



*Pacific Gas and
Electric Company®*

2025 GAS SAFETY PLAN



March 14, 2025

Dear Reader,

PG&E has a pivotal responsibility to design, build, maintain, and operate our gas systems to keep customers, communities, and coworkers safe. The 2025 Gas Safety Plan ("Plan")¹ provides a comprehensive summary of the work we achieved in 2024. It strives to showcase and reflect on important Gas functional area information with the goal that it is accessible and clear to a vast audience.

PG&E's 2025 Plan includes perspectives showing how Gas has continued to enhance safety excellence. Threaded through these perspectives are how Gas uses the Lean Operating System, and the Lean Five Plays, which have a large influence in coworker engagement and communication from the frontline to senior leadership. Additionally, the Plan details how Gas fully transitioned to the PG&E Safety Management Excellence System (PSEMS) in 2024. PSEMS has been adopted as an enterprise-wide integrated safety management system based on national and international industry standards. PG&E utilizes PSEMS to drive operational excellence, safety, and reliability performance across the company.

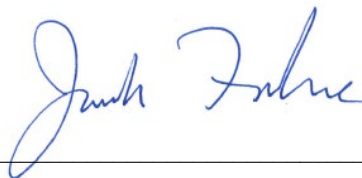
The 2025 Plan also contains updates on key metrics and improvements from 2024. This includes highlights such as: The achievement of a response rate of 99.7% in handling gas odor calls in under 60 minutes, with an average response time of 19.6 minutes, exceeding the target of 20.1 minutes; Exceeding the Third Party Dig-In target of 1.12 dig in's per 1,000 tickets with a 0.95 score, putting PG&E in the top 1% quartile for all gas utilities; A 6% improvement in the Grade 1 leak median response time; and mitigation of Grade 2 open leaks within 119 days, on average, well surpassing the target of 150 days. Additionally, in Workforce Safety, 2024 saw improvements in our Human Performance standards, the Hazardous Energy Wheel, a revised Job Site Safety Analysis, and building the capacity to fail safe into our high-risk work activities.

Last year, PG&E Gas celebrated 10 years of independent certification, meeting the requirements for ISO 55001 for asset management and complying with API RP 1173 for pipeline safety and API RP 754 for process safety. These certifications continue to deliver enhanced safety and compliance, operational efficiency and stakeholder confidence. Other highlights from 2024 include events organized and hosted by the expanded Grassroots Safety Teams, such as Driving Rodeos, Ergo Days, Live Action Drills, De-Escalation Trainings, the annual Safety Culture Summit, and Leadership Town Halls. Additionally, monthly collaborations in the Gas Safety Council and Operations Safety Collaboration Center, as well as continuous field visits from both leaders and Grassroots Safety Teams, all drove ownership for each of our PG&E coworkers.

While we have made progress in key safety areas, we realize there is more to do to demonstrate our commitment and growth towards safety excellence. PG&E remains focused and dedicated to ensuring everyone and everything is always safe.



Austin Hastings
Vice President | Gas Engineering
Pacific Gas and Electric Company



Joseph Forline
Senior Vice President | Gas Operations
Pacific Gas and Electric Company

¹ PG&E submits this plan in accordance with General Order 112-F Section 123.2(k), and Public Utilities Code §§961 and 963.

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PACIFIC GAS AND ELECTRIC COMPANY GAS SAFETY PLAN

I. INTRODUCTION

Pacific Gas and Electric Company (PG&E or the Company or the Utility) works continuously to safely transport natural gas under pressure. This is accomplished through approximately 5,650 miles of transmission pipeline, approximately 45,200 miles of gas distribution main pipeline,¹ and approximately 4.8 million customer meters, 4,400 transmission and distribution (T&D) regulator stations and regulator sets, nine compressor stations, and three gas storage facilities. The PG&E natural gas system spans from Eureka in the north to Bakersfield in the south, and from the Pacific Ocean in the west to the Sierra Nevada mountains in the east, serving approximately sixteen million Californians. Our employees work around the clock, 365 days a year, on a mission to provide both reliable service and to keep everyone and everything always safe.

PG&E's Gas Safety Plan (Plan) provides a view into the safety activities and processes PG&E demonstrates every day. It showcases and reflects on the specific gas safety work that was accomplished in 2024. PG&E annually reviews and updates its Plan in accordance with General Order (GO) 112-F Section 123.2(k) and Public Utilities Code (Pub. Util. Code) Sections 961 and 963.² Figure 1 below provides a summary of PG&E's performance in key areas.

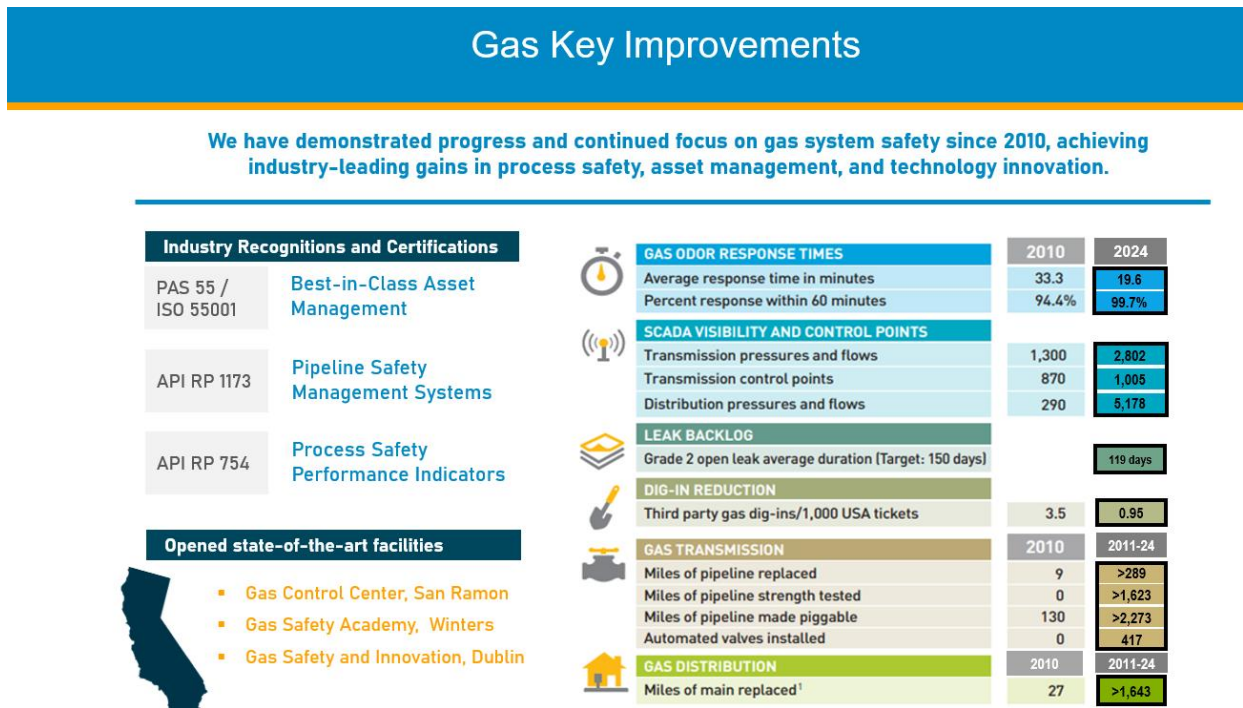


Figure 1 – Gas Key Improvements

1. STRUCTURE OF THE GAS SAFETY PLAN

The 2025 Plan reflects on work performed in 2024. In alignment with California's regulatory framework,³ this Plan explains how PG&E places a top priority on the safety of the public, customers, employees, and contractors. It also summarizes how the Company has made safety investments in processes and infrastructure that are consistent with best practices in the gas industry.

The following sections of the Plan provide additional information on how PG&E is achieving Gas Safety Excellence. They include updates on the Company's safety goals and commitments to public, customer, employee, and contractor safety.

- **True North Strategy:** PG&E's True North Strategy is our ten-year enterprise strategy that provides a clear vision of what it means to achieve our purpose of delivering for our hometowns, serving our planet, and leading with love. PG&E's True North Strategy sets the tone for the Company to focus on people, the planet, and prosperity. It showcases where the Company is headed and how we will get there.
- **PG&E Safety Excellence Management System (PSEMS):** The PSEMS is a PG&E-wide integrated safety management system based on national and international industry standards. It grants the framework and structure to drive operational excellence, safety, and reliability performance across PG&E. As PG&E transitions to the PSEMS, PG&E Gas will continue to maintain third-party independent certification to the requirements specified by industry and international standards for asset management, pipeline safety management, and process safety performance indicators. Certification of conformance to these standards is assured through independent third-party audits.
- **Safety Culture:** This section highlights how PG&E continuously improves workforce safety through a culture focused on the hearts and minds of our employees and building a deeper partnership between Gas leadership, Grassroots Safety Teams, and the Labor Unions.
- **Process Safety:** This section focuses on PG&E's efforts to prevent low frequency, high consequence incidents, and how we mitigate consequences from these incidents.
- **Asset Management:** This section explains how PG&E Gas utilizes the Asset Management System and the principles of the ISO 55001:2014 standard for asset management systems. ISO 55001 specifies the requirements for establishing, implementing, maintaining, and improving a gas asset management system. Key concepts include understanding the condition of assets, assessing risks to those assets, implementing risk reduction strategies, maintaining asset condition and performance, and balancing cost, risk, and performance to achieve strategic asset management objectives.

- **Workforce and Compliance Framework:** This section reviews how PG&E qualifies, trains, and engages our employee resources to mitigate risk by working on assets safely and performing work correctly.
- **Continuous Improvement (CI):** This section showcases PG&E’s efforts to work cross-functionally to continuously improve processes and procedures.

2. PG&E’S TRUE NORTH STRATEGY

PG&E’s True North Strategy represents where the Company is headed and how we will get there. It is PG&E’s 10-year enterprise strategy that sets a clear vision of what it means to achieve our Purpose: Delivering for Our Hometowns, Serving Our Planet, and Leading with Love. PG&E’s True North Strategy is reflected throughout every coworker’s day-to-day work and is integrated into our enterprise planning processes over time.

PG&E’s Gas Operations and Gas Engineering departments (PG&E Gas or Gas) follow the Company’s Business Plan Deployment model to set annual goals and initiatives. This process incorporates the Company’s True North Strategy to create functional area “Plans on a Page” that outline the strategic goals and initiatives for the year. The Gas functional area’s “Plans on a Page” include both operational and engineering activities that align with the Company’s focus areas: Safety, Quality, Delivery, Cost, and Morale. These plans drive action throughout the business. Related goals and metrics cascade down through each functional area to provide all coworkers a line of sight to how their daily contributions support PG&E’s True North Strategy.

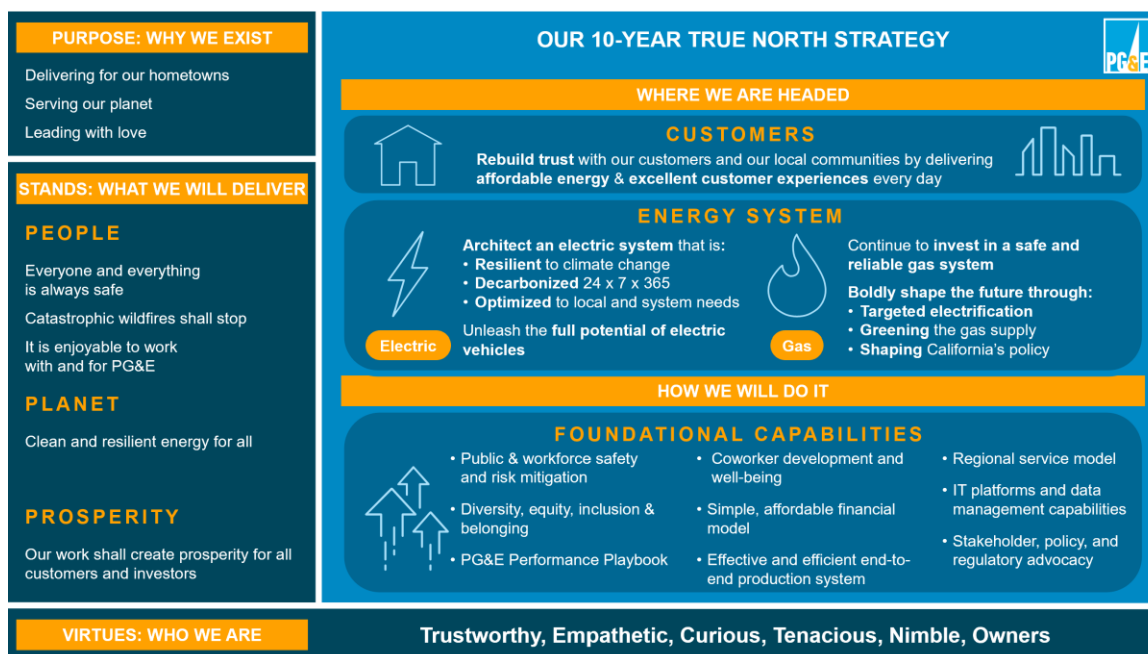


Figure 2 – PG&E’s True North Strategy

3. THE PG&E GAS SAFETY EXCELLENCE MANAGEMENT SYSTEM (PSEMS)

The journey to implement the Gas Safety Excellence Framework, grounded in the pillars of Asset Management, Safety Culture, and Process Safety, began in 2012. This Framework enabled PG&E Gas to develop management systems that established processes and controls to enhance asset lifecycle management and pipeline safety. Each pillar was underpinned by industry standards, with independent third-party certification ensuring the adoption of best practices in asset management, pipeline safety, safety culture, and process safety.

The Framework led to the development and implementation of the Gas Safety Excellence Management System (GSEMS) in 2019. The GSEMS integrated the requirements of foundational standards—ISO 55001 for Asset Management, API RP 1173 for Pipeline Safety Management Systems and API RP 754 for Process Safety Performance Indicators—into a single, comprehensive management system to improve system maturity.

The successful implementation of the GSEMS served as a model for the development of a PG&E-wide safety excellence management system in 2022. In 2023, the PSEMS manual was published. The PSEMS integrates the requirements of the three foundational standards for the GSEMS and ISO 45001 Occupational Health and Safety Management System Requirements into a framework consisting of 13 management system elements. In 2023, the GSEMS was retired as the PSEMS became the integrated safety management system standard across PG&E. In 2024, PG&E Gas completed the transition to the PSEMS. The transition included retirement of the Gas Management of Change (MOC) Standard and transitioning to the Enterprise MOC standard governed by the PSEMS. PG&E Gas will continue to maintain independent third-party certification to ISO 55001 for Asset Management, API RP 1173 for Pipeline Safety Management Systems, and API RP 754 for Process Safety Performance Indicators, honoring the commitments made to stakeholders after the San Bruno pipeline incident.



Figure 3 – PG&E Safety Excellence Management System Elements

GAS INDEPENDENT THIRD-PARTY CERTIFICATION TO INDUSTRY STANDARDS

In 2024, PG&E Gas celebrated 10 years of independent certification, meeting the requirements of ISO 55001 for asset management and complying with API RP 1173 for pipeline safety and API RP 754 for process safety.

Independent third-party certification positions PG&E Gas as an industry leader in safety, reliability, and operational excellence. These certifications deliver:

- **Enhanced Safety and Compliance:** Mitigates risks, prevents incidents, and ensures regulatory alignment.
- **Operational Efficiency:** Optimizes asset performance, reduces costs, and improves decision-making.
- **Stakeholder Confidence:** Demonstrates commitment to best practices and builds trust with customers and stakeholders through verified adherence to global industry standards.

The commitment to independent third-party certification to industry standards ensures continual improvement in safety, gas system integrity, and efficiency while boosting stakeholder and customer confidence and minimizing operational risks.

Safety Management System Maturity

In 2019, PG&E Gas initiated biennial assessments of its safety management system maturity. These internal evaluations have identified over 150 opportunities for improvement. Figure 4 illustrates the results of the 2019, 2021, and 2023 biennial assessments by system element for the GSEMS. In 2024, 18 of the 27 maturity improvement actions from the 2023 assessment were completed, with the remainder expected to be completed by the end of 2025. Examples of improvements resulting from these assessments include actions to improve emergency response, natural gas system integrity, and enhancement of controls to improve occupational health and safety and process safety. Gas will transition to the PSEMS maturity model for the next assessment cycle scheduled for the third and fourth quarters of 2025.

