
 - Material(s) of construction
 - Pressure relief devices
- Conduct offensive or defensive reconnaissance, as necessary, to gather intel on the situation.

STREET SMART TIPS:

- What is the scope and nature of the problem? Considerations should include:
 - Is the problem a vapor release or a liquid release?
 - What is the source of the stress and container breach? Open valve, piping failure, container breach?
 - Fire or no fire scenario?
 - Is fire impinging upon the vapor space?
- A problem well-defined is half-solved. Assume that initial information may not be correct. Always verify your initial information. Verify—verify—verify.

- Conduct recon operations, as necessary.
 - *Defensive Recon.* Objective is to obtain information on site layout, weapon condition, physical hazards, access, and other related conditions from beyond the inner perimeter. This is normally obtained through threat assessments, interviews, physical observations, etc.
 - *Offensive Recon.* Objective is to obtain intel and incident information by physically entering the inner perimeter.
- Never permit responders to perform activities such as leak control inside areas where unignited propane has accumulated. Verify vapor concentrations with flammable gas detection and monitoring equipment.
- Be alert for the presence of improvised explosive devices (IED) and secondary events. IED clues can include:
 - Abandoned container out of place for the surroundings
 - Obvious explosive device components, such as batteries, timers, blasting caps, charges, etc.
 - Partially exploded devices found
 - Unusual or foreign devices attached to hazmat containers, especially liquefied and compressed gas cylinders, flammable liquid containers, bulk storage tanks and vessels, etc.
 - Unattended vehicles not appropriate to the immediate environment

STEP 3: HAZARD AND RISK EVALUATION

FUNCTION: This is THE most critical function that emergency response personnel perform. The primary objective of the risk evaluation process is to determine whether or not responders should intervene, and what strategical objectives and tactical options should be pursued to control the problem at hand. You can't get this wrong. If you lack the expertise to do this function adequately, get help from someone who can provide that assistance, such as local HMRTs and propane product/container specialists.

GOAL: To assess the hazards present, evaluate the level of risk, and establish an Incident Action Plan (IAP) to make the problem go away.

CHECKLIST:

- Assess the hazards posed by the problem (health, physical, chemical, weapons, other). Pay particular attention to the unique properties of propane, including its flammable range (2.15% to 9.6%) and its vapor density (1.5).
- Collect, prioritize and manage hazard data and information from all sources, as appropriate, including:
 - Technical reference manuals
 - Technical information sources
 - Hazmat databases
 - Technical information specialists, such as product and container specialists

- MSDS
- Monitoring and Detection Equipment
- ❑ Primary Technical Information Centers available to public safety personnel include:
 - CHEMTREC—(800) 924-9300
 - National Response Center (NRC) serves as the federal single point-of-contact for accessing federal assistance
 - State single point-of-contact
 - LP-Gas product or container specialists, including local propane marketing and distribution representatives
- ❑ Air monitoring and the *General Hazmat Behavior Model* are critical in implementing a “risk-based response.” Understand the relationship between the container and the hazmat(s) involved.
 - Stress
 - Breach
 - Release
 - Engulf
 - Impingement
 - Harm
- ❑ If fire is involved, how long has the fire been burning? If there fire impingement upon any containers? Is an adequate, sustained and reliable water supply available?
- ❑ Based upon the risk evaluation process, develop your IAP. Determine whether the incident should be handled offensively, defensively, or by non-intervention. Remember that offensive tactics increase the risks to emergency responders.
 - **Offensive Tactics**—Require responders to control/mitigate the emergency from within/inside the area of high risk. In a fire situation, this will include the ability to provide a reliable and sustained water supply.
 - **Defensive Tactics**—Permits responders to control/mitigate the emergency remote from the area of highest risk.
 - **Non-Intervention Tactics**—Pursuing a passive attack posture until the arrival of additional personnel or equipment, or allowing the fire to completely burn itself out.

