

Gas and Electric Hazards

Training Resources for First Responders



Training | Resources

Pacific Gas and Electric Company (PG&E)



First Responder Website

www.pge.com/firstresponder

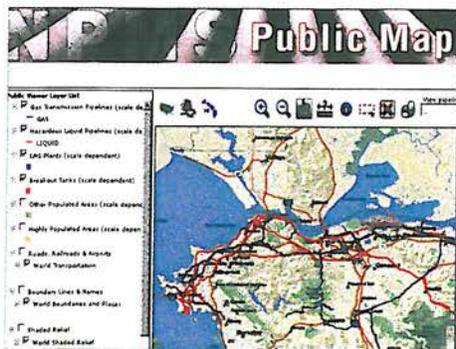
- Order free educational program materials *"Responding to Utility Emergencies"*
- View the First Responder event calendar
- Sign up to receive email alerts about seminars and important updates
- Provide your input about our programs and activities



First Responder Portal (secure login required)

- Secure access to maps of gas transmission infrastructure within your jurisdiction, including PG&E gas transmission lines, valves, storage facilities, etc.
- Download or print read-only PDF maps
- Download GIS shape files for use on GIS applications
- Receive updates when new information is made available

US DOT Pipeline and Hazardous Materials Safety Administration



DOT's National Pipeline Mapping System (NPMS)

www.npms.phmsa.dot.gov

- View maps that include other pipeline operator facilities and infrastructure (e.g. natural gas, petroleum, oil, etc.)
- Download GIS shape files for use on GIS applications
- Access pipeline operator contact information.

How to Reach Us

PG&E can help your agency prepare for incidents involving our utilities, provide locations of local infrastructure and schedule educational classes for your agency personnel. Call or email us at (925) 459-2141, AgencyFirstResponder@pge.com.



Electrical Emergency Safety Checklist

Always ensure your Dispatch has called PG&E from a landline at 1-888-PGE-4911 (1-888-743-4911) (This number is for the exclusive use of first responders)

General Safety Precautions

- Incident Commanders (IC) convey strategic decisions related to power line location to all suppression crews on the fire-ground.
- IC and responders must continually reevaluate fire conditions and electrical hazards.
- Keep bystanders well back.
- Anything that can lower the resistance can increase the hazard of electrocution.
- Given high enough voltage, anything can become a conductor.
- Wear full protective clothing for the task at hand — Fire retardant clothing compliant with NFPA standard and SCBA when necessary.

Structure Fires and Downed Wires

- All lines are hot — When in doubt, it is energized or “live.” Touch and step potential.
- Always establish a safe clearance for downed lines — At a minimum of one full span / two structurally sound poles.
- Position the apparatus safely. Watch for lines that could fail and hit the apparatus.
- Keep aerial equipment a minimum of 10 feet from any distribution wires and more if high voltage.
- Only properly utility trained and qualified personnel should use rubber gloves, dielectric overshoes and special equipment for handling energized equipment.
- Do not pull meters.
- Do not cut wires.

Tactical Use of Hose Streams

- Have equipment de-energized by trained utility persons before any operations begin.
- Avoid the use of water until advised by the power company personnel.
- Protect exposures and let the fire burn. Monitor for runoff.
- If any water is to be used, it must be fog at 30 degrees or wider (100 psi at the nozzle) applied from at least 33 to 35 feet or 10 meters.
- Do not use straight streams.
- Do not spray energized equipment.

Rescue

- Whenever possible, have victims remain in the car if electrical hazards are present and await the utility company.
- If the victims are free from life-threatening injuries they should stay in the care and remain calm.
- If victims are exiting the vehicle the step potential safety procedures must be followed. Jump clear and use hop or shuffle methods to avoid step potential.
- Ensure that protective shields, barriers, or alerting techniques are used to protect firefighters from electrical hazards and energized areas.

Transmission and Distribution

- Do not fight substation, switchyards, or generation plant fires.
- Transformers can explode.
- Arcs can kill.
- Maintain clearances from damaged or burning underground, pad-mounted transformers and switch cabinets. (Car/transformer pad collisions are like a car-pole. The vehicles chassis could be energized.

Wild Land and Transmission Lines

- Do not stand or work in areas of dense smoke around Transmission and Distribution lines.
- In heavy smoke the step potential danger zone can extend as far as 100 feet on both sides of the right-of-way with voltages of 500 kV.
- The safe zones should extend equally on both sides of the right-of-way.
- Ground cover fires can be fought with conventional hose lines if the smoke, flame or fire's height is not reaching within 100 feet of the energized lines and the superstructure of the towers are intact. Maintain 35 feet safety distance from transmission tower.
- If any water is to be used, it must be fog at 30 degrees or wider (100 psi at the nozzle) applied from at least 33 to 35 feet or 10 meters.
- Do not use a solid stream nozzle in the right of ways or around transmission lines.
- Do not drop water or retardant on the tower structure. It is corrosive and a conductor.
- Pilots should try and drop parallel to the transmission lines or across the lines in the middle of the span or between the towers.



Natural Gas Emergency Safety Checklist

Always ensure your Dispatch has called PG&E from a landline at 1-888-PGE-4911 (1-888-743-4911) (This number is for the exclusive use of first responders)

Scene Control

- Establish an effective and safe perimeter.
- Position apparatus out of harms way (avoid front of building or over manhole covers and sewers).
- Evacuate the public to a safe distance.
- If transmission lines or extreme "roar" evacuate a larger area if necessary.
- Coordinate with the utility company for large scale evacuations.
- Natural gas released inside buildings presents one of the greatest hazards to emergency responders.
- Buildings full of natural gas should only be approached when needed, with extreme caution, and with a minimum number of personnel.