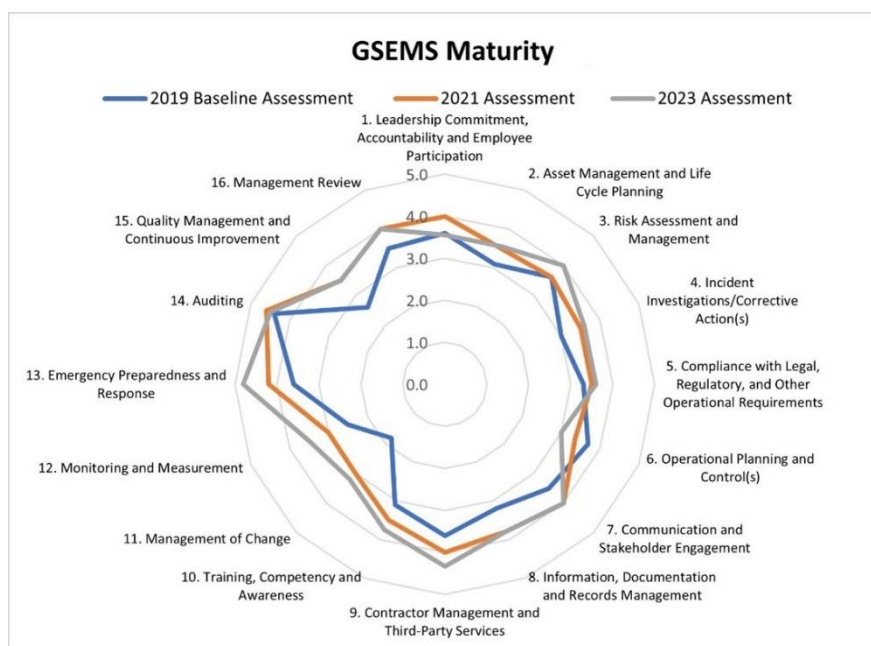


Figure 4 – Maturity Assessment Chart 2019, 2021, and 2023

4. PUBLIC SAFETY

As mentioned in the Introduction and shown in Figure 1, PG&E continues to make progress and improvements to support the safe operation of the gas system. Areas of continued focus to improve public safety are: In-Line Inspections, Third Party Dig-ins, Gas Emergency Response, and Strength Testing.

- **In-Line Inspections:** In 2024, PG&E increased pigability from 51 percent to roughly 58 percent⁴ of the approximately 5,650 miles of the Gas Transmission system.
- **Third-Party Dig-Ins:** In 2024, PG&E experienced 0.95 third-party dig-ins per 1,000 Underground Service Alert (USA) tickets, exceeding the 2024 target of 1.12 third-party dig-ins per 1,000 tickets.
- **Gas Emergency Response:** In 2024, PG&E's average response time for immediate response gas odor or gas leak calls was 19.6 minutes, exceeding the target of 20.1 minutes.
- **Strength Test:** In 2024, PG&E completed strength-testing of 7.7 miles of pipeline, meeting the goal of strength testing 7.7 miles.⁵

5. WORKFORCE SAFETY

PG&E's goal is to continually reduce risk to keep our customers, our communities, and our workforce (employees and contractors) safe. Our focus is to build an organization in which we have designed every work activity to facilitate safe performance, every member of our workforce knows and practices safe behaviors, and every individual is encouraged to speak up if they see unsafe or risky behavior and has confidence that all concerns and ideas will be heard and follow up actions will be taken.

PG&E aspires to eliminate workplace fatalities and reduce the number of serious safety incidents. PG&E established Days Away, Restricted or Transferred (DART) targets for 2024, with the goal to have a reduction from 2023. In 2024, Gas had 59 DART cases at a rate of 1.15 per 100 coworkers. This was a reduction of four cases and a rate reduction of 0.16, or 12.2 percent from 2023. The top three DART injuries were related to Sprains/Strains, Musculoskeletal, and cuts/lacerations. Gas utilized problem solving sessions throughout 2024 to target containment and countermeasures in reducing the top incident drivers.

Gas employees were involved in 34 Lost Time Injuries in 2024, four cases more than what was experienced in 2023. In 2024, the California Occupational Safety and Health Administration (OSHA) recordable rate increased by approximately 4.4 percent from 2.73 percent in 2023 to 2.85 percent in 2024. To reverse this upward trend, countermeasures were used and included utilization of PG&E's 24 hour, seven days a week Nurse Care Line (NCL), early reporting, and early intervention with Industrial Athlete (IA) utilization. In 2024, 90.1 percent of employees who called the NCL reported discomfort or an injury within 24 hours, which was a 0.66 percent decrease from 2023. Based on the data, PG&E believes that encouraging employees to speak to healthcare professionals about injuries or illnesses

within 24 hours contributes to reduced severity and recovery time of injuries or illnesses. Through consistent application of timely reporting and preventative efforts, the serious Lost Time Injuries have begun to follow the OSHA recordable curve and show improvement.

While Gas Operations did incur one non-fatal Serious Injury and Fatality Actual (SIF-A) incident and two non-fatal safety incidents with Serious Injury and Fatality Potential (SIF-P), they also closed the year at 754 days without a coworker or contractor fatality. The one non-fatal SIF-A related to purging activities at a compressor station. To reduce the number of SIF's, PG&E's Gas Safety Improvement Strategy emphasized use of the Hazardous Energy Wheel (Figure 5), revised their Job Site Safety Analysis (JSSA) and focused on building capacity to fail safe into our high-risk work activities. This focus on implementing essential controls for high energy hazards resulted in a 28% increase in the presence of controls when compared to 2023. Additionally, Gas Operations reinforced Human Performance Standards by rolling out human performance within Gas Construction targeting organizational leaders and subsequently field employees. This roll out engaged 1,400 Gas employees in over 40 training sessions. All of these activities helped Gas Operations see a 78% reduction of Potential Serious Injury or Fatality (SIF-P) events compared to 2023.

PG&E continued its adoption from 2023 of Edison Electric International's (EEI) Safety Classification Learning Model (SCL) to classify its serious injury or fatality (SIF) incidents. The EEI SCL model classifies incidents into the following categories: High-Energy SIF (HSIF), Low-Energy SIF, Potential SIF, Capacity, Exposure, and Success & Low Severity. Adopting the EEI SCL Model has improved the SIF program by bringing a consistent and objective approach to reviewing, classifying, and deploying corrective actions to prevent recurrence of SIF incidents across the company and industry.

Once an incident is determined to meet SIF criteria, a cause evaluation team is assembled to investigate the facts of the incident, and identify the causal and contributing factors. The team also develops comprehensive corrective actions to minimize and/or prevent recurrence. Upon completion of the internal investigation, a written report is presented to the Corrective Action Review Board to evaluate and accept the corrective actions. The Corrective Action Review Board is composed of Gas Leaders, Gas Corrective Action Program (CAP) Leaders, and Enterprise Health and Safety (EH&S) Leaders. Once approved, the corrective actions are entered into CAP and tracked and monitored to completion. Following closure of all corrective actions, an effectiveness review is conducted to determine if the actions taken were effective in preventing or mitigating the original outcome.

PG&E continued additional evaluation measures in 2024, such as Timely Corrective Action Completion and Quality of Corrective Actions, to focus on both the quality and timely closure of

corrective actions from SIF investigations. In 2024, Gas completed 100 percent of the corrective actions related to SIF events on time.

Another area of focus continues to be Motor Vehicle Safety. In 2024, there were nine Serious Preventable Motor Vehicle Incidents (SPMVI). In-cab coaching technology in gas vehicles alerts drivers when they accelerate too fast or brake too hard. These are both leading indicators for incidents that have the potential to cause extensive damage or a SPMVI. PG&E tracks a Safe Driving Rate (SDR) metric by calculating the number of Hard Braking events and Hard Accelerating events per 1,000 miles driven. Vehicles with an SDR greater than 30 are 1.5 times more likely to be involved in a Preventable MVI. In 2024, Gas finished with a SDR of 3.5, an increase from the 3.2 recorded SDR in 2023. The company continues to improve its motor vehicle safety program, conduct more driver observations, install backing sensor technology, enhance driver safety training, and promote awareness campaigns such as Driver Rodeos focused on drivers and their specific vehicles. PG&E will strive to continue to reduce OSHA recordable injuries, the DART rate, and motor vehicle incidents.

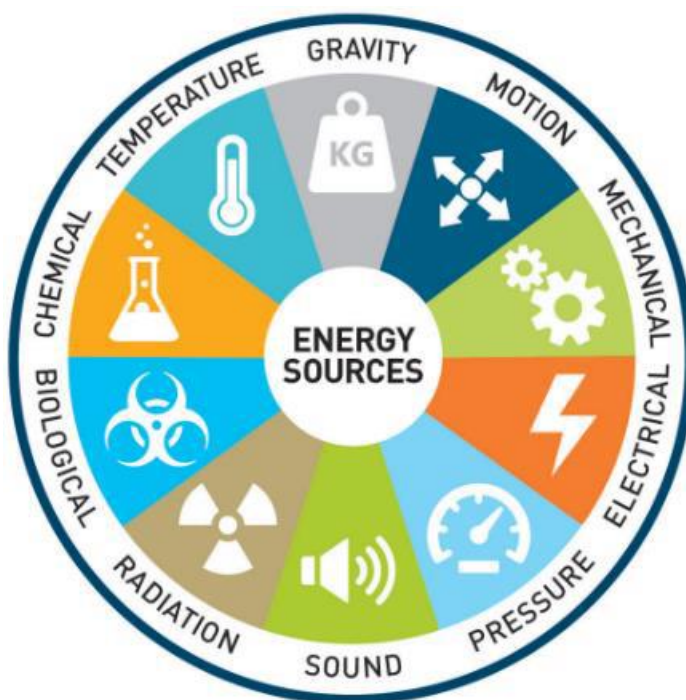


Figure 5 – Hazardous Energy Wheel

6. REWARDING SAFETY EXCELLENCE

PG&E's performance goals reinforce expectations regarding management decisions and allocation of resources. PG&E awards employees and contractors for their safety excellence by encouraging safe behavior and practices. These awards include:

- **Eagle Eye Award** – Recipients of this award are those who submit CAP items identifying and addressing issues that result in significant improvements to safety, reliability, compliance, cost reduction, or process. Any employee can submit an Eagle Eye nomination.
- **Speak Up Awards** – This program honors those who bravely speak up about an issue or concern, ranging from a safety issue to new ideas. In 2024, there were eight Speak Up Champions. Five of the issues had safety implications and one involved a safety concern raised by a Gas Operations Coworker at a compressor station.
- **Safety Recognition Program** – Under this program, rewards and recognition are provided for employees who demonstrate safe behavior, speak up, and take action to promote a positive safety culture, and/or support the Workforce Safety Strategy. As a token of appreciation, the employees who nominate them are also eligible to receive rewards and recognition.
- **Process Safety Champion** – This champion recognition distinguishes teams and individuals who have gone above and beyond in applying Process Safety principles to their work. Examples include having a questioning attitude, taking time to evaluate hazards prior to starting tasks, and submitting material issues into the CAP system. Process Safety Champions are identified and recognized on a quarterly basis in the Process Safety Newsletter.
- **Regional Safety Recognition** – This is quarterly recognition supported by the Regional Safety Director and the Regional Vice president. This is a cross-functional program that recognizes safe behaviors and/or demonstrations of safe acts outside of the workplace.
- **Sibley Award** – The Sibley award recognizes organizations that make outstanding contributions toward the safety and health of the public, our employees, our contractors, and our customers. In 2024, it was awarded to the Gas Operations Live Action De-Escalation Training Team which developed an immersive, hands-on training experience that teaches coworkers on the frontlines how to navigate and de-escalate difficult situations where there are external safety threats or customer tension.
- **Britton Award** – This award recognizes individual coworkers or teams whose actions display an exceptional lifesaving, courageous, or self-sacrificing behavior or deed demonstrating initiative and resourcefulness in an emergency situation. In 2024, three Gas Operations coworkers were awarded the Britton for taking actions above and beyond the call of duty.

II. SAFETY CULTURE

PG&E's commitment to strengthen our safety culture and performance is reinforced by our stand that "Everyone and Everything is Always Safe" (see Figure 6). Gas Safety and Leadership work together to improve workforce safety through building a culture focused on our employees and cultivating a deeper partnership between Gas leadership, Grassroots Safety Teams, and the Labor Unions. The goals of the partnership are to prevent and reduce employee serious injuries and fatalities, promote healing and return to work, and ensure quality and appropriate medical care for our employees. In 2024, with leadership support, Gas focused on these goals.

In 2024, Gas continued to roll out Human Performance (HU) through HU specific training workshops. The HU workshops resulted in over 25 sessions being held throughout the year and were widely deployed and cascaded throughout the organization from Directors to field employees. PG&E stood up a company-wide collaboration center, the Operations Safety Collaboration Center (OSCC), to drive leadership alignment and action in preventing HSIF events and Near Hits. In December 2024, we advanced our strategic planning, which included selecting the 2025 Areas for Improvement (AFI). HU Pre-Job Safety Briefing, one of the three selected AFIs, will offer an opportunity to further drive best practices for enhancing Gas job planning with HU tools and the execution stages of our work.

The Safety Culture Village Guidance Team is in its third year and continues to be an integral part of the culture work at PG&E. This larger team is comprised of nine teams, including bargaining unit and management coworkers who are carefully selected for being safety leaders who positively influence their teams at the local level. The Safety Culture Village Guidance Teams choose the aspects of their local safety culture they believe, if enhanced, will promote work safety. The second annual Gas Safety Culture Summit took place on December 2, 2024. The summit served as a platform for all nine safety culture villages to exchange best practices, carry on providing extensive training on safety culture tools, and gain insight from each team regarding the kinds of projects and actions that were effectively executed and influenced cultural change.

In addition, many more of our Gas coworkers continue to receive training to become certified Safety Culture Tools Facilitators who assist coworkers supporting Gas-wide culture topics. In 2024, the training provided was for two specific culture-based Tools: Culture Iceberg and Cycle of Mistrust. The utilization of these powerful tools will continue to be used to problem solve and improve the safety culture of our workforce.

In parallel, PG&E continued with its Gas Safety Council and Gas Grassroots Safety teams in 2024. More information on the Gas Safety Council can be found in Section II.2.a. More information on the Grassroots Safety Teams can be found in Section II.2.b.

Furthermore, in 2024, Gas continued to champion the Industrial Athlete Specialist (IAS) Team for frontline employees and provided leaders the necessary injury data to aid in implementation of injury prevention measures. Regional support consisted of three to six IASs to support the program with a total of 21 IASs across PG&E's service territory. This program provides education and early symptom intervention to help our field coworkers avoid injuries and stay safe, healthy, and well at work. IASs are professionals trained in sports medicine. They are assigned to regions throughout the enterprise and visit sites within their region regularly. They are also available for "on call" services.

IAS Services include:

- Body mechanics coaching to prevent injuries on the job;
- Individual and group education on topics such as performing;
- Task-specific stretches and preventing sprains and strains; and
- Support for discomfort, both work-related and non-work related.

In 2024, 31 percent of the Gas eligible physical workforce participated in 1:1 services with an IAS. Approximately 96 percent of coworkers with a resolved IAS discomfort case did not have a new MSD-related worker's compensation claim within six months after case closure.

Virtual Ergonomics Evaluation for Computer Workstations. In 2024, the Office Ergonomics team completed 7,289 workstation evaluations across the Enterprise. The ergonomics risk management software, RSIGuard, was retired in late 2024 and new software applications were introduced in 2025 (Ergo4Me, Wellnomics, Appointedd, and Longitude6 wearables). The new Ergo4Me platform consolidates ergonomics training, self-assessment, and corrective action plans for all PG&E coworkers and allows PG&E to assess ergonomics risk from a holistic standpoint, to align program resources where needed to mitigate risk. In 2025, ergonomics goals for both office and frontline workers will focus on implementing corrective actions resulting from the completion of annual ergonomics training and self-assessment. This should proactively reduce ergonomics risk with a company-wide goal of implementing all corrective actions within 60 days post-training completion. Employees with work-related discomfort are advised to contact the NCL for discomfort resolution. Unresolved items on the issue resolution dashboard for office coworkers correlated with over 90 percent of office ergo recordable injuries from 2022-2024. In accordance with PG&E's Ergonomics Standard, corrective actions are to be addressed within 60 days after completing ergonomics training and self-assessment.