STRATEGY	OFFENSIVE	DEFENSIVE	NON-INTERVENTION
Rescue	X		
Public Protective Actions	X	X	X
Spill Control	X	X	
Leak Control	X		
Fire Control	X	X	
Clean-up and Recovery	X	X	

STREET SMART TIPS:

- Focus on those things that you can change and that will make a positive difference to the outcome.
- Every incident will arrive at some outcome...with or without your help. If you can't change the outcome, why get involved?
- There's nothing wrong with taking a risk. If there is much to be gained, there is much to be risked. If there is little to be gained, then little should be risked.
- Public safety personnel should view their roles as that of risk evaluators, rather than risk takers where hazardous materials are involved. Bad risk takers get buried; effective risk evaluators come home.
- Hour One Priorities within the IAP are:
 - Establish Site Management and Control
 - Determine the materials/agents involved
 - Ensure the safety of all personnel from ALL hazards
 - Ensure that PPE is appropriate for the hazards
 - Initiate tactical objectives to accomplish initial rescue, decon, medical, and public protective action needs
 - If criminal activities are involved (e.g., terrorism incidents), maintain the integrity of potential evidence

STEP 4: SELECT PERSONAL PROTECTIVE CLOTHING AND EQUIPMENT

FUNCTION: Based upon the results of the hazard and risk assessment process, emergency response personnel will select the proper level of personal protective clothing and equipment. Structural firefighting protective clothing is adequate for LP-Gas fires and releases, but if additional hazardous materials are involved (e.g., poison liquids or gases, corrosive liquids), chemical splash or vapor protective clothing may be required.

GOAL: To ensure that all emergency response personnel have the appropriate level of personal protective clothing and equipment for the expected tasks.

CHECKLIST:

- The selection of personal protective clothing will depend upon the hazards and properties of the materials involved, and the response objectives to be implemented (i.e., offensive, defensive or non-intervention). In evaluating the use of specialized protective clothing, the following factors must be considered:
 - The hazard to be encountered, including the specific tasks to be performed
 - The tasks to be performed (e.g., entry, decon, support)
 - The level and type of specialized protective clothing to be utilized
 - The capabilities of the individual(s) who will use the PPE in a hostile envi-

ronment. Remember—fighting a large propane fire can place great deal of both physiological and psychological stress on an individual.

- ❑ The following levels of personal protective clothing are typically utilized by emergency responders at hazmat incidents, as appropriate:
 - **Structural Firefighting Clothing**—Includes helmet, fire retardant hood, turnout coat and pants, personal alert safety system (PASS device), and gloves. Positive-pressure, SCBA should be considered the minimum level of respiratory protection.
 - **Chemical Vapor Protective Clothing**—Specialized chemical protective clothing, which when used in conjunction with air supplied respiratory protection devices offers a sealed, integral level of full-body protection from a hostile environment. It is primarily designed to offer protection from both gases and vapors, as well as total body splash protection. It may also be referred to as EPA Level A chemical protective clothing.
 - **Chemical Splash Protective Clothing**—This is specialized protective clothing that protects the wearer against chemical liquid splashes but not against chemical vapors or gases. It is primarily designed to provide personal protection against liquid splashes, solids, dusts and particles. It can be found in both single and multi-piece garment arrangements, and may also be referred to as EPA Level B chemical protective clothing when air supplied respiratory protection is provided or EPA Level C chemical protective clothing when air purifying respirators (APR) are provided.
- ❑ Ensure that all emergency response personnel are using the proper protective clothing and equipment equal to the hazards present. **Do not place personnel in an unsafe emergency condition.**
- ❑ Order additional personnel and other specialized equipment and expertise early in the incident. If you are unsure what your requirements are, always call for the highest level of assistance available. Do not wait to call for emergency assistance.

STREET SMART TIPS:

- ❑ Remember that structural firefighting protective clothing is not designed to provide protection against chemical hazards.
- ❑ There is no one single barrier that will effectively combine both chemical and thermal protection.
- ❑ Wearing ANY type and level of impermeable protective clothing creates the potential for heat stress injuries.
- ❑ Personal protective clothing is your LAST line of defense!!!!

STEP 5: INFORMATION MANAGEMENT AND RESOURCE COORDINATION

FUNCTION: Refers to proper management, coordination, and dissemination of all pertinent data and information within the ICS in effect at the scene. In simple terms, this function cannot be effectively accomplished unless a unified ICS organization

is in-place. Of particular importance is the ability to determine the incident factors involved, which functions of the Eight Step Process® have been completed, what additional information must be obtained, and what incident factors remain unknown.

