

Referenced Excerpts from the Gas Emergency Response Plan, Revision 8.0

December 31, 2018

Pacific Gas and Electric

3.1 Emergency Plan Activation

PG&E's Incident Levels categorize incidents and support PG&E in understanding the complexity of an incident and the actions that may be employed at each level (e.g., emergency center activations, resources requests, etc.).

To ensure a consistent and well-coordinated response to emergencies, the company has adopted the following incident classification system:

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Plan activation occurs when authorized individuals (defined later in this chapter) classify an incident based upon the activation criteria set forth in the Gas Incident Levels in Table 3.1, and request the activation of any supporting Emergency Center(s).

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The primary objective of gas response focuses on employee and public safety when service interruptions occur. It is vital that the area is made safe and properly assessed during the response. Once the interruption has been properly accessed and communicated, effective restoration efforts can begin.

For additional details on PG&E incident levels, refer to the CERP and Appendix B, Levels of Emergency and Activation Criteria for PG&E.

3.1.1 Gas Incident Levels

To ensure a consistent and well-coordinated response to emergencies, PG&E developed the following emergency classification system. This information should be used to establish the appropriate Incident Levels for emergencies. The decision to activate at a particular incident level may be based on additional factors or risks, it does not replace the sound judgment and experience of the Incident Commander, and Emergency Center Commanders. Note: Any gas incident level can be reportable to the Department of Transportation (DOT) and/or the California Public Utilities Commission (CPUC) if it meets the specified criteria found in Utility Procedure TD-4413P-01, "Reporting of Gas Events."

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The appropriate persons in the GCC must be informed of any gas-related incident, in particular because they are responsible for making internal notifications and contacting the appropriate personnel to make external notifications, such as to the CPUC and DOT. The Gas Control Notification Process is covered in Section 3.2, Emergency Response Process, and Appendix E.6, CPUC/DOT Required Notifications/Testing, of the GERP.

3.2.1 Emergency Response to Gas Incidents

The PG&E Gas Operations emergency response process is designed to provide a safe, standardized, and effective incident management approach that supports the CERP and uses ICS as its fundamental response framework. By using ICS, Gas first responders are able to integrate seamlessly with community first responders and more effectively respond to and manage gas related emergencies. The following sections delineate Gas Operations' emergency response process.

3.2.1.1 Notifications of Gas Emergencies and Incident Escalation

PG&E is notified of emergencies through Gas Dispatch and the GCC, collectively known as the Gas Operations Center. These two channels are discussed below, along with the ways in which field resources are escalated through them. Note that the GCC is made up of the Gas Transmission Control Center (GTCC) and the Gas Distribution Control Center (GDCC).

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3.2.1.2.1 Gas Dispatch and Scheduling

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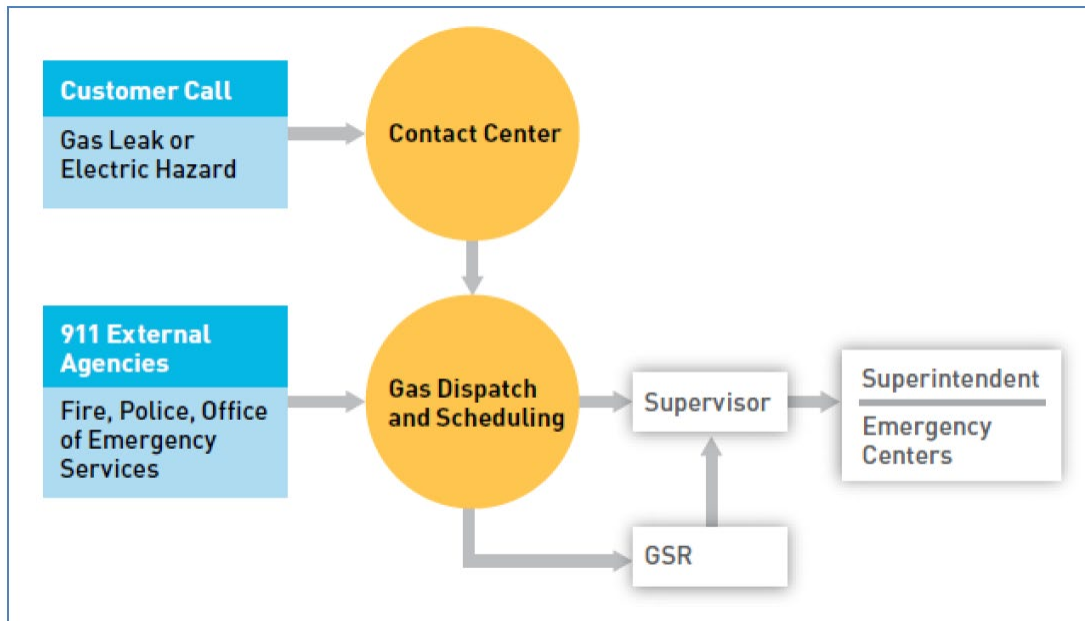