Gas Leadership, in partnership with Grassroots Safety Teams and Labor Unions, will continue to reinforce PG&E's commitment to safety and encourage its employees to work safely. Gas will continue to use Industrial Ergonomics to minimize hazards related to work equipment, environment, tools, and

OUR STANDS:

PEOPLE

Everyone and everything is always safe.

Catastrophic wildfires shall stop.

It is enjoyable to work with and for PG&E.

PLANET

Clean and resilient energy for all.

PROSPERITY

Our work shall create prosperity for all customers and investors.

Figure 6 – PG&E Stands

processes through prioritization of frequency of activity by work type, looking for quick wins by changing out tools, and sharing immediate lessons learned with others to reduce hazards.

As an organization, PG&E's ongoing focus is to reduce unsafe behaviors by connecting with those that do the work, to build and improve our Safety Culture of our employees and to continue to build a deeper partnership between Gas and Labor Unions to drive safety.

1. COWORKER ENGAGEMENT

PG&E continues to support coworker engagement activities and initiatives that provide a foundation for a healthy safety culture, at various stages of implementation. The main avenues for coworker engagement include the Lean Operating System (formerly Lean Management in Gas), Safety Leadership, Leader in the Field, Role of the Supervisor, the Joy at Work survey (a way to measure coworker morale), Breakthrough Thinking (process to foster extraordinary outcomes), and Leadership Town Halls.

Lean Operating System. Lean implementation has a large influence on coworker engagement. It encourages leaders to spend more time directly engaging with their team members, with daily, weekly, and monthly operating reviews, command centers, and in-field visits. During in-field visits, leaders regularly visit locations where the work is occurring to meet coworkers, hear what is working well and where improvements are needed, and observe the work being performed to identify opportunities for continuous improvement. More information on the Lean Operating System can be found in Section VII.1.

Safety Leadership Development. In 2024, the *Leading Forward: Safety Leadership* program continued to be delivered to operational leaders, including gas supervisors and crew leads, covering topics of Shaping a Safety Culture, Identifying and Controlling Exposure, and You Are Not Alone. The program also includes information about PG&E's Safety Excellence Management System and Institute of Nuclear Power Operations 10-Traits of a Healthy Safety Culture. In 2024, a Grassroots Safety Committee was created for hybrid and office-based coworkers to better support ergonomics and the changing landscape in where clerical work is completed.

Leader in the Field. Leader in the Field was deployed in 2020, with a focus on supervisors and managers physically being in the field with their coworkers to assist in removing barriers and resolving safety concerns. Across Gas, supervisors' time in the field averaged approximately 62 percent throughout 2024, compared to 56 percent in 2023. This means over half of their working hours were spent in the field with frontline workers. For PG&E Gas Operation Managers, time in the field averaged approximately 37 percent throughout 2024, compared to 31 percent in 2023.

Role of the Supervisor. This strategy aims to elevate and redesign the role of the supervisor, encompassing brand reputation and meaningful experiences where supervision is an attractive, important, and supported position throughout the company, and coworkers aspire towards the role. In 2024, PG&E enhanced and expanded supervisor engagement with additional Supervisor Central Program

First Line Network calls and Office Hours; presented Day in the Life/Time in Motion study results of the study to supervisors in collaboration with Enterprise Lean Office and Lean Yard teams, and engaged with functional area leads; and continued with 2024 offerings for Leading at PG&E leadership training that includes six courses focused on elevating leaders across the enterprise in leading coworkers, safety culture, business acumen, breakthrough thinking, and lean principles. Role of the Supervisor was measured in the Joy at Work survey in 2024; supervisor participation increased 13 percent from 1,476 participants to 1,679 and overall Supervisor Joy increased six percent from 71 to 77 percent when compared to 2023.

Joy at Work. One of PG&E's stands is that it is enjoyable to work with and for PG&E. To develop a deeper understanding of our coworkers' experiences, PG&E continued its annual survey to measure whether coworkers enjoy working for PG&E and feel known, loved, and proud to work for PG&E. In 2024, 3,920 Gas Operations coworkers and 833 Gas Engineering coworkers took the survey and had joy scores of 73 percent and 69 percent, respectfully. The results of the survey provided insights to leaders and their teams on actions to improve Joy at Work, such as team building activities, volunteer opportunities, and in-person collaborations, among other activities.

Breakthrough Thinking. A breakthrough organization occurs when leaders and teams shift their mindset to achieve extraordinary outcomes. The Company's Breakthrough Program has four key building blocks to help leaders and teams learn how to utilize breakthrough thinking to achieve breakthrough outcomes. These building blocks are the Breakthrough Intensive, Performance Diagnostic, Breakthrough Specialists, and Breakthrough Debriefs. Each block builds on the previous one to create a culture where leaders, teams, and specialists are empowered to produce results that previously seemed impossible.

PG&E hosted 13 Breakthrough Workshops in 2024 to help empower leaders to create a breakthrough performance environment where breakthroughs are the norm. Of those 13 intensives, 1,167 coworkers attended.

Leadership Town Halls. Previously named Coworker Town Halls, 14 Leadership Town Halls were hosted in 2024. These town halls were designed for leaders to focus on being owners, together. They built trust by discussing our Performance Playbook, maturing our Safety Culture mindset, and getting deeper into our Lean Operating System, which was first introduced in 2017 to Gas and has continually matured each year since. Spanning our territory, these town halls provided a mechanism for leaders to collaborate, discuss relevant issues and ideas, and learn from each other to improve effectiveness, efficiency, competency, and safe operations.

a) **CORRECTIVE ACTION PROGRAM**

The CAP is an integral part of our safety culture in Gas. PG&E's continued use and support of CAP demonstrates to coworkers, contractors, regulators, and customers our unwavering commitment to delivering safe, reliable, affordable, and clean energy.

The Gas CAP team is composed of CAP quality operations specialists and cause evaluators. The quality operations specialists handle the day-to-day management of CAP submissions. The cause evaluators facilitate the end-to-end process of an investigation or cause evaluation (root, apparent, or common cause). The cause evaluation team is also responsible for all SIF coworker and contractor SIF investigations and works in conjunction with Enterprise Safety to ensure effective implementation of the process.

What Gets Reported into CAP

PG&E encourages employees to identify issues related to gas assets, processes, and overall safety of our employees, contractors, and the public for submission into CAP for resolution and tracking.

How the Gas CAP Process Works

Initiation: The initiator, who can be any PG&E employee or contractor, can submit any issue or process improvement idea into the CAP system. Coworkers have several ways to submit an issue, and can choose to do so electronically, manually, or verbally. Once the CAP is in "submitted" status in Gas, the Gas CAP team will process it for assignment. On average, Gas employees submit roughly 785 CAP issues each month.

Assignment and Resolution: The CAP process employs a standardized approach (Figure 7) to review and assign CAP Issues and Actions. This process is facilitated by the Gas CAP Review Team (CRT). The Gas CRT is composed of Subject Matter Experts (SME) from various Gas departments who meet regularly to review newly submitted CAP notifications. The CRT's function is to categorize each notification, assess it for severity (using the enterprise CAP Severity Determination Table), and assign it to an issue owner.

Once the CAP is assigned to an issue owner, it is the issue owner's responsibility to review the notification, identify the causes underlying the issue, and address them appropriately by implementing any necessary corrective actions to mitigate risks and/or prevent recurrence (based on severity and evaluation level).

After a CAP notification has been submitted to an issue owner, initiators receive an email detailing to whom their notification was assigned. They also receive another email when their notification is closed. This gives the initiator the opportunity to learn how the issue was resolved and to provide feedback on their satisfaction with the results.

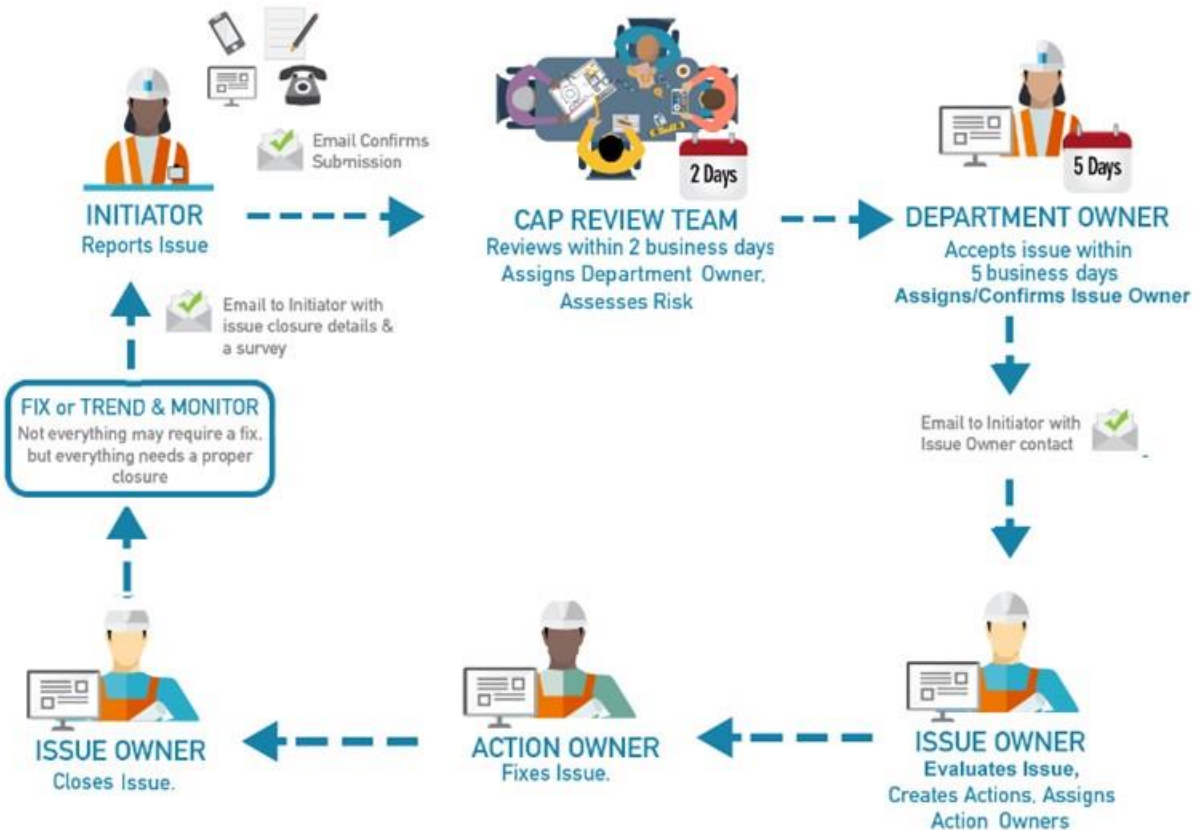


Figure 7 – CAP Process

How Notifications are Prioritized

Beginning June 28, 2024, the CAP ceased using the term “Risk” when classifying issues. CAP now assigns a Severity level to all incoming CAP issues using the CAP Severity Determination Table.

The CAP notification severity level is used to determine the appropriate evaluation type that will be assigned and provides Gas with the ability to prioritize CAP notifications. Cause evaluations are necessary to identify the cause of an incident, issue, or error to prevent or minimize the probability of reoccurrence and to apply continuous improvement processes. There are four types of cause evaluations:

- **Root Cause Evaluation (RCE)**: An RCE is a formal and rigorous investigation that uses analysis methods to determine the root cause(s) of a problem. The RCE identifies required corrective actions that prevent or reduce the likelihood of a recurrence of the problem for the same or similar root cause(s).
- **Apparent Cause Evaluation (ACE)**: An ACE is an evaluation based on readily available information that provides reasonable assurance that the cause of a problem is determined and will be corrected. An ACE is conducted when management determines a formal but less rigorous cause evaluation is necessary.

- **Common Cause Evaluation (CCE):** A CCE is an analysis method that can be used to identify common underlying elements among different, unique, but similar events or issues. The underlying elements may be anything from a common failure mechanism to a common cause that may or may not require further investigations. A CCE can be conducted only when the individual issues have been evaluated on their own merits (i.e., ACE or WGE report completed) and causes and corrective actions have been identified.
- **Work Group Evaluation (WGE):** A WGE is a logical evaluation of an issue to identify reasonable corrective or preventive actions needed to resolve an issue. Resolution of the issue may be addressed by another process or a simple explanation of why something does or does not happen.

Figure 8 provides the Gas Event Classification Matrix (ECM), which was developed to provide formal guidance and consistency to determine the appropriate level of cause evaluation.

Gas Event Classification Matrix						
UNINTENDED OPERATIONAL EVENTS ¹						
Investigation Level <i>May be escalated or deescalated by Leadership as necessary</i>	PIPELINE HIT, RUPTURE, or EXPLOSION	PRESSURE EVENTS (Over and Under Pressure)	OTHER LOSS OF CONTAINMENT EVENTS	OTHER OPERATIONAL EVENTS	SAFETY	OTHER QUALITY/COMPLIANCE EVENTS
Significant Operational Events <i>Root Cause Evaluation (RCE)</i>	<ul style="list-style-type: none"> Transmission pipeline damage with loss of containment 	<ul style="list-style-type: none"> Overpressure event with loss of containment or overpressure event that impacts over 200 customers Loss of service to over 2000 customers 	<ul style="list-style-type: none"> Explosion or fire due to loss of containment that impacts PG&E's or customer's property (i.e. house explosion) 	<ul style="list-style-type: none"> Loss of odorant (outside of regulatory limits) at customer lines Loss of system wide visibility (SCADA) Other events that significantly impact the safety, reliability, or integrity of the pipeline system 	<ul style="list-style-type: none"> SIF-Actual Events² Serious injury or fatality to the public due to gas asset failure or operational change 	<ul style="list-style-type: none"> No new event types defined
Moderate Operational Events <i>Apparent Cause Evaluation (ACE)</i>	<ul style="list-style-type: none"> Transmission pipeline damage with no loss of containment Distribution asset loss of containment resulting in fire 	<ul style="list-style-type: none"> Large overpressure event with NO loss of containment³ Unintentional loss of service to 200-2000 customers (excludes non-at-fault dig-ins) Reasonable potential loss of service to over 2000 customers (i.e. unintended closure of valves, blockage in pipeline) 	<ul style="list-style-type: none"> Significant gas accumulation within explosive limit due to loss of containment without appropriate safeguards Other loss of containment events (i.e. lube oil, pipeline liquids) with moderate impact 	<ul style="list-style-type: none"> Loss of odorant (outside of internal limits) at customer lines Potential loss of system wide visibility (SCADA) Over-odorization of gas resulting in an increase in customer odor calls Loss of visibility to multiple mountain tops (SCADA) for 4 hrs or more Other events that had the reasonable potential to significantly impact the safety, reliability, or integrity of the pipeline system 	<ul style="list-style-type: none"> SIF-Potential Events² Potential for serious injury or fatality to the public due to gas asset failure or operational change 	<ul style="list-style-type: none"> Mandated self-reports NOV and NOPV findings requiring ACE as determined by regulatory compliance
Minor Operational Events <i>Work Group Evaluation (WGE)</i>	<ul style="list-style-type: none"> At-fault dig-in on a distribution asset without fire or explosion 	<ul style="list-style-type: none"> Small overpressure event or near-hit overpressure event³ Loss of service to less than 200 customers (excludes non-at-fault dig-in) 	<ul style="list-style-type: none"> Loss of containment with low likelihood of fire or explosion 	<ul style="list-style-type: none"> Crossbore created during construction or maintenance activities 	<ul style="list-style-type: none"> Non-SIF injuries 	<ul style="list-style-type: none"> High Quality Assurance Findings Self-reported non-conformances NOV findings

¹ An unintended operational event is defined as an event resulting from work at/for PG&E involving gas assets that impacted or had the potential to impact the following: the safety of the public or our workforce (employees and contractors); the integrity of gas assets; the reliability of gas delivery; normal operations of the gas system; compliance with standards and regulations. *Does not include 3rd party at-fault events or natural disasters.
² All workforce serious injuries or fatalities actual and potentials are determined using process and definitions in SAFE-1100S. Serious injuries are life-threatening or life-altering injuries.
³ Small and large overpressure events are defined by FIMP.

Figure 8 – Gas Event Classification Matrix

A cause evaluation can be related to a wide range of topics in Gas, such as asset failures, reliability (e.g., dig-ins, overpressure (OP) events), and workforce safety incidents (i.e., SIF incidents). A cause evaluation can be requested by an employee on any CAP notification; however, an RCE is generally assigned to incidents where the consequence severely impacts public or employee safety, or reliability, and warrants rigorous analysis. Table 1 shows the total number of evaluations completed in 2024.