GOAL: To provide for the timely and effective management, coordination, and dissemination of all pertinent data, information and resources between all of the players.

CHECKLIST:

- Confirm that the Incident Command Post is in a safe area. The ICP must be physically separated from all emergency response personnel and units involved in the tactical operation.

NOTE: Personnel not directly involved in the overall command and control of the incident should be removed from the ICP area.

- Confirm that a unified command organization is in-place and all key response and support agencies are represented directly or via a liaison officer.
- Expand the ICS and create additional branches, divisions or groups, as necessary.
- Ensure that all appropriate internal and external notifications have been made. Coordinate information and provide briefings to other agencies, as appropriate.
- Confirm emergency orders and follow through to ensure that they are fully understood and correctly implemented. Maintain strict control of the situation.
- Make sure that there is continuing progress toward solving the emergency in a timely manner. Do not delay in calling for additional assistance if conditions appear to be deteriorating.
- Ensure that all appropriate internal and external notifications have been made, as required. While it is the spiller's responsibility to make the necessary notifications, not all propane marketers may be familiar with the correct local or state agencies that need to be contacted. Emergency responders may be able to provide assistance in identifying the proper agencies.
- If activated, provide regular updates to the local Emergency Operations Center (EOC).

STREET SMART TIPS:

- Consider the security of the ICP and all other incident response areas (e.g., Staging, Rehab) of the incident.
- Don't look stupid because you didn't have a plan.
- Bad news doesn't get better with time. If there's a problem, the earlier you know about it the sooner you can start to fix it!

- Don't allow external resources to "free-lance" or do the "end run."
- Don't let your lack of a Planning Section become the Achilles Heel of your response. Establish it early, particularly if the incident has the potential to become a "campaign event."
- Play nice together!

STEP 6: IMPLEMENT RESPONSE OBJECTIVES

FUNCTION: The phase where responders implement the best available strategic goals and tactical objectives, which will produce the most favorable outcome. If the incident is in the emergency phase, this is where we "make the problem go away." Common strategies to protect people and stabilize the problem include rescue, public protective actions, spill control, leak control, fire control, and recovery operations. In simple terms, these strategies are typically implemented by fire and rescue units, with law enforcement responsible for all security and criminal-related issues.

If the incident is in the post-emergency response phase, the focus of response personnel will likely become scene safety, clean-up, evidence preservation (as appropriate), and incident investigation. Specific tasks will include (1) initial site entry and monitoring to determine the extent of the hazards present; (2) an evaluation of the scene to locate evidence that can be used to reconstruct the events leading up to the incident; (3) identification of the contributing factors that caused the incident; (4) interviewing of on-scene personnel and witnesses to corroborate the information obtained and opinions formed based on the available data; and (5) documentation of preliminary results.

GOAL: To ensure that the incident priorities (i.e., rescue, incident stabilization, environmental and property protection) are accomplished in a safe, timely and effective manner.

CHECKLIST:

- Protect exposures at the emergency scene. Anticipate accidental ignition of propane vapor releases. Exposures should be evaluated and prioritized so that water supplies and response resources are conserved and used correctly. Exposures should be prioritized in the following manner:
 - Primary Exposures:* Vessels, piping systems or critical support structures exposed to direct flame impingement. Failure of adjacent vessels, containers and piping systems is likely unless cooling water is applied.
 - Secondary Exposures:* Vessels, piping systems or critical support structures exposed to radiant heat. Failure of structural components is possible if cooling water is not applied.
 - Tertiary Exposures:* Noncritical equipment without life safety implications.
- Once exposures have been prioritized, the Incident Commander should develop a water supply plan as required, in conjunction with propane facility personnel. The Water Supply Leader should ensure that fire pumps are operating (at fixed facilities) and that an uninterrupted water supply can be delivered for the duration of the emergency.