Figure 3.7 Emergency Call Escalation through Gas Dispatch and Scheduling

3.2.1.2.2 Gas Control Center (GCC)

The GCC is responsible for the overall operation of the PG&E gas system (transmission and distribution inclusively), and therefore closely monitors and coordinates incident notifications, dispatching, system isolations and restorations.

GCC personnel primarily use SCADA to monitor and control critical assets remotely. SCADA alerts GCC of gas system irregularities via alarms. When these alarms activate, GCC notifies appropriate 911 agencies and departments within PG&E to ensure that incident response resources are informed and dispatched.

GCC Locations

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Alarms or trouble calls into GCC: The GCC manages initial incident coordination for gas transmission and distribution emergencies. Figure 3.8 shows how GCC receives emergency calls, dispatches resources, and escalates an incident. Once the GCC receives an emergency call or an indicator from a Gas Control SCADA alarm, a GPOM Supervisor or M&C Supervisor, as appropriate, is contacted to coordinate field level response. The GCC has the authority and responsibility to remotely isolate a gas system during an emergency operating condition in order to make the system safe. If the incident escalates beyond the PG&E field first responder's (e.g., gas mechanics) capacity, or requires additional resources/coordination, command is transferred to the superintendent or higher-level authority.

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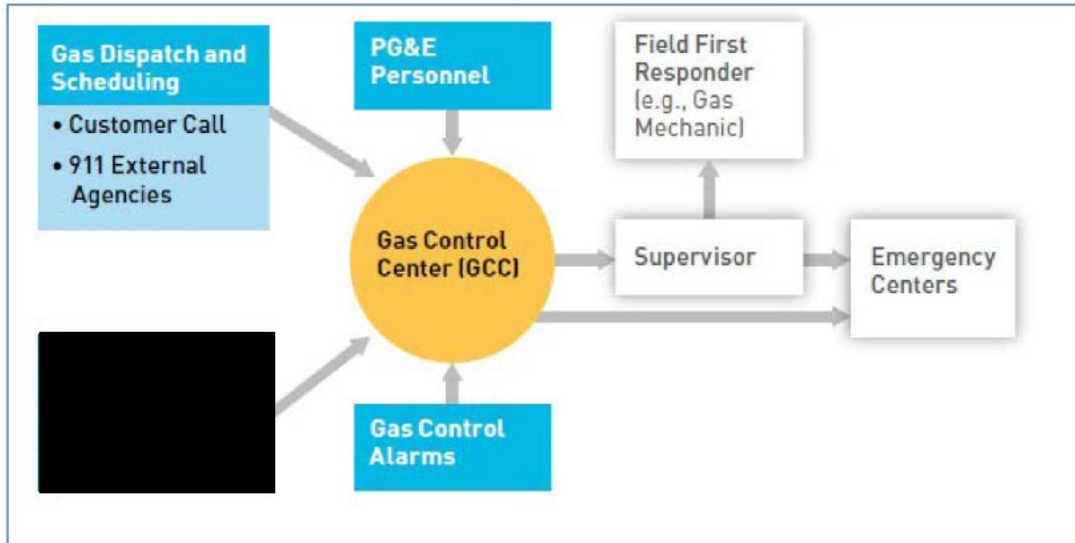


Figure 3.8 Emergency Call Escalation through GCC/GSO

Notification and Escalation Procedures: In the event of an emergency or abnormal operating condition that has the potential of impacting the public, property, or the environment, Gas Dispatch and Scheduling and the GCC maintain notification and escalation procedures for:

- Level ... gas incidents
- Gas incidents that require Field Supervisory resources
- Gas incidents that meet specified reportable DOT or CPUC criteria

For such incidents, both Gas Dispatch and the GCC generally maintain communications between departments to ensure adequate system monitoring, resource deployment, and operational response to an incident.