Table 1 – Gas Cause Evaluations Completed in 2024			
RCE	ACE	WGE	CCE
3	11	9,401	0

How CAP Success is Measured

In 2024, Gas' goal was to engage at least 33 percent of its workforce to use CAP to encourage employees' participation, and at year-end it had engaged approximately 28 percent. On average, Gas generates between 9,000 and 10,000 CAPs per year, one of the highest rates within PG&E.

To ensure accountability and transparency, leaders have access to an Executive CAP Dashboard tool (Figure 9) and the ability to subscribe to Tableau reports each week that details how their organization is performing on their CAP items. Additionally, officers and directors receive a daily report containing CAP issues submitted the previous day prior to being vetted through CRT. This daily report provides advance awareness of issues that may require proactive actions, interim controls, or containment.

Key performance indicators reported in 2024 include:

- Percent of Unique Initiators – This is the number of employee submissions divided by the total count of employees. The 2024 goal was greater than or equal to 33 percent of unique initiators.
- CAP Throughput – This number measures the volume of work being completed by the organization. The 2024 goal was 1.0, meaning that the volume of closed notifications equals the volume of submitted notifications.
- Average closure satisfaction (1-5 scale) is the sum of survey scores divided by the number of survey submissions. The 2024 goal was an average closure satisfaction greater than or equal to 3.5, where 5 is “very satisfied” and 1 is “did not meet expectations.”
- Quality closure (percent) is the number of CAP notifications passing quality review divided by the number of CAP notifications reviewed. The 2024 goal for quality closure was greater than or equal to 92 percent.
- Average Age of Open High-Risk Notifications (days) – This is the number of days high-risk notifications are open divided by the number of open high-risk notifications. The 2024 goal for average age of open high-risk notifications was 300 days.
- Average Age of Open Medium-Risk Notifications (days) – This is the number of days medium-risk notifications are open divided by the number of open medium-risk notifications. The 2024 goal for average age of open medium-risk notifications was less than or equal to 230 days.

Figure 9 shows how Gas performed against the above-mentioned key performance indicators in 2024.

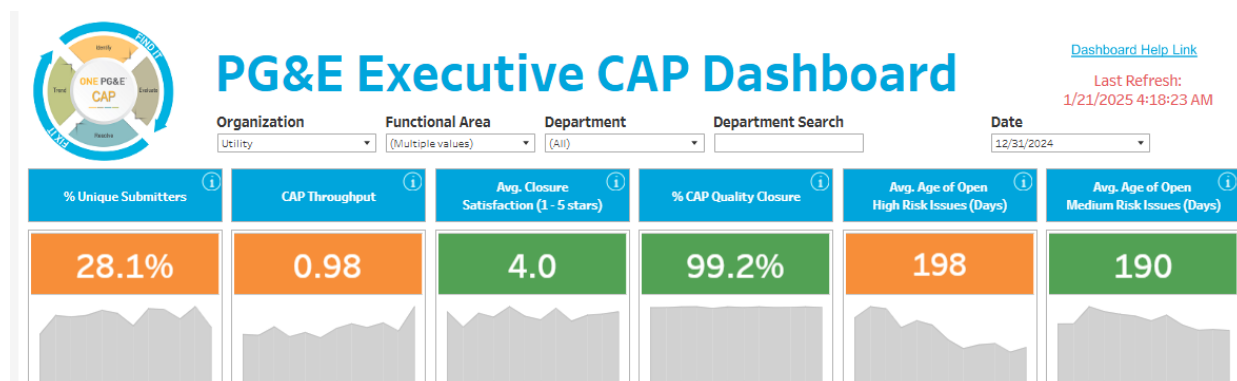


Figure 9 – CAP Metrics

Continuous Improvement and Speak Up Culture

The Gas CAP process continues to mature and serve an important role in Gas to identify and mitigate operational and safety issues and implement process improvements. The Gas CAP department also looks for ways to improve how it supports the business and continues to bring added value to operations.

Eagle Eye Program: In 2024, the Gas CAP Department logged 69 Eagle Eye nominations, which included nominations for identifying and submitting “good catch” issues and for efforts in resolving those issues.

Trending: In 2024, the Gas CAP team piloted the trending process from the model used by Diablo Canyon Power Plant (DCPP). The CAP team prepared trending packages for the functional areas to review, discuss with their teams, and evaluate if any potential trends existed. The trending packages included insights from CRT, causal evaluations, near hit events, their CAP inventory, CAP survey results, and high findings from the Quality Management team. The CAP team sent 8 packages in 2024 to pre-selected functional areas during this pilot year.

Quality Closure Review (QCR): QCR is a process in which the CAP team reviews closed notifications to determine if the responses meet the minimum quality closure requirements. Gas CAP reviews 100 percent of all closed notifications on a weekly basis. This process adds value to the organization by creating an expectation on how a notification should be resolved and closed.

b) ETHICS & COMPLIANCE HELPLINE

PG&E’s Ethics and Compliance (E&C) Helpline is a toll-free telephone number and website available to employees, contractors, consultants, suppliers, and customers 24 hours a day, 7 days a week. The E&C Helpline, managed for PG&E by Convercent, enables reporting parties to request guidance about our Code of Conduct (Code) or make a good-faith report of violations such as fraud, accounting issues, or illegal activity. Callers may remain anonymous throughout the entirety of their interaction with the helpline as well as any subsequent contact with E&C.

Concerns raised with E&C through its Helpline, or any other method, are documented and tracked to closure. PG&E has a strict policy against retaliation against anyone who speaks up or is involved in an investigation. The E&C Helpline is part of PG&E's commitment to foster a workplace where everyone feels safe to ask for guidance, share ideas, or raise concerns. It is also a culture where everyone is confident that those concerns will be heard, taken seriously, and thereafter followed up in a timely manner

c) MATERIAL PROBLEM REPORTING

PG&E encourages employees to report and act on problems with any materials, tools, gas, electric, and other equipment or infrastructure through the Material Problem Reporting (MPR) system. PG&E leverages the CAP reporting process to route material related problems to the MPR system. The MPR process is cross-functional and relies on employees at all levels of the business to identify potential safety issues stemming from material problems.

MPRs can be identified from two different sources:

- 1) As material arrives at PG&E's facilities, the PG&E team may identify "Incoming MPRs."
- 2) As work is performed with materials, personnel may identify "Field MPRs."

Incoming MPRs that are quality tested and found to fail at receipt prompt the creation of a Supplier Corrective Action Request (SCAR), requiring the supplier to resolve the issue. The SCAR process and system is managed by Supplier Quality Assurance (SQA) to ensure proper corrective actions are implemented. In 2024, the incoming gas MPR's had an average cycle time of 7 days, with a target of 20 days.

Field MPRs are submitted by field personnel from various job sites and PG&E locations who either received a problematic new material or identified a failed part on an asset as applicable. These Field MPRs are evaluated by Gas Engineering. PG&E uses trending from combined MPR data lists to review with SMEs. This is in line with the Wildfire Order Instituting Investigation (OII) requirements to trend MPRs generated in the field and allows insight into recurring material issues. Starting in 2023, Gas Technology Team meetings incorporated field MPR trend reviews into their agendas, enabling the timely examination of potential trends and facilitating investigation and corrective actions as applicable. In 2024, the field MPR program resulted in Supplier Quality issuing 23 SCARs and two Purges (a Purge is a PG&E system wide material recall). In 2025, PG&E will continue to utilize MPR data and trending with relevant SME technical teams and explore ways to improve the process.

2. PG&E COMPANY AND GAS SAFETY COMMITTEES

PG&E's safety governance structure drives a consistent safety culture and aligns to PG&E's safety strategy and results. Table 2 describes PG&E's Company and Gas safety committees and meetings. Gas

utilizes the forums described in Table 2 to ensure alignment with the Chief Safety Officer (CSO) and the Chief Risk Officer (CRO) across the enterprise. In addition to these standing committees and meetings, PG&E also executes three Safety Weeks annually. These Safety Weeks are spread out through the year and focus on topics like Human Performance Tools, Motor Vehicle Safety, the PSEMS, and Healthy Safety Culture.

Table 2 – Safety Committees and Meetings	
Board of Directors Safety and Nuclear Oversight (SNO) Committee	Provides oversight and review of (i) policies, practices, goals, issues, risks, and compliance relating to safety (including public, employee and contractor safety), and compliance issues related to PG&E's nuclear, generation, gas and electric transmission, and gas and electric distribution operations and facilities ("Operations and Facilities"), (ii) significant operational performance and other compliance issues related to such Operations and Facilities, and (iii) risk management policies and practices related to such Operations and Facilities.
Operations Safety Collaboration Center (OSCC)	Provides a forum in which PG&E leaders identify today's critical safety risks, drive cultural behavior improvements, and enable high-energy essential controls for workers to fail safely. Through the OSCC, the goal is to eliminate SIFs, achieve cross functional alignment related to high energy SIF hazards and mitigations, drive awareness and improvement actions to maintain a positive Safety Culture and share best practices and critical learning opportunities.
Safety MOR	Provides a forum to focus discussion on safety related metrics and topics including Serious Injury and Fatality events, learnings, and mitigations and Safety Strategy execution with a focus on monthly and annual performance against goals. Participants include the Senior Leadership Team and functional area leaders.
Safety Weekly Operating Review (WOR)	Provides a forum to focus discussion on safety related metrics and topics including Serious Injury and Fatality events, learnings, and mitigations and Safety Strategy execution with a focus on weekly performance against goals. Participants include the Senior Leadership Team and functional area leaders.
Corporate Security WOR	Provides a forum to focus discussion on security and safety issues that coworkers are facing, including mitigation strategies and learnings from current activities. Outcomes can be updated to include program enhancements and expansion, including security liaisons and support to other parts of the service territory.
PMVI Daily Operating Review (DOR)	Provides a forum to focus discussion on Preventable Motor Vehicle Incidents, learnings, and mitigations. Participants include functional area leaders who have experienced a PMVI the prior day.
DART MOR	Provides a forum to focus discussion on Days Away Restricted and Transferred (DART) cases, learnings, and mitigations. Participants include functional area leaders who have experienced a DART the prior month.
Gas Safety Council	Sponsors initiatives to improve safety across the Gas Functional Area. Monitors Gas safety performance and initiatives to ensure risks are adequately addressed. For more information on the Gas Safety Council, please refer to Section II.2.a.
Enterprise Grassroots Safety Council	Includes representatives from all functional areas across the Company to focus on frontline and office workforce safety.
Gas Grassroots Safety Teams	Employee-led, leadership supported, efforts to identify opportunities to improve safety, define and validate possible solutions, and implement and promote safety initiatives. For more information on the Gas Grassroots Safety Teams, please refer to Section II.2.b.
Training Alignment Committee	Provides a forum comprised of Academy, Gas Operations, Electric Operations, IBEW, and Safety Partners, to provide strategic direction on training for Gas Operations as well as to continuously review and monitor Gas Operations training execution. This committee meets monthly to review progress on existing Gas Operations training initiatives and to identify and address emerging issues and training needs.
Safety Partners Meeting	Provides a monthly forum, hosted by PG&E and IBEW leaders, to openly discuss concerns, key initiatives, and opportunities Enterprise Health & Safety has to better support delivery of PG&E's Safety Stand – "Everyone and Everything is Always Safe".

Table 2 - Safety Committees and Meetings (a)

Gas Contractor Safety Committee	Provides a quarterly forum, facilitated by the Gas Contractor Safety team, for collaboration with all gas contractor safety and operations leadership. This meeting is an open environment to discuss key Health and Safety initiatives, new or updated policies/standards/procedures, and Enterprise Contractor Safety team and Operator Qualifications team updates, concerns, and issues. The intent is to improve overall safety in the field with our contractor partners and their subcontractors. For more information on contractor safety, please refer to Section V.5.
Enterprise Contractor Safety Committee	Provides a monthly forum comprised of Safety Champions and key leadership from all functional areas to discuss recent updates and modifications made to our Enterprise Contractor Safety Management Standard - SAFE-3001S, the associated procedures, and overall compliance with the Kern OII. The meetings are recorded, and notes are provided to ensure that those unable to participate can still receive updates. Additionally, an Annual Safety Forum is conducted with key contractor leadership and representatives from functional areas with high energy safety risks to ensure continued development and maturation of the SIF Capacity Learning Model and associated controls, as well as an improved Safety Culture.

(a) Kern OII is no longer an active investigation and is closed. The annual assessments of oversight procedures associated with Kern OII ensures PG&E continues to maintain compliance.

a) GAS SAFETY COUNCIL

In 2024, the Gas Safety Council was held monthly from February through December. This meeting is sponsored by the Senior Vice President (SVP) of Gas Operations and facilitated by the Senior Director of Gas Operational Excellence. The Council is composed of Senior Leadership, including the SVP of Gas Operations, Vice President of Gas Engineering, Vice President of Gas T&D, and the Senior Director of Gas Operational Excellence, and Labor Union Leaders from both the IBEW Local 1245 and the Engineering and Scientists of California (ESC). Invited attendees include the Grassroots Safety Teams,⁶ Gas Operations, Gas Safety Excellence, Human Resources leaders, Gas Engineering, Enterprise Health & Safety, Corporate Safety, and others as needed. The primary objectives are to provide overall governance of safety, guide department safety strategy, ensure compliance with Company safety standards, execute Chairman's Risk and Safety Committee directives, provide another channel to raise safety concerns, and promote positive safety culture change.

Throughout 2024, the Gas Safety Council facilitated productive conversation and effective closure of 73 safety concerns and opportunities, including the Energy Wheel addition to the JSSA, development of the Energy Wheel video, engineering safety into jobs and processes, problem solving related to Joint Trenching issues, and supporting the need for Two Way Radio training.

b) GAS GRASSROOTS SAFETY TEAMS

Gas Grassroots Safety Teams are composed of Chairs, Co-Chairs, and members primarily from Gas field positions. The Chairs meet on a regular cadence to discuss issues, strategy, concerns, successes, roadblocks, and any barriers that may exist. As of December 2024, Grassroots had over 239 members. The teams include Field Services, Maintenance & Construction, Damage Prevention, General

Construction Gas, Corrosion, Leak Survey, Gas Transmission, and Gas Pipeline Operations and Maintenance (GPOM).

Highlights from Gas Grassroots in 2024 include:

- Organized and hosted Driving Rodeos, Field Service Module Zero Training, Ergo Days, Frontline Safety Culture Coaching and Partnership Workshops, and Safety Summits across all the PG&E Field Service territory.
- Supported mutual aid training in Kern County with the Southern California Gas Company (SoCalGas), Live Action Drills, De-Escalation training, and 4x4 Safety Awareness.
- Conducted 1,092 field visits throughout multiple departments and identified 167 opportunities for improvement.
- Created and shared the Gas Grassroots Newsletter, resulting in over 6,700 views.

The Grassroots Video team published 57 new safety videos highlighting significant safety topics including the Energy Wheel, Live Action Emergency Drills, De-Escalation Training and emphasized Joy at Work. High energy hazards, SIF prevention, and the Stuff That Can Kill You (STKY) will be the main focuses for Grassroots TV in 2025.



Figure 10 – Grassroots Safety Meeting Attendees and Grassroots TV Photos

III. PROCESS SAFETY

Process Safety Management⁷ focuses on preventing low frequency, high-consequence incidents and mitigating the consequences from these incidents. The Process Safety Management System consists of four foundational areas (Figure 11): Commit to Process Safety, Understand Hazards and Risk, Manage Risk, and Learn from Experience. The Process Safety Management System is used for engineering new facilities, modifying existing facilities, maintaining equipment, and ensuring safe operation. PG&E is improving process safety performance by strengthening performance in each of these four foundational areas.



Figure 11 – The PG&E Process Safety Management System

The Process Safety Management System is well integrated within the enterprise-wide PSEMS [see Section I.3. *PG&E Safety Excellence Management System* and Figure 12 below] to safely manage the planning, construction, operation, decommissioning, and maintenance of gas assets and associated activities, and to ensure the safe, reliable, affordable, and clean delivery of natural gas.