- Implement response objectives. Remember that offensive tactics increase the risks to emergency responders; evaluate the risks of offensive control tactics before sending emergency response crews into the hazard area.
 - **Offensive Tactics**—Require responders to control/mitigate the emergency from within/inside the area of high risk. In a fire situation, this will include the ability to provide a reliable and sustained water supply.
 - **Defensive Tactics**—Permits responders to control/mitigate the emergency remote from the area of highest risk.
 - **Non-Intervention Tactics**—Pursuing a passive attack posture until the arrival of additional personnel or equipment, or allowing the fire to completely burn itself out.

STRATEGY	OFFENSIVE	DEFENSIVE	NON-INTERVENTION
Rescue	X		
Public Protective Actions	X	X	X
Spill Control	X	X	
Leak Control	X		
Fire Control	X	X	
Clean-up and Recovery	X	X	

NOTE: Rapidly changing incident conditions may require using multiple tactics simultaneously or switching from one tactic to another. Defensive tactics are always desirable over offensive tactics, if they can accomplish the same objectives.

- Ensure that properly equipped back-up personnel wearing the appropriate level of personal protective clothing are in-place before initiating operations.
- Ensure that Entry Teams have been briefed prior to being allowed to enter the hot zone. Coordinate with the Incident Safety Officer. For propane emergencies, this should include the following:
 - Objectives of the entry operation
 - Safety procedures, including radio communications, SCBA and PPE checks, and personal accountability.
 - Emergency procedures, including placement of back-up teams, escape signals and escape corridors
 - Decontamination area location, set-up and procedures

CAUTION: Always conduct operations as safely as possible. Do not enter the hazard area unless properly trained and equipped for the hazard(s) present and the specific task(s) to be performed.

- ❑ If adequate resources are available, the Incident Commander should implement a plan of action that permits facility personnel to remotely isolate the source of the release, while emergency responders protect exposures and prevent possible ignition of the propane vapors.
- ❑ Firefighting Operations: As a general guideline:
 - Protect primary and secondary exposures to the fire.
 - Isolate the propane source feeding the fire.
 - Reduce the operating pressure of the line or vessel feeding the fire.
 - Permit the fire to self-extinguish and consume residual propane inside the vessel or piping system.
 - Control and extinguish secondary fires.
- ❑ Conduct regular monitoring of the hazard area to determine if conditions are changing.

STREET SMART TIPS:

- ❑ Positive pressure ventilation (PPV) can be used to significantly reduce flammable vapor levels within a building and increase the safety of emergency responders who must enter a structure to effect rescue operations.
- ❑ Never touch or handle anything in a clandestine lab operation until the area has been evaluated and cleared by bomb squad personnel who have proper training in identifying booby traps.
- ❑ What will happen if I do nothing? Remember—this is the baseline for hazmat decision-making and should be the element against which all strategies and tactics are compared.
- ❑ Surprises are nice on your birthday but not on the emergency scene. Always have a Plan B in case Plan A doesn't work!

STEP 7: DECON AND CLEAN-UP OPERATIONS

FUNCTION: Decontamination (decon) is the process of making personnel, equipment, and supplies "safe" by reducing or eliminating harmful substances (i.e., contaminants) that are present when entering and working in contaminated areas (i.e., hot zone or inner perimeter). Although decon is commonly addressed in terms of "cleaning" personnel and equipment after entry operations, response personnel should remember that in some instances, due to the nature of the materials involved, decontamination of clothing and equipment may not be possible and these items may require disposal.

All personnel trained to the First Responder Operations level should be capable of delivering an emergency decon capability. At most "working" hazmat incidents, decon services will be provided by HMRTs or fire and rescue units working under the direction of a Hazmat Technician. Questions pertaining to disposal methods and procedures should be directed to environmental officials and technical specialists, based on applicable federal, state, and local regulations.

GOAL: To ensure the safety of both emergency responders and the public by reducing the level of contamination on-scene and minimizing the potential for secondary contamination beyond the incident scene.