The standard, the procedures that implement these requirements, and supporting referenced documents for the GCC are contained in the Control Room Management (CRM) Operations Manual. The CRM manual contains a 911 Notification Process, specific to the GCC.

Procedures and processes of both Gas Dispatch and GCC ensure that immediate notification to establish “situational awareness” and an open communication channel between Gas Dispatch, GCC, and the responsible external 911 emergency response center(s). This includes information on the estimated time of arrival (ETA) of gas field personnel to the incident. If on-scene personnel are requested by a GSR, Gas Dispatch notifies GCC.

3.2.1.3.1 Gas Service Representatives (GSR)

... Gas Dispatch then sends out a qualified GSR based on reported incident needs. If the GSR determines that a more specialized work crew is necessary to respond to the incident or that the

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incident involves gas transmission assets, the GSR contacts Gas Dispatch to report incident details and needs.

Upon arriving at an incident site, emergency response personnel conduct an assessment of the situation. Following this assessment, personnel take actions to make the situation safe.

Make-safe actions may include:

- Shutting off gas service at the meter or curb valves.
- Collaborating with GCC to determine the isolation strategy to be executed.
- Collaborating with Process Safety to perform a risk assessment and PSSR, as needed. See Section 2.3.4.2 for more details.
- Collaborating with the Incident Investigation team (CAP and/or Process Safety) to gather and preserve relevant incident data (e.g., parts, equipment, photos, videos) for cause evaluation purposes. See Section 3.2.1.4 for more details.
- Restricting access to all irrelevant personnel to the site; consider using cones or caution tape.
- Evacuating buildings and premises.
- Eliminating all ignition sources (e.g., cars, electric tools, lighters, static electricity, overhead and underground electric facility ignition sources, etc.).
- Leaving cellphones, pagers, and radios in the vehicle away from the leak.
- Ensuring flashlights are turned away from the leak in a safe location, before approaching the gas leak area.
- Engaging automatic shut-off switches.

The field personnel should perform the incident response duties in a manner in which they preserve relevant incident data and minimize altering the incident scene for cause evaluation purposes; see Section 3.2.1.4 for more details. Despite the alteration of the data, the primary goal during the incident response phase is preventing further injuries, property damage and environmental impact.

PG&E has considerable incident resources in its field crews, which manage typical gas emergencies as internal first responders.

All crews must coordinate with on-site IC to ensure accountability and personnel safety. Areas that have been evacuated etc. should be prohibited entry until the IC, whether it is PG&E or a Community First Responder, specifies that such action is safe.

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3.2.1.3.2 Gas Transmission Operations and Maintenance (GTO&M)

Gas Pipeline Operations and Maintenance (GPOM)

Operates compressor stations, gas storage fields, valves, regulators, and control equipment to bring the gas incident under control and/or maintain the system safely while emergency repairs are being made.

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PG&E has crews to handle gas emergencies that cannot be addressed by the above field responders if additional resources are needed.

3.2.1.3.3 General Construction (GC)

Gas General Construction Crew

Repairs damaged facilities and provides labor for emergencies, such as closing riser valves during curtailments. Generally, the work that construction crews do in a gas incident is not substantially different from their normal assignments. Gas Construction Crews are a mobile work force and are located at various locations across the service territory. GC Gas also has a Measurement and Controls construction team that can support controls construction at stations, automated valves, SCADA, etc.

Pipeline Field Services Organization

Provides emergency clearance services, tapping and plugging services, test head deployment, and standby services. This team also provides frac tank deployment services. It is a mobile work force and the work these crews do in a gas incident is typical of their daily work tasks.

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3.2.1.4 PG&E Incident Investigation Team

The Gas Incident Investigation team comprises of Gas Process Safety Engineers and/or CAP specialists. Per 49 CFR §192.617, "Investigation of failures," the Incident Investigation team's role is to analyze accidents and failures, including the collection 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.