Figure 12 – The PG&E Safety Excellence Management System

2024 Process Safety Highlights

Commit to Process Safety: Guided by the elements set by the Center for Chemical Process Safety, PG&E's continued commitment to implement process safety aligns with API Recommended Practice (RP) 754 *Process Safety Performance Indicators for the Refining and Petrochemical Industries*.⁸ To help Gas Operations operate and maintain safe facilities and consistently implement process safety practices, the Gas Process Safety team continued to review new and updated procedures and standards. In addition, Gas Process Safety supported the enterprise PSEMS and Gas OSCC with the deployment of the PSEMS. The PSEMS prevents injury and illness by systematically managing processes, assets, and occupational health. Process Safety is a key pillar to the PSEMS (see Figure 12), and the Gas Process Safety team contributed their Process Safety Management expertise and experiences during the development of the PSEMS framework, elements, and manual. As part of the PSEMS deployment, the Gas Process Safety team worked with Electric Operations Substation and Transmission-Line teams to develop workstream specific Hazard and Control Lists, including Process Safety principles, and worked to deploy Process Safety within Electric Operations. Finally, as part of Stakeholder Outreach within Gas Operations and Engineering, in 2024 the Gas Process Safety team published quarterly Process Safety Newsletters, conducted Process Safety Learning Sessions, and hosted Overview of Process Safety training sessions.

Understand Hazards and Risk: Process Safety Management is a key component in reducing PG&E's operational risk exposure. In 2024, the team continued to focus on maturing design risk assessments, standardizing and simplifying project design-phase Process Hazard Analysis (PHA) activities and checklists, and conducting complex project and facility PHAs. Identifying hazards and providing effective safeguards (layers of protection) to improve safety and reduce the risk by answering the five Process Safety questions and addressing the energy sources (see Figure 13) helps Gas Operations and Engineering understand and manage the risk associated with gas engineering designs or facilities activities. In 2024, Gas Engineering conducted PHAs for 100 percent of the 606 applicable projects: 475 in gas distribution and 131 in gas transmission.



Figure 13 – Gas Process Hazard Analysis (PHA) Process

Manage Risk: In 2024, risk mitigation efforts included:

- MOC (Figure 14) process improvements,
- Pre-Startup Safety Reviews (PSSR) completion and process improvements,
- Safe Work Practices process improvements, and
- Overview of Process Safety training improvement.

The focus of the MOC program is to assure that changes in operations, procedures, standards, facilities, materials, or organizations are evaluated to identify hazards and to ensure that associated risks are effectively managed. MOC ensures changes achieve their intended purpose without compromising workforce, public, and environmental safety.

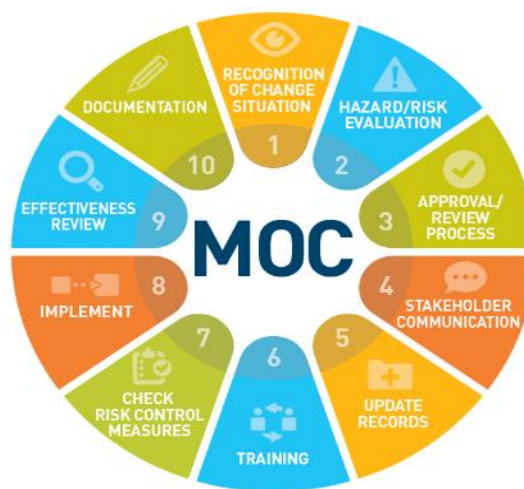


Figure 14 – Gas MOC Process

The Gas Process Safety team also continued to update the PSSR checklists. To ensure identification and mitigation of risk prior to tie-ins, in 2024, Gas Engineering conducted PSSRs for 100 percent of the 132 applicable transmission projects.

Additionally, in 2024, the Gas Process Safety team conducted or supported the following Safe Work Practices improvements:

- Safety Critical Equipment (SCE) Deployment: Deployed criteria for identifying SCE and collaborated with PHA teams to create SCE lists for gas processing and compressor facilities to ensure risk management before project execution.
- Elevated Review Process (ERP) Gas Clearance Criteria: Supported the development of the ERP Gas Clearance Criteria, adding it to the existing clearance process for medium- and high-risk clearance work.

- Job Hazard Analysis (JHA) Program: Developed a draft JHA procedure and process. Assisted in piloting the program by developing select JHAs.

Finally, Gas Process Safety revised the Overview of Process Safety training and expanded the list of profiled employees to reach a larger population within Gas Operations and Engineering, as part of our effort to continuously improve and mature our Process Safety.

Learn from Experience: As PG&E endeavors to continuously improve in Process Safety, Gas Process Safety engineers support incident investigations and cause evaluations on an as-needed basis. Lessons learned from these incidents are shared through Process Safety Moments during DORs or other senior leadership platforms.

In 2024, Gas Operations and Engineering continued the journey of Process Safety Management maturity. Gas Operations and Engineering continued to be compliant, per a third-party assessment, with the intent of API RP 754 and Process Safety Performance Indicators, demonstrating a commitment to incident prevention. The Process Safety Indicator (PSI) Dashboard is based on a pyramid framework from the most serious incidents (Tier A) at the top to leading indicators, such as issues indicating operating discipline or management system concerns (Tier D), at the bottom of the pyramid (Figure 15). The PSI Dashboard drives ownership and accountability and ensures leading indicators (Tier C and D) are proactively identified and acted upon to prevent a major gas incident (GI) (Tier A and B) that can lead to serious injuries, fatalities, or cause significant interruption to the gas business.

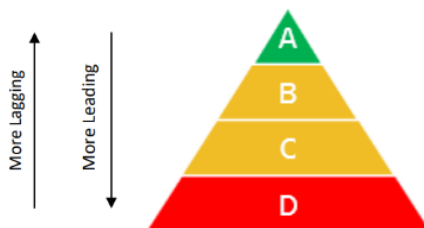


Figure 15 – Pyramid Framework for PSI Dashboard

In addition, the Gas Process Safety team improved the PSI Dashboard functionality, conducted trend analysis for the leading and lagging indicators, and proposed aligning the various leading and lagging indicators metrics among the individual PSI Dashboard Tier levels A through D against the PSEMS elements.

Finally, the Gas Process Safety team continued to identify GI and Process Safety Near Hits and supported further development of the Process Safety Near Hit Program to align with the Gas and enterprise-wide Near Hit Program. The Gas Process Safety Near Hit Program's mission, guided by the Safety Principles and Keys to Life, is to substantially advance the enterprise-wide engagement in the

reporting, sharing, and dialogue of Near Hit and hazard events to prevent employee and public safety incidents.

IV. ASSET MANAGEMENT

PG&E builds, operates, and maintains natural gas infrastructure to transport, store, and deliver gas to customers in Northern and Central California. There are inherent risks to operating any natural gas system; this is particularly true for PG&E's system as it passes through populated areas and a wide variety of terrain.

The top three operational risks confronting PG&E's natural gas system are a Loss of Containment on Gas Transmission Pipeline, a Loss of Containment on Gas Distribution Main or Service, and a Large Over-pressurization Event Downstream of Measurement & Control Facility (see *Section IV.3 Risk Management Process* for more information). PG&E's strategy to address these risks through asset management consists of knowing the assets and their condition, understanding the risks for those assets, and developing and implementing risk reduction strategies with the intent to reduce risk in balance with operational performance and cost. Asset Management is part of the PSEMS Element 4: Strategy, Objectives and Planning.

The following sections describe PG&E's asset management system, the asset families, how PG&E Gas manages risk, and the current risk portfolio.

1. ASSET MANAGEMENT SYSTEM

PG&E maintains an asset management system to help drive the business toward achieving its commitment to the safe, reliable, affordable management and operation of PG&E's gas assets. Using ISO 55001 "Asset management—Management systems—Requirements," PG&E's asset management system focuses on:

- Knowing the condition of the assets;
- Understanding the risks to those assets;
- Implementing asset risk reduction strategies;
- Maintaining asset condition and performance; and
- Balancing asset cost, risk, and performance in pursuit of the asset management strategic objectives.

The Gas Operational Excellence Policy governs the foundation for PG&E's Gas Asset Management system while the vision and strategy for enhancing the system is documented in the Strategic Asset Management Plan. PG&E maintains Asset Management Plans for each of its nine gas asset families and reports regularly to the CPUC on its safety and reliability investments.⁹

2. ASSET FAMILY STRUCTURE

PG&E continues to use the asset family structure to identify, manage, and mitigate risks faced by the gas assets. The asset family structure also provides a consistent approach for PG&E to address risks. PG&E's nine Gas asset families are illustrated in Figure 16.

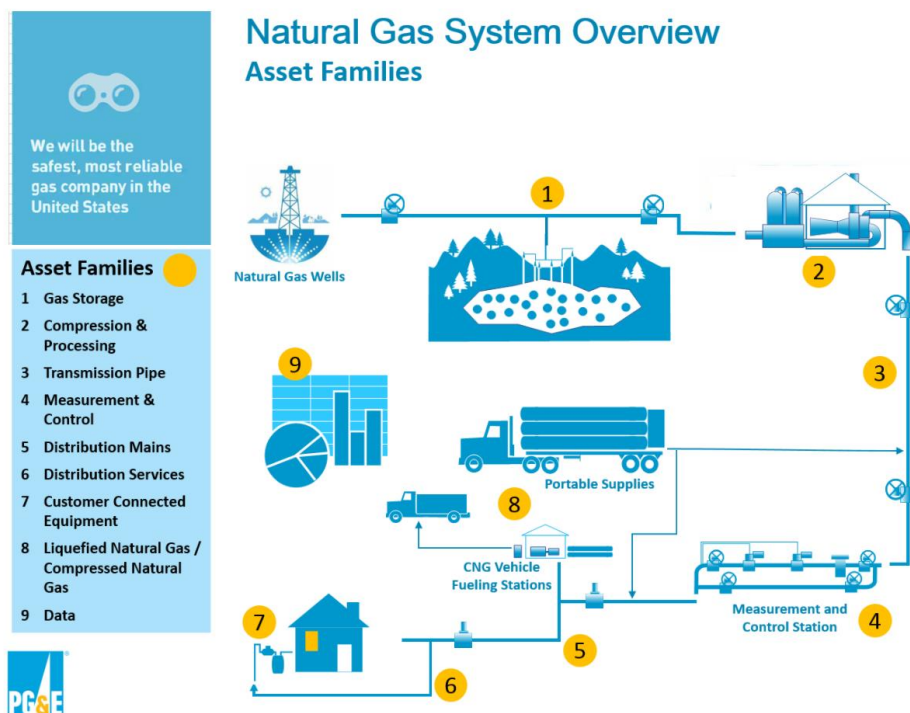


Figure 16 – Natural Gas System Overview – Asset Families

Each asset family has an Asset Family Owner (AFO) who is responsible to understand the asset condition, the risks to the assets, and to develop a risk-informed Asset Management Plan (AMP). An AMP is a five plus year plan for managing gas assets. For 2024 changes to PG&E's AMPs, please see Attachment 02.

The AFO leads the preparation of the AMP for each asset family that describes:

- Asset inventory and condition;
- Asset threats and risks;
- Desired state for the assets and strategic objectives for achieving desired state;
- Programs and risk mitigations; and,
- Areas for continual improvement.

AMPs are living documents that evolve as new asset or risk management information becomes available. The following sections summarize the types of assets in each family, the function these assets serve in the gas system, and the progress towards achieving long-term goals.

a) **GAS STORAGE**

Presently, the Gas Storage Asset Family includes PG&E-owned and operated underground natural gas storage facilities at McDonald Island, Los Medanos, and Pleasant Creek. The primary assets within this family include 105 storage wells, 16 miles of transmission pipe, well controls for all injection and withdrawal wells, and 3,404 acres of storage reservoirs with over 51.1 billion cubic feet (Bcf) of working gas capacity.



Figure 17 – Rig and Well Platform

The United States (U.S.) Department of Transportation Pipeline and Hazardous Materials Safety Administration (PHMSA) oversees Underground Gas Storage (UGS) for operators; their rules include adoption of the API's RPS 1170¹⁰ and 1171¹¹ outlining requirements around risk and integrity management, design standards, emergency response, and training. For operators in California, UGS is also regulated by the California Geologic Energy Management Division (CalGEM), which imposes additional requirements for elimination of a single point of failure, necessitating modified well design and construction and other operational changes, such as inspection methodology and increased reporting, in more recent years. PG&E is currently in the final year of converting its assets to dual barrier construction as required by CalGEM – a configuration that significantly impacts available well capacity and reduces the well withdrawal rates on the project by approximately 40 percent. Also consistent with CalGEM's requirements, PG&E has proposed a risk-based reinspection cycle to CalGEM following the baseline inspection and conversion to dual barrier; a decision from CalGEM remains pending.¹²

Additional regulatory decisions related to gas storage continue to be promulgated and are expected to continue to increase and evolve in the coming years in the state of California.

In response to CPUC decision D.19-09-025 in PG&E's 2019 Gas Transmission and Storage (GT&S) Rate Case, the Natural Gas Storage Strategy (NGSS) was adopted. PG&E solicited a buyer for the Pleasant Creek Storage Facility and in July 2023, PG&E submitted a California Pub. Util Code section 851 filing to the Commission for which a decision remains pending. Further, the 2023 General Rate Case (GRC) Final Decision (D.23-11-069) approved PG&E's request to retain Los Medanos and continue to operate the facility as storage. As part of the decision, PG&E was also approved to move forward with a compressor replacement project given the long-term need for UGS in Northern California.

The Gas Storage Asset Management Plan describes the strategy for mitigating and managing risk for this asset family and achieving the established asset management objectives. Examples of key objectives included in the Asset Management Plan are shown in Table 3.

Table 3 – Gas Storage Asset Management Plan Strategic Objectives and Progress To-Date	
Overall Objective/Goal	Progress Towards Goal
Complete baseline well production casing assessments on 104* wells by 2025 *11 Wells Plugged & Abandoned from 2017-2023, for a net remaining wells of 105	Number of baseline assessments performed: 2020: 20 wells 2021: 17 wells 2022: 18 wells 2023: 22 wells 2024: N/A – 100% baseline inspections completed in 2023
Evaluate and incorporate Well Risk & Integrity Management Plan (WELL) enhancements	2020: Reviewed and revised WELL with sections re-written as either standards, procedures, or guidance. 2021: Published WELL Rev 6, TD-4870M. 2022: Published necessary updates to TD-4870M. 2023: Restructured and published necessary updates to TD-4870M. 2024: Publication of updates to Gas Storage Asset Management Manual, TD-4870M, continued web-based training development for TD-4870M (8 published).
Assess work on Non-HCA Storage transmission pipeline with support of the Transmission Integrity Management Program (TIMP)^(a)	2020: Installed single line 1.6 miles and removed 2.6 miles of dual lines transmission pipe on the west side of Whiskey Slough. 2021: Installed single line 1.1 miles and removed 2.2 miles of dual lines transmission pipe on the north side of Turner Cut. 2022: Completed Turner Cut South Pipe replacement project. 2023: No storage pipe projects completed. 2024: Approximately 1 mile of non-HCA pipe at McDonald Island successfully hydrotested; completed pipe replacement work to accommodate future drilling activities.
Continue PHA and PSSR on all well, surface equipment, and pipeline in storage asset family	Number of PHAs and PSSRs complete: 2020: 38 PHAs, 15 PSSRs 2021: 36 PHAs, 14 PSSRs 2022: 34 PHAs, 20 PSSRs 2023: 21 PHAs, 12 PSSRs 2024: 17 PHAs, 77 PSSRs (Ramp up of PSSRs due to change in process for cleanup)
(a) Pipe within the storage asset family boundary that is non-HCA is subject to the highest internal corrosion threats within the system due to the nature of processing. The Storage Asset Family partners with the TIMP program to employ the appropriate inspection techniques to ensure the safe operation of these facilities at UGS Facilities.	

The Gas Storage Asset Management Plan describes these objectives in more detail.

b) COMPRESSION AND PROCESSING

PG&E's Compression and Processing (C&P) facilities move gas from receipt points to customer delivery locations and provide for injection and withdrawal of gas at PG&E's UGS facilities. Gas processing equipment provides gas that is sufficiently dehydrated and odorized so that it can be transported to the gas T&D systems, meeting quality requirements. This asset family includes nine transmission compressor stations. Storage



Figure 18 – Delevan K-1 Compressor Unit

compressors are also installed at PG&E's three underground storage facilities.¹³ Major assets include 41 company-owned compressor units, as well as associated equipment such as filter-separators,

odorizers, pumps, motor control centers, and station piping, among others. C&P facilities are critical in maintaining the reliability of the gas system.