CHECKLIST:

- Ensure that the decon operations are coordinated with tactical operations. This should include the following tasks:
 - The decontamination area is properly located within the warm zone, preferably up-slope and upwind of the incident location.
 - The decontamination area is well-marked and identified.
 - The proper decontamination method and the type of personal protective clothing to be used by the Decon Team have been determined and communicated, as appropriate.
 - All decon operations are integrated within the ICS organization.
- Ensure proper decon of all personnel before they leave the scene. For example, propane liquid and vapors can saturate protective clothing and be carried into "safe" areas. Flushing PPE with water will remove residual products and odorants.
- Establish a plan to clean-up or dispose of contaminated supplies and equipment before cleaning up the site of a release. Federal and state laws require proper disposal of hazardous waste.

STREET SMART TIPS:

- Establishing an emergency decon capability should be part of the Incident Action Plan for any incident where hazardous materials are involved.
- Never transport contaminated victims from the scene to any medical facility without conducting field decon. At best, the hospital folks will be pretty mad at you; at worst, you will completely shutdown the emergency room and the hospital.

STEP 8: TERMINATE THE INCIDENT

FUNCTION: This is the termination of emergency response activities and the initiation of post-emergency response operations (PERO), including investigation, restoration, and recovery activities. This would include the transfer of command to the agency who will be responsible for coordinating all post-emergency activities.

GOAL: To ensure that overall command is transferred to the proper agency when the emergency is terminated, and that all post-incident administrative activities are completed per local policies and procedures.

CHECKLIST:

- Account for all personnel before securing emergency operations.
- Conduct incident debriefing session for on-scene response personnel.

- Conduct incident debriefing session for on-scene response personnel. Provide background information necessary to ensure the documentation of any exposures.
- Command is formally transferred from the lead response agency to the lead agency for all post-emergency response operations.
- Ensure that the following elements are documented:
 - All operational, regulatory, and medical phases of the emergency, as appropriate.
 - All equipment or supplies used during the incident.
 - Obtain the names and telephone numbers of all key individuals. This should include propane representatives, contractors, public officials, and members of the media.
- Ensure that all emergency equipment is re-serviced, inspected and returned to proper locations. Provide a point-of-contact for all post-incident questions and issues.
- Conduct a critique of all major and significant incidents based upon local protocols.

STREET SMART TIPS:

- Although every organization has a tendency to develop its own critique style, never use a critique to assign blame (public meetings are the worst time to discipline personnel).
- Organizations must balance the potential negatives against the benefits that are gained through the critique process. Remember—the reason for doing the critique in the first place is to improve your operations.

SUMMARY

Most propane related emergencies involve small cylinders and non-bulk containers. The majority of these incidents are handled safely and effectively by the local fire department with some technical assistance from the local propane marketer. Larger scale emergencies such as cargo tank truck rollovers, train derailments, or fires involving large stationary tanks or bulk plants may require resources from a number of different agencies to resolve the problem.

The National Incident Management System (NIMS) is an important tool for organizing roles and responsibilities at any propane emergency. Understanding how the NIMS works is important for propane industry and public safety personnel from both a regulatory compliance and an operational point of view.

A strategy is a plan for managing the incident. It becomes the Incident Commander's overall goal or game plan to control the incident. Like most goals, a strategy is usually very broad in nature and is selected at the Command level. Tactics are the specific objectives the IC uses to achieve strategic goals.

Strategic goals and tactical objectives can be implemented from three distinct operational modes: (1) offensive mode of operations commits the IC's resources to

mits the IC's resources (people, equipment and supplies) to less aggressive objectives; and (3) Non-intervention calls for taking no action other than isolating the area and waiting out the sequence of events underway until the incident has run its course and the risk of intervening has been reduced to an acceptable level.

The Eight Step Process[®] is a tool used for the tactical management of hazardous materials emergencies. It serves as an example of a structured system that can be used by response personnel at incidents involving hazardous materials and propane. Although the level of equipment, training, and personnel may vary among organizations, there are fundamental functions and tasks that must be evaluated and implemented on a consistent basis. The Eight Step Process[®] provides a framework necessary to translate planning and preparedness into the delivery of an effective system for responding to and investigating incidents where propane may be involved.

The eight functions are:

1. Site Management and Control
2. Identify the Problem
3. Hazard and Risk Evaluation
4. Select Personal Protective Clothing and Equipment
5. Information Management and Resource Coordination
6. Implement Response Objectives
7. Decon and Clean-Up Operations
8. Terminate the Incident