An investigation is to start while incident response activities are still being conducted; if the investigation can begin concurrently without interfering, hindering, or delaying incident response activities, then preservation and collection of data can be performed in parallel. Depending on the incident severity level, legal and organizational requirements may impose restrictions and/or a specific time limit.

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During the immediate response activities, the incident investigation team should keep in mind the following:

- Do not perform any action that could lead to another incident
- Follow all instructions issued by the onsite incident commander
- Follow all directions and requirements with regard to safe work practices for isolating energy sources and controlling hazards
- Consider that following an incident there are often unusual hazards with the potential to create a dangerous situation
- Consider performing JHA to determine how the investigation can be performed safely.

Once the incident response is complete, access the incident site (and any associated records), which should be controlled to preserve all relevant incident data. Only personnel specifically authorized by the investigation team personnel should be permitted entry to the site. It is important to determine the data that may be useful in investigating the incident (e.g., parts, equipment, personnel, paper, photos, position information, and electronic data), preserve evidence, and follow chain-of-custody procedures.

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3.2.2.2 Incident Command System (ICS)

The ICS is a systematic tool used for the command, control, and coordination of incident response. ICS provides a common framework within which people can work together effectively.

PG&E uses this system to manage incident response consistent with the California Standardized Emergency Management System (SEMS), and the National Incident Management System (NIMS). See Utility Policy EMRG-01, Emergency Response and Business Continuity Policy, for reference. Refer to Appendix C of this plan and the CERP for more details on ICS.

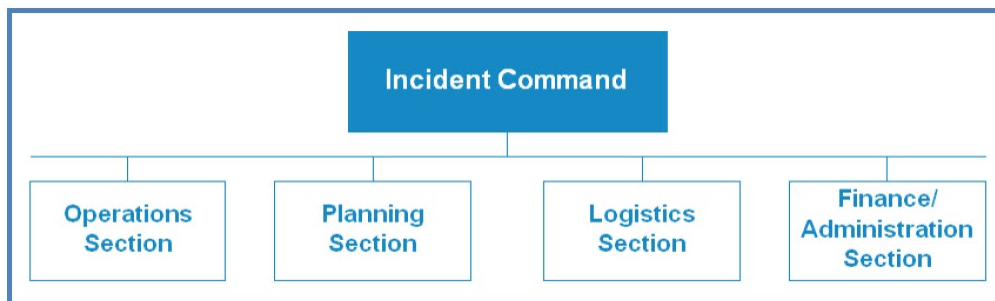


Figure 3.9 Basic ICS Organization

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3.2.2.2.1 Key Response Steps

PG&E uses the structure of the ICS to complete key steps in the incident response. The management characteristics of ICS include (taken from NIMS 2008, p.46):

- Common terminology (Organizational Functions, Resource Descriptions, Incident Facilities)
- Modular organization
- management by objectives
- Incident action planning
- Manageable span of control
- Incident facilities and locations
- Comprehensive resource management
- Integrated communications
- Establishment and transfer of command
- Chain of command and unity of command
- Unified command
- Accountability
- Dispatch/deployment
- Information and intelligence management

The key incident response steps below represent a typical process flow through the cycle of an incident. Every incident may not necessarily follow this exact sequence. For example, it may be appropriate to “make-safe” at several points during the response process and not just after “assess the situation.” In addition, these response steps define how gas operations achieves its response priorities.

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Objective	Description
Establish command	Determine the Incident Commander, set up an Incident Command Post (ICP), activate Emergency Center(s), if necessary.
Assess the situation	Gather information about the emergency, assess the situation in coordination with appropriate 911 agencies and PG&E Gas Control Center (GCC).
Make-safe	Make area safe for public, employees, and others.
Communicate/notify	Communicate to/notify the appropriate PG&E personnel, regulatory agencies, public agencies such as fire, police, city, and county emergency operations, GCC, customers and media.
Restore	Restore gas service.
Recover	Deactivate ICP and/or Emergency Centers and return to business as usual.

Table 3.2 Key Incident Response Steps

3.2.3 Make-Safe

“Make-safe” actions are those actions taken by PG&E personnel in response to conditions threatening the public, other first responders, or PG&E personnel. Make-safe actions often include: determining an isolation strategy, restricting site access, eliminating ignition sources, closing valves, or engaging automatic shut-off switches. Make-safe actions may occur at any time throughout the incident response.