The C&P Asset Management Plan describes PG&E’s strategic objectives related to the C&P assets. Key strategic objectives for C&P assets include the following:

Table 4 – Compression and Processing Asset Management Plan Strategic Objectives and Progress To-Date	
Overall Objective/Goal	Progress Towards Goal
Maintain total number of compressor unscheduled outages below 202 in 2024.	Communications issues at one compressor station contributed to 2024 count. Target = 202; Actual = 229.
Complete MAOP reconfirmation (ECA2) and/or pressure (strength) testing activities on at least 50 percent of transmission station mileage by July 3, 2028, as required by CFR 192.624(b)(1).	Completed field inspections at 18 locations. Submitted multiple strength test project scopes to execution team.

The C&P Asset Management Plan describes these objectives in more detail.

c) TRANSMISSION PIPE

The Transmission Pipe asset family consists of approximately 5,650 miles of line pipe and major components, such as valves and fittings, used in transporting natural gas.¹⁴ PG&E’s TIMP (Transmission Integrity Management Program) governs how PG&E identifies threats and evaluates risks, reduces risk through risk mitigation activities, and assesses integrity performance within the Transmission Pipe asset family. The TIMP is a core foundation of PG&E’s ongoing efforts to provide safe and reliable service, consistent with industry best practices and based on federal TIMP regulations.¹⁵



Figure 19 – Line 300B seismic retrofit near Gilroy

On December 14, 2023, the California Public Utilities Commission (CPUC) approved PG&E’s proposal to update definitions of “distribution center,” “transmission line,” and “large-volume customer.” These changes, commonly referred to as “TransDef,” allow for the reclassification of select assets from Transmission to Distribution. PG&E is implementing the change in accordance with CPUC Decision 23-12-003 to include updates of asset records and work plans. The effort to implement the change is underway and is reflected in the reduction of mileage for this asset family.

The Transmission Pipe Asset Management Plan describes the roadmap for mitigating and managing risk for this asset family and for achieving the established asset management objectives. The plan's objectives include the following:

Table 5 – Transmission Pipe Asset Management Plan Strategic Objectives and Progress To-Date	
Overall Objective/Goal	Progress Towards Goal
1. Expand the integrity management program to pipelines in HCAs, MCAs, and non-HCA Class 3 & 4 by end of 2034.	<ul style="list-style-type: none"> 83.6 percent of the HCA, MCA, and Class 3 and 4 miles of pipe have had baseline assessments. 57 percent (3,701 miles) of transmission pipe have been assessed using TIMP methods.
2. Execute TIMP to achieve program objectives of zero incidents and full compliance.	<ul style="list-style-type: none"> 1 PHMSA reportable incident in 2024 attributable to Transmission Pipe assets (2 PHMSA reportable transmission incidents total). Completed 159.5 miles of 2024 HCA Assessment credit mileage. 0 missed assessments in 2024.
3. Upgrade 65 percent of the transmission system for in-line inspection devices by end of 2038.	<ul style="list-style-type: none"> 1 completed ILI upgrade resulting in additional 36.5 miles piggable. In-Line Inspection – inspected 366.47 miles in 2024. 58.09 percent of the system is piggable (through EOY 2024). See Section IV.5.g for additional information on in-line inspection.
4. Manage the Corrosion Control system and practices to further reduce the time-dependent corrosion risks by end of 2034.	<ul style="list-style-type: none"> Cathodic protection (CP) availability maintained at 93 percent in 2024. Conducted Close Interval Surveys (CIS) on 92 miles in 2024, for a total of 68 percent of the system surveyed.
5. Meet 100 percent of system capacity obligations and minimize high risk manual operations in peak day conditions.	<ul style="list-style-type: none"> High risk manual operations increased (from 5 in the 23-24 winter to 6 for the 24-25 winter). 8 of 9 transmission regions meet all expected load conditions. See Section IV.6.a. for more information on System Capacity Design Criteria.
6. Update PG&E's gas transmission assets to improve incident mitigation management (IMM) by end of 2030.	<ul style="list-style-type: none"> Installed 9 automated valves in 2024. 51 percent system meeting IMM gas evacuation time goal. See Section IV.7.d for additional information on automated valves.
7. Achieve and maintain a first quartile Damage Prevention program to further reduce transmission dig-ins.	<ul style="list-style-type: none"> See Section IV.5.a. for more information on PG&E's Damage Prevention Program and progress.

The Transmission Pipe Asset Management Plan describes these objectives in more detail.

d) MEASUREMENT AND CONTROL

PG&E's M&C assets monitor, measure, and control pressure and flow within the gas T&D systems. The assets in this family perform a critical role in system safety by protecting downstream assets from system pressure excursions and gas quality degradation. Additionally, in concert with the C&P asset family, these assets perform a key role in overall system reliability.



Figure 20 – M&C Complex Station-Above Ground

The physical assets within this family include three gas terminals, 340 gas transmission stations, 460 transmission large volume customer type facilities, 100 automated valve sites, over 2,350 distribution district regulator stations and 1,400 farm taps. The asset family also includes odorizers and analyzers along with other equipment that monitors gas quality. PG&E's M&C assets are located above and below-ground, including within vaults. As examples, Figure 20 shows a M&C complex transmission station and Figure 21 shows a large volume customer facility.



Figure 21 – Large Volume Customer Facility

The M&C Asset Management Plan describes PG&E's strategic objectives for the M&C assets. The strategic objectives for M&C assets are the following:

Table 6 – M&C Asset Management Plan Strategic Objectives and Progress To-Date	
Overall Objective/Goal	Progress Towards Goal
Develop overpressure risk prioritization tool by end of Q2 2024 and utilize to develop long-term overpressure risk mitigation plan for inclusion in the 2027 GRC.	<ul style="list-style-type: none"> Large overpressure (OP) events per year: 2020 – 9; 2021 – 5; 2022 – 9; 2023 – 5; 2024 – 4. Published 2024 revision of the OP Long-Term Plan. Continued installation of secondary overpressure protection devices. Significant progress in installation of token relief valves at large volume customer facilities.
Complete MAOP reconfirmation (ECA2) and/or pressure (strength) testing activities on at least 50 percent of transmission station mileage by July 3, 2028, as required by CFR 192.624(b)(1).	<ul style="list-style-type: none"> Completed field inspections at 18 locations and submitted multiple strength test project scopes to execution team.

The M&C Asset Management Plan describes these objectives in more detail.

e) DISTRIBUTION MAINS AND SERVICES

This asset family includes approximately 45,200 miles of distribution main pipeline that connects to the gas measurement and control asset family on the upstream side and transports natural gas to customers throughout the service area. It also includes approximately 3.7 million service lines totaling approximately 35,000 miles of pipeline that deliver gas from the distribution mains to the assets in the Customer Connected Equipment family on the downstream side. Combined, the distribution mains and services asset family comprise approximately 80,200 miles of distribution pipeline – enough pipeline to wrap around the equator of the earth over three times.



Figure 22 – Employee Working on Distribution Main and Service

The Distribution Mains and Services asset family generally begins at the outlet of the Measurement and Control regulator station assets and ends at the inlet of the distribution service shutoff valve, which is where the Customer-Connected Equipment asset family begins. The programs associated with the Distribution Mains and Services asset family are focused on the inspection, maintenance, and replacement or deactivation of Distribution Main and Service assets. PG&E continues to identify and assess threats to Distribution Mains and Services assets using a federal code compliant operational risk model and then works to mitigate those threats, including through its Distribution Integrity Management Program (DIMP). Some key strategic objectives include the following:

Table 7 – Key Distribution Mains and Services Metrics (a)	
Overall Objective/Goal	Progress Towards Goal
Achieve and maintain 1st quartile for 3rd-party gas dig-ins	PG&E set a third-party dig-in target of 1.12 dig-ins per 1,000 tickets for 2024. In 2024, PG&E experienced 0.95 dig-ins per 1,000 tickets for third-party dig-ins.
Achieve a removal rate of pre-1985 pipe that limits asset age to 100 years by 2030	2012: 41 miles replaced 2013: 62 miles replaced 2014: 59 miles replaced 2015: 91 miles replaced 2016: 111 miles replaced 2017: 131 miles replaced 2018: 135 miles replaced 2019: 110 miles replaced 2020: 112 miles replaced 2021: 173 miles replaced 2022: 187 miles replaced 2023: 102 miles replaced 2024: 131 miles replaced

(a) Totals exclude the Reliability Main Replacement Program (MAT 50A).

The Distribution Mains and Services Asset Management Plan describes associated strategic objectives in more detail.

f) CUSTOMER-CONNECTED EQUIPMENT

The Customer-Connected Equipment Asset Family is composed of approximately 4.8 million gas meters and associated regulators, over-protection devices, shut-off valves, piping, and fittings that connect the gas distribution service to the customer. Customer meters are used to measure gas usage to support the billing function.

The Customer-Connected Equipment Asset Management Plan provides an overview of the assets, threats to these assets, and efforts underway to manage these threats. The plan presents the asset inventory, an assessment of condition and overview of key risks to these assets. The plan also includes long-term strategic objectives and an overview of the key programs in progress to mitigate these risks. One of the plan's key strategic objectives is included in Table 8.

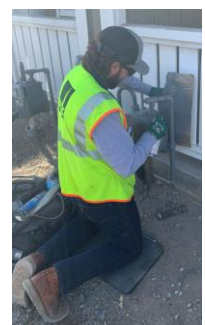


Figure 23 – PG&E Employee Working on Customer Connected Equipment

Table 8 – Key Customer Connected Equipment Metrics	
Overall Objective/Goal	Progress Towards Goal
Reach a steady state of 60,000 –70,000 pending non-hazardous meter set leaks for repair annually.	2015 end of year inventory: 66,000
	2016 end of year inventory: 63,113
	2017 end of year inventory: 59,424
	2018 end of year inventory: 84,571
	2019 end of year inventory: 106,686
	2020 end of year inventory: 152,698
	2021 end of year inventory: 158,331
	2022 end of year inventory: 159,565
	2023 end of year inventory: 178,535
	2024 end of year inventory: 167,560

The Customer Connected Equipment Asset Management Plan describes associated strategic objectives in more detail.

g) LIQUEFIED NATURAL GAS AND COMPRESSED NATURAL GAS

The Liquefied Natural Gas (LNG)/Compressed Natural Gas (CNG) asset family consists of portable assets that provide natural gas supplies utilizing either LNG and/or CNG to offset or supplement pipeline flowing supplies for planned outages, winter peak load shaving, unplanned outages, and in emergency situations. The LNG/CNG asset family consists of over 200 portable assets with the inclusion of PG&E owned mobile odorization units as well as portable cross compression which is primarily utilized to move isolated methane to an adjacent pipeline reducing overall raw methane emissions during pipeline work. In 2024, there were no loss of containment incidents for portable assets as indicated in Table 9.



Figure 24 – Portable Cross Compression Degassing Isolated Segment of Pipeline into Adjacent Line



Figure 25 – A Large-scale LNG injection Site in Dublin, CA Supporting a Planned Gas Outage

The LNG/CNG asset family also includes 32 CNG station assets to supply high pressure natural gas that fuels PG&E and third-party vehicles while also providing gas supply to our portable CNG assets. In 2014, PG&E instituted an industry-leading inspection program to assure the integrity of customer CNG vehicle fuel systems. In 2024, PG&E remained 100 percent compliant with PG&E owned natural gas vehicle fueling stations. This compliance was achieved when either the customer submitted their required three-year vehicle certificate of inspection or the customer’s fueling privileges were suspended until the inspection was completed. In 2024, there were no significant loss of containment incidents for CNG Station assets.

Table 9 – Liquefied Natural Gas/Compressed Natural Gas Asset Management Plan Strategic Objectives and Progress-to-Date	
Overall Objective/Goal	Progress Towards Goal
Driving towards zero significant LNG/CNG loss of containment incidents	2024: Continued maintenance, investments, and upgrades of LNG/CNG equipment and assets. Continued LNG/CNG equipment training development and administering, including the adoption of LNG/CNG apprenticeship program. Continued improvements in quality control program to verify overall effectiveness of maintenance and training programs for LNG/CNG assets.
Implementing an industry-leading inspection program to improve safety inspection certifications to 100 percent of CNG fuel customer vehicles	2024: 100 percent of natural gas fueling customers authorized to fill at our facilities submitted their three-year cylinder certification to ensure compliance with current Federal Motor Vehicle safety standards.
Reduce risk of portable natural gas transportation traffic incidents by reducing equipment issues through an improved maintenance program	2024: Continued maintenance of LNG/CNG portable over-the-road assets by dedicated fleet mechanics with Transportation Services. Hazardous material transport trailer quality control program continues to be in place to verify overall effectiveness of the below the deck maintenance program.

The LNG/CNG Asset Management Plan describes these objectives in more detail.

h) DATA

Established in 2018, Gas Data Management (GDM) has become an integral part of Safety Management Excellence. Successful management of data as an asset relies on developing and maintaining high-quality data and the recognition that achieving this requires time, effort, and organizational support from leadership and data stewards. In 2024, a pilot for Strategic Data Plans (SDP) was introduced. SDPs are designed to identify data sets associated with mission critical business functions to ensure the data are brought under management, that levels of data quality are assessed, and that business data stewards are identified and trained. Three SDPs were successfully piloted in 2024, and 10 data stewards were trained in newly developed training courses. 22 SDPs have been identified at this time; prioritization for roll out is still being determined.

In 2020, PG&E contracted with Palantir to implement the Foundry enterprise data platform to centralize, curate, and transform data into business insights through creation of data products. Foundry currently is connected to over 50 source systems from Gas, Electric, and Customer Care, containing billions of records relevant to asset health analytics, such as Geographic Information System (GIS) and SAP. Foundry does not replace the underlying source data systems of record, but rather, provides a central platform to enable data integration, visualization, and actionable insights. In Gas, Foundry has provided access and support for data management and advanced analytics to visualize records in both GIS and SAP. Key metrics have been established with IT and the Enterprise Data Management teams. Highlights from 2024 include the following:

- Gas surpassed the savings goal of \$1.37MM for Gas Corrective Overlay, our inaugural work management product built in Foundry in 2023, achieving a total savings of \$1.41MM and exceeding the target by \$41 thousand.
- GDM delivered our first Machine Learning (ML) Predictive Model. By using Supervisory Control and Data Acquisition (SCADA), clearance, and station map data in Foundry, the model uses predictive analytics to determine the probability of regulator failures by identifying anomalies in data patterns.
- Plans continue to create more predictive and AI/ML tools, currently under development is a ML Core Load Forecasting Model that will use predictive analytics and gas trends to forecast usage for our core procurement groups.

Key Metrics are presented in Table 10. Strategic goals, and progress towards those goals, are listed in Table 11.