Hazard and Risk Assessment

- Wear full structural firefighter protective clothing including positive pressure SCBA.
- Listen for roaring (transmission) or hissing sounds (distribution). Caution there may also be no noise at all.
- Monitor the atmosphere, using multiple monitors.
- Determine if possible the source of the release, without risk to the responders.
- Monitor for natural gas traveling away from source towards exposures.
- Do not enter a manhole, sewer or vault. It is a confined space.
- Control ignition sources (smoking, open flames, internal combustion engines and motors).
- Do not operate electrical devices switches, etc. Sparks could cause ignition.
- Be cautious of contacting the piping system a static spark may occur and result in ignition.

Strategic Considerations

- Whenever possible adopt a defensive or non intervention mode and wait for the utility company to arrive.
- Protect exposures.

- Do not extinguish the fire until the leak can be shut off and controlled.
- With any leak always anticipate and expect that ignition will occur.

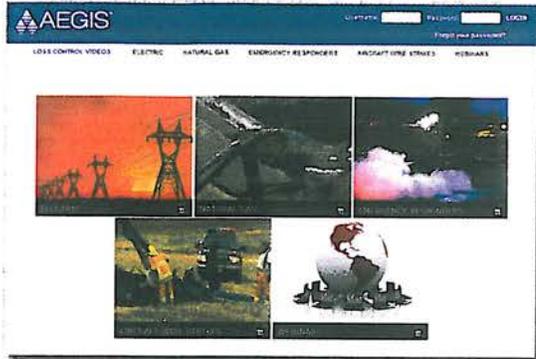
Tactical Considerations

- Stop or control of the gas release at the appliance, or service meter.
- If safely possible, ventilate the area, keeping in mind that during this process, if it was above the UEL the gas may pass back through the flammable range.
- Do not extinguish a gas fed fire unless the flow can be controlled.
- Shut the flow if possible and use protective hose streams to approach if necessary.
- Do not close main valves or any other large transmission / distribution valves — This can lead to serious problems elsewhere in the system.
- Closed valves should remain closed until opened by utility personnel.
- Extinguish surrounding fires but not the gas fire itself.

Other Considerations

- Decontaminate if necessary to remove the odorant.
- Debrief all responders and schedule a critique with all involved.

Natural Gas and Electricity: Recognizing and Avoiding the Hazards



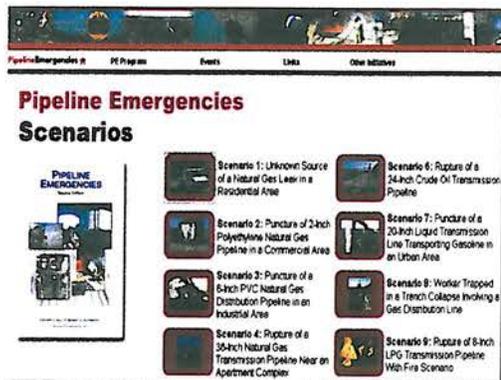
AEGIS Insurance Services

www.aegislink.com/portal/aegistv/loss_control.do

- Stream hazard awareness training videos
- Includes key safety messages and emergency response scenarios.
- Order DVD sets of these gas and electric safety videos for incorporation into your training programs.



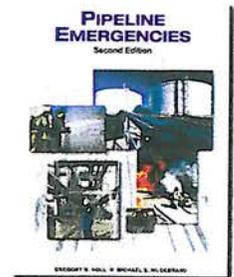
Pipeline Emergency Response: Training Videos and Scenarios



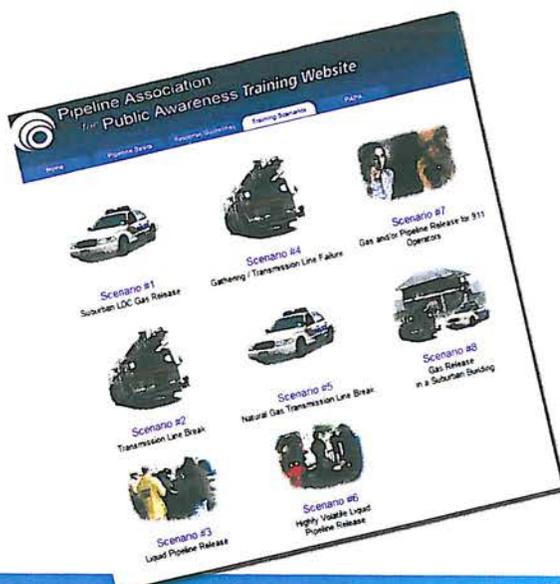
Pipeline Emergencies

www.pipelineemergencies.com

- Access free instructional materials designed for emergency responders, including books, facilitator guides, presentations, videos, scenarios, etc.
- Scenarios cover a variety of pipeline emergencies



Developed by the National Association of State Fire Marshals (NASFM) and the US Department of Transportation's Pipeline and Hazardous Materials Safety Administration (PHMSA)



Pipeline Association for Public Awareness (PAPA)

www.pipelineawareness.org

- View safety info for police, fire and 911 operators
- Access interactive web-based scenarios
- Stream Emergency Responder awareness videos
- Download "Pipeline Emergency Response Guidelines"