Field responders may initially facilitate evacuation measures while initiating actions required in making a gas incident safe for the public, Company personnel, and others. As all incidents are different, the need to evacuate will vary. Field responders may also conduct air monitoring and determine a safe zone.

In addition, external first responders may also coordinate evacuation measures with their internal plans and procedures. The Department of Transportation (DOT) provides evacuation guidance related to natural gas incidents for external first responders, which is included in Appendix B – Response Aids.

Further, field responders consider the potential for subsurface gas migration and/or escaping gas ignition in their decisions on determining an evacuation zone prior to commencement of leak pinpointing. Field responders will also attempt to eliminate sources of ignition during the make-safe process. Gas Operations field responders will coordinate with Electric Operations in such activities, if appropriate.

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3.2.3.1 Assessment, Repair and Restoration/Return to Normal Operations

Higher consideration should be given to requests for priority restoration of customers such as individuals on life support, hospitals, fire departments, police stations, critical communications centers, emergency shelters, sewage treatment plants, and critical water pumping stations. During emergency events, it is imperative that all levels of the organization coordinate its efforts with local and state governments.

In larger emergencies when resources are constrained, it may be necessary to establish work priorities for restoration of service. These priorities are operationally-driven, and are primarily focused on restoring as many customers as soon as possible. However, priorities may need to be modified to accommodate the needs of the communities served. Work may also need to be coordinated with other infrastructure repairs that may be occurring simultaneously by other utilities, government, and property owners. The OEC, GEC and EOC will manage priority/objective-setting in a coordinated manner whenever possible and work with local government and other impacted utilities.

3.2.3.2.4 Gas System Planning

During emergencies, Gas System Planning (GSP) provides hydraulic planning and modeling support for immediate Make-safe. GSP provides immediate hydraulic operational support to bring the gas system to a safe condition. GSP addresses the need for shutting in portions of the system to make-safe by determining the best method for system isolation and resulting impacts to customers on the remaining portions of the gas system. GSP also facilitates the development of contingency strategies for incidents. (Refer to “Gas System Planning Emergency Response Reference Guide for detailed GSP Make-safe activities). Overall Gas System Planning provides the following:

- Hydraulic modelling and analysis to determine system efficiency
- Input on gas facilities that are critical to serving customers
- Prioritization of gas facility damage assessment

... Local facility management and field personnel are trained to identify and report the condition of damaged equipment for use in repair/restoration. This information will be shared with the GEC, and EOC if activated.

3.2.3.3.3 General Customer Curtailment Guidelines

1. Determine magnitude and location of load reduction needed to maintain customer service to portions of the system not isolated.

- Determine level of analysis required to meet response time requirements.
- Communicate need for additional planning engineer support to incident leads.

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2. Determine customers to be curtailed.

- Consider time required to curtail customers, and time required to restore service when developing customer curtailments.

- Note hierarchy of curtailments.

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- Single core customers with larger load relief should be curtailed ahead of multiple small customers to increase system isolation and restoration times.

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- Critical customers to community health and safety such as hospitals and shelters should be curtailed last.

3. Support restoration of customer service in reverse order of 2.

3.2.3.3.4 General Critical Customer Guidelines During Emergencies

1. Identify critical customers in portion of gas system being affected.

- Customers critical to public health and safety (hospitals, shelters, sewage treatment, etc.).

- Residential customers due to health and cooking issues especially for longer term outages and/or if outages occur during colder weather.

- Depending on damage to electric grid and Electric Grid (EG) facilities, certain gas fired EG may be critical.

- Refineries may be critical if fuel supply shortages occur.

- Electric Generation or other customers may drive economic impacts.

2. Communicate critical customers to incident team.

3.2.3.3.6 Emergency Clearances

An important part of public safety is ensuring that the Company uses a clearance procedure for Gas Operations. Clearance procedures are an added safety step to confirm that a plan and procedure is in place before work is performed. ...