Table 10 – Key Data Asset Metrics for 2024

Overall Objective/Goal	Progress Towards Goal to Date
Data Sets Under Management	<ul style="list-style-type: none"> 42 Datasets completed: Target: 100%; Actual: 120%. 1,129 CDEs collected in 2024 out of 2,332 collected to date. 2,123 Data Quality Rules collected in 2024 out of 4,423 collected to date.
Data Quality Key Performance Indicators (KPIs)	<ul style="list-style-type: none"> At least 1 data quality rule applied (EDM KPI 1b): Target: 100%; Actual: 100%. Overall coverage applicable to Data Quality Rules; Conformity, Uniqueness, Completeness (EDM KPI 2): Target: 100%; Actual: 100%. Development continues on TD-50015

Table 11 – Data Asset Management Plan Strategic Objectives and Progress to Date

Overall Objective/Goal	Progress Towards Goal
Continue Implementation of Data Stewardship in alignment with the Enterprise Data Strategy and reach PSEMS level 4 maturity by the end of 2028.	<p>Created Data Quality Rules with SMEs to Assess and Monitor Data Health:</p> <ul style="list-style-type: none"> 4,423 Data Quality Rules measured 2332 Critical Data Elements measured 52 Critical Datasets assessed <p>Contractors to Continue to Collect Metadata and Create Data Quality Rules:</p> <ul style="list-style-type: none"> Two analyst contractors and one project manager
Develop and implement the data governance framework to improve underlying data quality to effectively manage risk outcomes for all Gas asset families by the end of 2028.	<p>Strategic Data Plans: <u>Short- & Long-Term SDP Business Plan</u></p> <ul style="list-style-type: none"> Developed a cohesive strategy outlining immediate (short-term) and future (long-term) goals for SDPs. Ensures alignment with both current operational needs and longer-range objectives. <p><u>SDP Process Workflow Established</u></p> <ul style="list-style-type: none"> Piloted 3 SDP to confirm critical data sets and identify data stewards. Developing prioritization for 2025 and beyond.
Implement advanced data analytics platform that enables big data analysis and provides actionable insights. Foundational data from SAP, CC&B and GIS to be ingested with Level 2 (reusable) ontology into advanced data analytics platform by end of 2024.	<p>165 Objects Currently in Foundry:</p> <ul style="list-style-type: none"> 82 at Level 2 Public Class (available for use and reusable) 40 Level 2 Product Class (reusable) 43 data sets still in development 3 Products Deployed: <ul style="list-style-type: none"> GIS/SAP Reconciliation Dashboard GC Overlay GPOM Predictive ML Model Use Cases in Progress: <ul style="list-style-type: none"> Core Load Forecast Model <p>Value Stacking:</p> <ul style="list-style-type: none"> Allows us to bring in a dataset once but be able to utilize it for unlimited projects.
Develop and execute an annual portfolio of data quality improvement projects with supporting processes and do so in a way that is strategic, and risk informed.	<p><u>Value Improvements in 2023-2024</u></p> <ul style="list-style-type: none"> 129,000+ value improvements in SAP and/or GIS 70,000+ from manual remediation efforts 18,700+ assets linked in SAP to GIS 18,800+ auto-logic updates applied to service install dates <p><u>Transmission Redefinition (TransDef)</u></p> <ul style="list-style-type: none"> Partnered with Transmission teams to reclassify transmission lines to new designation as distribution supply lines (DSL) reducing future maintenance costs and allowing us to focus safety resources on higher pressure resources. <p><u>Pipeline Sales</u></p> <ul style="list-style-type: none"> Helped verify physical location and pipe specification attributes for pipeline sales, reducing future resource need

The Data Asset Management Plan describes these objectives in more detail.

3. RISK MANAGEMENT PROCESS

Transporting natural gas involves moving a flammable product under pressure. As a result, risk management is an important part of the natural gas business. PG&E's Enterprise and Operational Risk Management (EORM) team prioritizes risks based on how likely an incident is to occur and how severe it might be. Although the hazards and risks associated with natural gas are inherent, multiple layers of protection placed on top of one another safeguard against the failure of any one layer. Therefore, PG&E builds in multiple layers of protection into Company processes and plans.

To identify and address risk, PG&E follows a comprehensive EORM process. PG&E's EORM plans allow PG&E to manage assets and risks at an enterprise and operational level. PG&E defines "Enterprise Risk" as any risk that could potentially have a catastrophic impact to the company. PG&E's Board of Directors (BOD) provide oversight for Enterprise Risks through annual and ad-hoc risk reviews.

All operational risks are actively managed at the Functional Area level, with oversight provided by each Functional Area's Risk and Compliance Committee (RCC), which at a minimum, meet quarterly. In 2024, the Gas RCC met monthly (except in November). Each Functional Area's RCC is charged with oversight of risk management activities within the Functional Area including, but not limited to, reviewing risk assessments, approving risk response plans, and overseeing their implementation. By assessing and managing risks from PG&E's BOD and Gas RCC, PG&E can better manage the interdependencies and drive for consistency in risk management across the Company. In addition, the EORM team leverages several executive forums¹⁶ to ensure governance of the EORM and awareness of enterprise risks across the executive team. The annual governance plan supports BOD oversight of Enterprise Risks and provides oversight for the remainder of the Corporate Risk Register. Elements of the work plan include risk management program strategy, deep dives, and challenge sessions for specific top risks. This process increases Senior Management and BOD engagement in risk-informed decision-making by involving them in decisions as the process unfolds and gives individuals charged with managing specific assets line of sight to other risks across the enterprise.

Gas identifies, assesses, and ranks its risks in a Corporate Risk Register in accordance with EORM guidelines. The Gas risks within the Corporate Risk Register are governed by the Gas RCC. In 2024, PG&E continued the Executive Risk Command Center (ERCC) where Gas risks can be discussed with PG&E's senior leadership team. Risks, for each asset family identified during an annual risk refresh, are captured within the Asset Management Plans, mitigation programs, and work projects. As the result of the annual risk refresh process, Gas identified nine operational risks as part of the Corporate Risk Register for 2024, which have not changed since 2020. These risks are summarized in Table 12.

Table 12 – 2024 Gas Risks in the Corporate Risk Register	
Risk	Description of Risk and Risk Drivers
Loss of Containment on Gas Transmission Pipeline	<p>Failure of a gas transmission pipeline resulting in a loss of containment, with or without ignition, that can lead to significant impact on public safety, employee safety, contractor safety, property damages, financial losses, or the inability to deliver natural gas to customers. Failure of a gas transmission pipeline includes both pipeline leak and pipeline rupture.</p> <p>Drivers include: Equipment Failure, External/Internal Corrosion, Incorrect Operations, Manufacturing Defects, Stress Corrosion Cracking (SCC), Third Party/Mechanical Damage, Weather Related and Outside Force Threats, and Construction Threats.</p>
Loss of Containment on Gas Distribution Main or Service	<p>Failure of a gas distribution main or service resulting in a loss of containment, with or without ignition, that can lead to significant impact on public safety, employee safety, contractor safety, property damages, financial losses, or the inability to deliver natural gas to customers.</p> <p>Drivers include: Equipment Failure, Corrosion, Incorrect Operation, Excavation Damage, Material Failure of the Distribution Pipeline or Weld, Natural or Other Outside Force, and Cross Bore.</p>
Large OP Event Downstream of Gas Measurement & Control Facility	<p>Failure of a Gas M&C facility to perform its pressure control function resulting in a large OP event downstream that can lead to significant impact on public safety, employee safety, contractor safety, property damages, financial losses, and/or the inability to deliver natural gas to customers.</p> <p>Drivers include: Equipment Related and Incorrect Operations.</p>
Loss of Containment on Gas Customer Connected Equipment	<p>Failure of gas customer connected equipment resulting in a loss of containment, with or without ignition, that can lead to significant impact on public safety, employee safety, contractor safety, property damages, financial losses, or the inability to deliver natural gas to customers.</p> <p>Drivers include: Corrosion, Equipment Failure, Incorrect Operation, Material/Weld Fail, Natural or Other Outside Force.</p>
Loss of Containment at Natural Gas Storage Well or Reservoir	<p>Failure at a gas storage well or reservoir resulting in loss of containment, with or without an unplanned ignition, that can lead to significant impact on public safety, employee safety, contractor safety, property damages, financial losses, or the inability to deliver natural gas to customers.</p> <p>Drivers include: 1st/2nd/3rd Party Mechanical Damage, Incorrect Operations, Casing Wall Loss, Equipment Related, Manufacturing Related Defects, Weather Related/Outside Forces, and Welding/Fabrication Related.</p>
Loss of Containment at Gas M&C or C&P Facility	<p>Failure at a Gas M&C or C&P station resulting in a loss of containment that can lead to significant impact on public safety, employee safety, contractor safety, property damages, financial losses, or the inability to deliver natural gas to customers.</p> <p>Drivers include: Incorrect Operations, Welding/Fabrication Related, External/Internal Corrosion, SCC, Third-Party/Mechanical Damage, Weather Related/Outside Forces, Manufacturing Related Defects, and Equipment Related.</p>
Loss of Containment on CNG Station Equipment	<p>Failure of CNG station equipment during operations resulting in a loss of containment that can lead to significant impact on public safety, employee safety, contractor safety, property damages, financial losses, or the inability to deliver natural gas to customers.</p> <p>Drivers include: Third Party Damage, Equipment Related, Incorrect Operations, and Corrosion.</p>
Loss of Containment on LNG/CNG Portable Equipment	<p>Failure of LNG/CNG portable equipment during operations resulting in a loss of containment that can lead to significant impact on public safety, employee safety, contractor safety, property damages, financial losses, or the inability to deliver natural gas to customers.</p> <p>Drivers include: Equipment Related, Incorrect Operations, Corrosion.</p>
Insufficient Capacity to Meet Customer Demand	<p>Failure to maintain capacity on the system on high demand days.</p> <p>Drivers include: Pipeline Outage, Integrity Finding, Delayed/Deferred Capacity Projects, Inadequate Design, Design Deviation, and Unexpected System Restriction.</p>

Factors impacting more than one risk as a unique risk driver, or a component of an existing risk driver, are called Cross-Cutting Factors. As such, these factors can impact the likelihood or consequence of a risk event. The Cross-Cutting Factors are owned by a single functional area, with other impacted functional area(s) providing their input and subject matter expertise. These factors also follow the EORM process. Gas is impacted by several Cross-Cutting Factors owned by other functional areas as displayed in Table 13 below.

Table 13 – Enterprise Risk Management: Cross-Cutting Factors	
Cross-Cutting Factor	Description
Seismic	Seismic events can be a significant driver of failure in all functional area assets. Seismic events contribute to the likelihood of asset failure events and to the associated safety, reliability, and financial consequences of those events.
Cybersecurity Incident	A coordinated malicious attack purposefully targeting PG&E’s core business functions, resulting in loss of control of Company information or systems used for gas, electric, or business operations. The consequences of a cyber-attack are potentially catastrophic and could impact the safety and reliability of PG&E’s operational systems.
IT Asset Failure	Failure of IT systems or infrastructure, resulting in outages, system unavailability for mission critical assets impacting operations, or the ability to support public safety events.
Records and Information Management (RIM)	The risk of not having an effective RIM program may result in the failure to construct, operate, and maintain a safe system and may lead to property damage and/or loss of life.
Physical Attack	Incidents related to break-ins, vandalism, theft, fraud, assault, and threats against PG&E’s workforce and assets.
Emergency Preparedness and Response	Examines the drivers and consequences of inadequate planning or response to catastrophic emergencies. Inadequate emergency planning or response could have significant safety, reliability, and regulatory impacts.
Climate Change	Climate change presents ongoing and future risks to PG&E’s assets, operations, employees, customers, and the communities it serves.

Through external regulatory changes, PG&E continues to improve its risk management process and is an active participant in CPUC proceedings to advance a “risk-informed” process. In D.14-12-025, the CPUC adopted a risk-based decision-making framework into the Rate Case Plan for energy utilities. The framework includes the Safety Model Assessment Proceeding (S-MAP) and the Risk Assessment and Mitigation Phase (RAMP). S-MAP’s focus is on the models each utility uses to evaluate risk, with the intent of developing a single model for all utilities. RAMP’s focus is on risk mitigation, alternatives analysis, cost-benefit ratio, and a quantitative measure of expected risk reduction. D.22-12-027 ¹⁷ replaced the previous 2018 S-MAP Settlement Agreement with a modified Risk-Based Decision-Making Framework document that details the minimum requirements for an IOU’s RAMP report. A key change in the decision is a shift from a Multi-Attribute Value Function (MAVF) approach to a Cost-Benefit Approach (CBA) that includes standardized dollar valuations of safety, electric reliability, and gas reliability consequences from risk events. This change, along with other Risk-Based Decision-Making Framework refinements made in the decision, are intended to further increase transparency, participation, and accountability into how safety risks for energy utilities are managed, mitigated, and minimized. PG&E incorporated the new requirements from this Decision into the 2024 RAMP report

(A.24-05-008) filed in May 2024, which is the initial phase of PG&E's 2027 GRC. The key updates reflected in the 2024 RAMP report are the conversion to the CBA for risk measure and the transition from Risk Spend Efficiency (RSE) to Cost Benefit Ratio (CBR) calculations for mitigation analysis.

4. RECORDS AND INFORMATION MANAGEMENT

PG&E's Information & Records Governance (IRG) Program's focus is to reduce risk and increase trust in the company's information and records by providing clear governance, change management and process improvement, and effective technology and tools. This includes deployment of consistent, integrated processes that support records development associated with operational safety, regulatory compliance, and knowledge management. IRG works with all of PG&E to assess and inventory physical and electronic records and implement tools to manage the lifecycle of records. Examples of IRG accomplishments in partnership with the Gas functional area in 2024 include:

- Continued physical records remediation in field offices and provided local support during decommissioning and reconfiguration of PG&E sites.
- Validated 212 (38 percent) of 562 Gas records in the Enterprise Records Inventory and remediated 33 (58 percent) of 57 Gas records risks.
- Completed the migration of the Maximum Allowable Operating Pressure (MAOP)/Gas Operations Records Repository (GORR) in April 2024 and GEMT (Gas Event Management Tool) in December 2024 from Documentum on prem to Centralized Records Management (CRM) Cloud. 4,177,197 files were migrated for MAOP/GORR; 2,786 files were migrated for GEMT; Engineering Library Services (ELS) Gas was scheduled for migration in August 2024; however, due to a change in Gas's business process and subsequent changes to the requirements, the new target date for migration is Q2 2025.
- Destroyed 266 boxes of eligible inactive Gas records through the physical records disposition process.

IRG maintains comprehensive five-year roadmaps listing projects and initiatives in support of PG&E's mission and goals. Table 14 highlights key IRG projects and programs, with the drivers for work impacting the Gas functional area in 2025.

Table 14 – Gas Records and Information Management Roadmap Highlights	
Roadmap Projects & Programs	Roadmap Drivers
Documentum Repository Consolidation	<ul style="list-style-type: none"> • Documentum stability and support, improved functionality, and new features. • Simplified data structure to support functional implementation. • PG&E’s Records Information Management standards (GOV-7000 series).
IRG Program Compliance	<ul style="list-style-type: none"> • Information Governance Maturity Model & Framework • PG&E’s Records Information Management standards (GOV-7000 series) • California Privacy Rights Act (CPRA)
Third-Party Compliance Audits	
Information Governance Maturity Assessments	
Physical Records Disposition Execution	
Data Disposition	

5. MITIGATING THE RISK OF LOSS OF CONTAINMENT

PG&E takes a proactive approach to reduce the risk of loss of containment or the unintended release of natural gas. The mitigation programs and projects to address loss of containment vary significantly in size and scope, from actively promoting “Call Before You Dig” and installing pipeline markers over the assets as visual identifiers, to inspecting, testing, and replacing assets that may be deemed beyond their useful lives. PG&E remains focused on identifying the right work to protect the public from a loss of containment incident.

a) DAMAGE PREVENTION

Damage Prevention consists of multiple workgroups collaborating to educate excavation contractors and homeowners about safe excavation practices near underground infrastructure. Activities are reviewed annually. Described in the following sections, they include Public Awareness, Dig-in Reduction Team (DiRT), Locate and Mark, Standby Governance and Pipeline Patrol.

Damage Prevention includes marking the field location of underground facilities, as requested, through the Underground Service Alert (USA) system (commonly referred to as 811), USA ticket management, investigations associated with excavation damages (commonly referred to as dig-ins) and damage claims, monitoring excavations in proximity to critical infrastructure, and Public Awareness. The marking of underground utilities is governed by California Government Code Section 4216 et seq. and the process is driven by regulatory requirements and industry best practices. Table 15 describes other key Damage Prevention programs.