PG&E implemented a gas distribution clearance process to permit the GDCC to oversee safety monitoring and risk mitigation from the inception of a project through its completion. Any work that affects gas pressure, flow or quality, deactivation or activation of facilities, affects remote monitoring and control, or may impact the ability to maintain service to customers requiring a gas

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clearance. Clearances are prepared with the input of the team that will perform the work, the engineering team, and the team that executes the clearance. Clearance initiation includes identifying a way to safely isolate the work area, maintain service to customers, and to develop the steps that will be taken to isolate the work area. Every request for a clearance must be requested and scheduled through, and then managed by, the GDCC.

Upon completion of an emergency clearance:

- Transfer the gas system back to GCC.
- Communicate the Return to Normal status.

If facilities must be restored, the GCC and Site IC must transfer control to the restoration team:

- GCC transfers internal and external communication to Gas Dispatch, and reporting responsibilities to the restoration team lead.
- Site IC transfers incident command to the restoration team lead.

3.2.4.2.1 Incident Management Team (IMT)

Gas Operations has 18 division level Incident Management Teams established to oversee incident response within their local area of responsibility. The 18 IMT contact lists represent each division OEC within the service territory. Each OEC contact list identifies personnel for designated incident response ICS positions. These personnel are not on a set “on-call” rotation and may be substituted by other qualified personnel in the division if needed. An IMT will typically operate out of an ICP or at an division OEC.

Each division identifies primary and alternate positions. Alternates for each position must be qualified to assume the designated roles and responsibilities. Gas Operations identified back-up IMTs for each division. IMTs and their back-up IMT are assigned from OECs that are geographically distant from each other in order to minimize the possibility of IMT unavailability of adjacent IMTs responding to the same incident. For example, San Francisco and Fresno IMTs are back-ups to each other. In addition neighboring teams and position may be called upon to support incident (i.e. P&I Chief from the nearest division). Refer to Table 3.3.

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3.2.4.3.1 Operations Emergency Center (OEC)

The OEC is a physical location that allows staff to provide management oversight at the division and/or district level. The OEC is staffed by an IMT comprised of corresponding positions that are found in both the GEC and the EOC. The OEC directs and coordinates the personnel necessary to assess damage, make-safe, restore service, and communicate status information internally and externally. An OEC identifies staff to manage a transmission, distribution or storage incident.

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The OECs may support more than one incident at a time, and may have several ICPs reporting into them. The OECs report incident status to the GEC if the GEC has been activated. Gas Operations has 18 strategically located OECs throughout the service territory. The 12 transmission districts are supported by the division level OECs based on the overlapping of their respective geographical areas. Further, personnel from each division and district are combined within each division OEC to roster 18 IMTs – one IMT per OEC. OEC position roles and responsibilities are defined further in position specific documents located on the GERP intranet site.

In addition, OECs can be located remote from the primary designated location (e.g. in the MCV or at an alternate location such as a storage facility for a gas storage well incident). The primary locations are listed in Figure 3.14, however these locations are subject to change and are dependent on each incident site location. The Incident Commander along with the area IC advisor will determine the most appropriate facility to host the OEC team based on incident needs.

Gas Emergency Center (GEC)

The GEC is located ... adjacent to the GCC. The GEC is staffed by an Incident Support Team (IST) that activates in support of gas-only emergencies and in support of EOC operations for dual-commodity emergencies. The GEC activates for emergencies at Levels ...

The GEC supports the incident in coordination with activated OEC(s). The GEC may set system-level priorities and strategies. The GEC communicates the status of the incident response to senior management, other emergency centers, and departments involved in the incident. The GEC may also coordinate all resources within Gas Operations as well as external mutual assistance. Positions in the GEC mirror those in the OEC to provide support and coordination. GEC position roles and responsibilities are defined further in position specific documents located on the GERP intranet site.

The GEC incident support functions includes:

- Support the needs of the activated OEC(s)
- Compile system-wide status and damage information
- Confirm information systems are functioning properly
- Provide accurate outage and restoration estimates and forecasts to external stakeholders such as media, local governments and customers through the Public Information Officer, Liaison Officer, and Customer Strategy Officer
- Review/approve all external communications before releasing to the media

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The GEC is activated and assumes responsibility (or shares responsibility with the EOC in dual commodity emergencies) for support of incident management activities which could include:

- Establish overall alignment with incident objectives
- Coordinate damage assessment and investigation
- Set restoration priorities
- Disseminate information
- Move personnel, equipment, and other technical support to assist operating departments in restoring service

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