Table 15 – Damage Prevention Programs

811 Ambassador	<p>Every few minutes, a dig-in (utility strike) occurs in the U.S. Dig-ins can cause damage to people, property and the environment. Dig-in incidents pose a significant risk to public and personnel safety. These incidents are caused by negligence but can be prevented through education and enforcement.</p> <p>Having an 811 ticket and utility markings decrease dig-ins. 811 tickets are required by the California One Call Law. To date, over 50% of dig-ins do not have 811 tickets.</p> <p>In 2024, homeowners and commercial excavators were responsible for approximately 1,281 dig-ins to the PG&E’s underground gas pipeline system. Of those dig-ins, 53% of them had no 811 ticket, meaning the homeowner and/or contractor did not request a ticket for utility marking.</p> <p>In 2024, 92% of the 811 Ambassador calls had no 811 tickets; there were 320 811 Ambassador calls with No 811 tickets which is a potential dig-in savings of \$1,120,000 in distribution service for the company.</p> <p>The goal of the 811 Ambassador program is to empower all Company personnel to be advocates for damage prevention and public awareness of safe digging practices. It provides a way for PG&E employees to speak up when they observe an unsafe excavation with no delineation or markings.</p> <p>All PG&E employees are 811 Ambassadors. If an employee observes excavation without the required marks, they notify the Damage Prevention team through the 811 Ambassador Application on their PG&E phones. Once an unsafe digging report is made, a Dig-in Reduction Team (DiRT) member is notified to assess whether the excavation complies with California’s One Call Law. If the excavation is found to be in non-compliance with California’s One Call Law, the DiRT member takes several actions. They request all excavation be stopped, educate the excavator about the requirements of California’s One Call Law and the reason for the non-compliance, provide excavation safety materials, and instruct the excavator to correct the non-compliance activity prior to continuing any excavation.</p>
Damage Prevention Institute	<p>The Damage Prevention Institute (DPI) identifies best practices in excavation safety and sets safety criteria that second-party contractors are required to meet to be eligible to do work on behalf of the Utility. Having PG&E coworkers and PG&E contractors participate in DPI is one way that PG&E is helping to make communities safer.</p> <p>PG&E requires its contractors excavating on behalf of PG&E to maintain the DPI accreditation. PG&E acknowledges all contractors who practice safe excavation and monitors offenders who fail to demonstrate safe practices. Unsafe contractors are unable to perform work on behalf of PG&E.</p>
Procedures, Guidance and Training	<p>Providing clear and concise instruction around dig-in prevention measures like troubleshooting “difficult to locate” facilities, documenting field activities, and how to properly respond to a USA ticket.</p>
Human Performance Training	<p>In 2024, Damage Prevention provided human performance training to all Damage Prevention coworkers, equipping them with tools to help maintain positive control of work situations. Human performance tools slow things down to improve efficiency and avoid errors, events, and delays that accompany rework. When used thoughtfully and rigorously, human performance tools give the individual more time to think about the task at hand and add a layer of safety and situational awareness.</p>

Since 2014, PG&E has improved its “Shut-In the Gas Performance,” which tracks the company’s ability to quickly stop the flow of gas when the company is notified of potentially dangerous public safety events such as dig-ins, impacts to meters from vehicles, pipe ruptures, explosions, or material failures.

The Shut-In the Gas Performance specifically measures the number of minutes required for a qualified PG&E responder to arrive onsite and stop the flow of gas from PG&E’s distribution network. PG&E measures performance for damages impacting either gas service lines or meters/risers (Services) or damages impacting gas mains. Plan of Reorganization (D.20-05-053) called for the development of Safety and Operational Metrics to be used in conjunction with the adopted Enhanced Oversight and Enforcement Process to ensure progress is being made on key safety and operational metrics. In 2022, PG&E began reporting the median Shut-In the Gas Performance versus the average. In 2024, PG&E’s median Shut-In the Gas Performance was 34.2 minutes for services and 83.6 minutes for mains.

Table 16 – Shut-In The Gas Performance (median number of minutes)											
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Svcs.	38.0	40.0	37.0	36.0	37.2	36.8	36.7	36.3	36.8	35.3	34.2
Mains	97.0	87.0	87.0	89.0	76.1	76.0	79.2	79.1	82.1	80.0	83.6

Since 2014, PG&E has improved its overall make safe performance on events involving services by 10 percent and events involving mains by 14 percent.

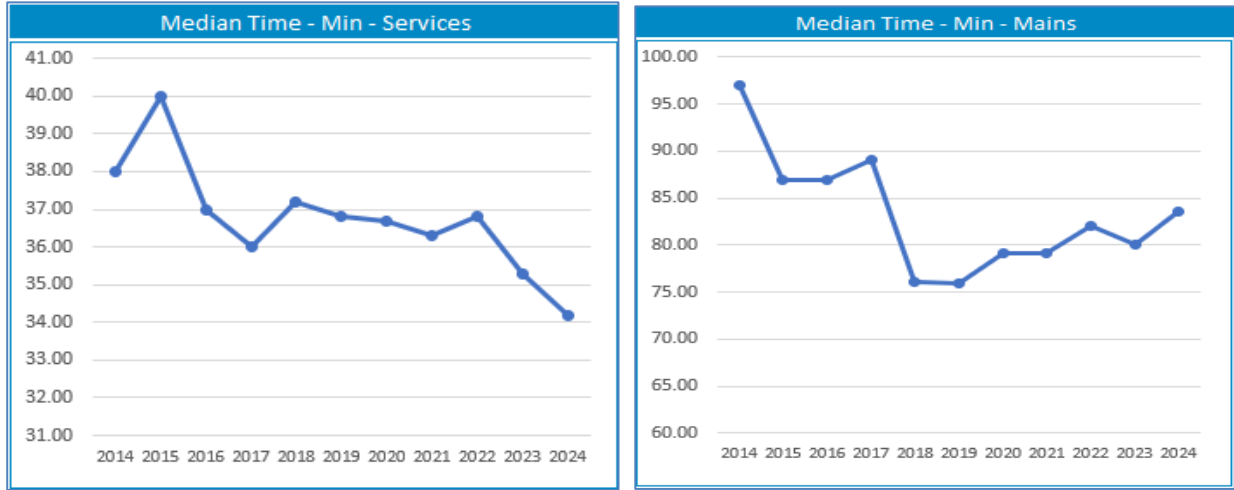


Figure 26 – Shut-In the Gas Performance

PG&E will continue its efforts to improve its Shut-In the Gas Performance. In addition to Shut-In the Gas performance, PG&E began measuring the Time to Resolve Hazardous conditions in 2022 as part of the Safety Operational Metrics. This metric measures the median response time to resolve a Grade 1 leak. PG&E’s median Time to Resolve Hazardous Condition performance was 132.9 minutes for 2024, which was a six percent improvement compared to the 2023 median time of 141.0 minutes.

i. PUBLIC AWARENESS

PG&E's Public Awareness Program conducts educational outreach activities for excavators, local public officials, emergency responders, and the public who live and work in PG&E's service territory. The

PG&E conducted 383 "811 Call Before You Dig" contractor workshops, reaching 5,151 attendees at 322 companies

program communicates safe excavation practices, required actions prior to excavating near underground pipelines, availability of pipeline location information, and other gas safety information through a variety of methods throughout the year including bill inserts, e-mails, brochures, mass media advertising and press releases.

PG&E communicates gas safety information multiple times each year, and in 2024, reached approximately 3 million paper bill customers and sent approximately 3 million e-mails to those customers who receive paperless billing. In addition to the bill inserts and e-mail campaigns, PG&E also sent a targeted direct mail and email to over 400,000 businesses and residences within 1,000 feet of a PG&E gas transmission pipeline, explaining their proximity to the transmission line, information about how to locate nearby gas pipelines, damage prevention measures (811), how to identify gas leaks, and what to do in the event of a gas leak. Additional targeted mailings were sent to school administrators, excavators, emergency responders, public officials, landscapers, sewer and plumbing companies, farmers, master meter accounts, and those who live or work near PG&E's storage and compressor facilities. Table 17 identifies highlights from the Public Awareness Program's 2024 activities.

Table 17 – 2024 Public Awareness Program Highlights

Executed 7 different social media campaigns targeting homeowners and contractors throughout PG&E's service territory, promoting the importance of calling 811 before digging. These campaigns resulted in over 6.1 million impressions.
Completed 13 bilingual 811 workshops, with 361 participants, in partnership with local Spanish language radio stations.
Continued to conduct targeted outreach in cities with a high number of dig-ins. The outreach included job site visits, 811 training for top damaging companies, and meeting with local leadership to discuss continued partnership for community safety. These targeted efforts resulted in over 7,234 field visits by Dig-in Reduction Team (DiRT) Investigators.

ii. DIG-IN REDUCTION TEAM

PG&E continues to push for improved performance in dig-in prevention by conducting factual investigations of excavation damage to PG&E's facilities, identifying process improvements to reduce damages, and actively pursuing cost recovery from excavators responsible for excavation damage. The DiRT is part of a proactive program that directly and positively affects public and employee safety by striving to reduce the number of excavation damage incidents through outreach, education, and incident

investigations. PG&E’s Dig-In Reduction programs are instrumental in managing the number of third-party gas dig-ins per USA tickets.

Table 18 below provides information on some dig-in prevention projects or process improvements.

Table 18 – Dig-In Reduction Team Programs Under Damage Prevention	
PG&E’s Commitment to Safety	Promoting Safety
DiRT Investigations	Deploys investigators to oversee and enhance PG&E’s ability to investigate dig-ins, patrol active excavations, and intervene when unsafe excavation activities are identified.
Pipeline Patrol	Identifies and intercepts surface threats to the transmission system via aerial and ground patrolling. Pipeline Patrol notifies DiRT as needed. DiRT will perform tasks listed above, as appropriate.
811 Workshops	Conduct safe digging workshops throughout the service territory.

iii. LOCATE AND MARK PROGRAM

The Locate and Mark Program is designed to mitigate the potential risk of damage to underground facilities by identifying and marking assets for potential excavators within a two working-day window. Federal pipeline safety regulations¹⁸ and California state law¹⁹ require that PG&E belong to, and share the cost of, operating the regional “one-call” notification system. Builders, contractors, and others planning to excavate, must use this system to notify underground facility owners, like PG&E, of their plans to excavate. PG&E then provides the excavators with information about the location of its underground facilities, including natural gas, electric, and fiber optic. Information is typically provided by having a PG&E locator visit the work site and place color-coded surface markings to show where underground pipes and wires are located. Because of its large service territory, PG&E belongs to two regional notification centers which share a common toll-free, 3-digit “811” telephone number. The California one-call systems are commonly referred to as USA. In 2024, PG&E received over 1.4 million USA ticket notifications, an increase from approximately 1.3 million USA ticket notifications in 2023.



Figure 27 – PG&E Coworker Marking a Gas Main and Service

PG&E has been, and continues to be, on a mission to improve its safety, ethics, and compliance culture and to foster a non-retaliatory environment where all employees can confidently and safely speak up. Leaders are consistently listening to and following up on issues raised by employees. PG&E is steadfastly committed to this important work.

iv. STANDBY GOVERNANCE

Standby Governance is part of PG&E’s internal damage prevention process to meet requirements of 49 CFR Part 196. Excavators working near PG&E high-priority or critical facilities are required to ensure

safe excavation practices per California Government Code § 4216 and to ensure that PG&E procedures are followed.

Standby is a free service provided to excavators. Standby inspectors serve as an objective representative of the utility on site to observe and protect PG&E facilities.

The standby role goes well beyond simply observing and ensuring safe excavation. It is important for a standby inspector to understand the complexities of each job to ensure the safety of the public, coworkers, and PG&E's assets. The standby inspector is familiar with general safe excavation practices, PG&E procedures, and how to apply them. Additionally, a standby inspector may need to intervene to stop work if they identify any unsafe activities that may jeopardize PG&E facilities, the crew, or the public.

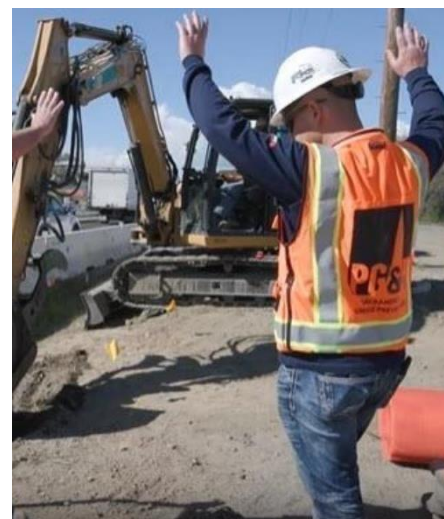


Figure 28 – Standby Crew at Work During Excavation

The Standby Governance Team supported 5,190 standby jobs in 2024. While each standby was conducted to protect PG&E's critical infrastructure, each standby also provided an opportunity to build relationships with excavators and to educate the excavator community on safe digging practices.

V. PIPELINE PATROL

Pipeline Patrol is a federally required activity that is essential to protect the integrity of PG&E gas transmission facilities from external threats. The activity helps to increase public safety. Patrol is performed both by air and ground by operator-qualified personnel who observe surface conditions on or near the rights of way of buried pipelines. Patrollers identify and respond to excavation activity (e.g., digging, ripping, boring, blasting, etc.) to notify excavators that they are digging in the vicinity of pipelines, and in the case of unauthorized digging, to educate and direct the use of the Underground Service Alert System.

Patrollers also report on surface conditions that could cause damage to company facilities, such as land movement, or could cause a change in class location, such as new construction, that may affect identification of High Consequence Areas.

PG&E primarily utilizes aerial methods to conduct patrols, with ground personnel dispatched to investigate observations made from the air. Special patrols may also be performed following natural disasters or other incidents as necessary. Aerial patrols provide real-time knowledge of on the ground activities, and their surveillance helps PG&E identify and stop unsafe excavation practices before dig-ins occur.



Figure 29 – Example of Land Movement



Figure 30 – Patrol Fixed Wing Aircraft



Figure 31 – Patrol Helicopter

PG&E patrols using a combination of fixed-wing aircraft and helicopters. In 2024, 45 percent of ground observations were related to excavation, 35 percent were related to new construction, and the remaining 20 percent were related to include right of way (ROW) encroachments, geohazards, and other miscellaneous observations requiring further ground evaluation.

b) PIPELINE MARKERS

Pipeline markers and indicators are important damage prevention tools used to indicate the approximate locations of pipelines along their routes to prevent “dig-ins” from occurring. The markers and indicators also advise the public of pipeline rights of way. Pipeline safety regulations require installation of markers because markers contribute to public awareness and damage prevention, which in-turn reduce the risk of loss of containment.

Pipeline Markers are signs on the surface above or near the natural gas pipelines located at frequent intervals along the pipeline right of way (ROW). The markers are typically found at various important points along the pipeline route including highway, railway, navigable waterway intersections, spans, angle points (bends), and other road crossings. These markers display the name of the operator and a telephone number where the operator can be reached in the event of an emergency. They are meant to be highly visible along the ROW and appear in different forms as the examples in Figure 33.



Figure 32 – Pipeline Marker



Figure 33 – Types of Pipeline Markers

In the event of an emergency or natural disaster, markers may be the only indication to the public and emergency responders that natural gas pipelines are in the area, subject to third-party removal or damage, despite being properly installed.

c) DISTRIBUTION PIPELINE REPLACEMENT

As shown in Table 19, PG&E has three pipeline replacement programs: Gas Pipeline Replacement Program (GPRP), Plastic Pipe Replacement Program, and Main Replacement Reliability Program. An important element of providing safe gas distribution service is replacing aging or at-risk assets. PG&E

uses relative risk to prioritize its pipeline replacement projects so that the sections of pipe with the highest risk are replaced first. The risk ranking for the Plastic Pipe Replacement Program is based on a methodology that considers leak history, pipe age, material type, ground temperature, diameter, operating pressure, and population proximity. The risk ranking for the GPRP is based on a methodology that considers pipe age, leak history, cathodic protection, coating, seismic activities, and population proximity. In addition to gas main replacement, the programs cover related service replacement and meter relocation work.

With enough natural gas distribution pipe traversing underneath the ground to wrap around the equator of the earth over three times, a holistic approach that incorporates the condition of these assets and the risks to these assets must be considered. Implementing asset risk reduction strategies over a significant timeframe (half a century or more) is crucial. Absent prudent asset management, a time may come where short-term and reactive needs result in an asset failure rate that exceeds the capacity of the skilled and qualified workforce and exceeds a reasonable cost burden that customers are willing to pay over a short period of time to replace or repair the failed assets. This could result in an increase in the number of significant incidents because of loss of containment on these aging assets.

Table 19 – Distribution Pipeline Replacement ^(a)		
Gas Pipeline Replacement Program (GPRP)	Plastic Pipe Replacement Program	Main Replacement Reliability Program
PG&E began the GPRP Program in 1985, which focused on the replacement of cast iron and pre-1941 steel pipe and has enabled PG&E to deactivate all known cast iron main (over 830 miles of pipe). GPRP is now focused on replacing pre-1941 steel pipe; however, PG&E may also include post-1940 higher risk steel projects based on risk modelling. In 2024, the GPRP Program replaced 21.3 miles of pipe.	Since PG&E began its Plastic Pipe Replacement Program in 2012, PG&E has replaced over 1,000 miles. In 2024, 109.5 miles of pre-1985 plastic pipe was replaced.	The Main Replacement Reliability Program focuses on the replacement of pipeline not covered by the GPRP or pre-1985 plastic pipe replacement programs. In 2024, PG&E replaced 13.9 miles of distribution pipe through this program.
(a) Pipe replacement and deactivation additionally occurs under leak repair, reliability, emergent work, and emergency response programs for which the mileage is not included.		

Figure 34 demonstrates the Company’s main replacement progress from 2012 to 2024.

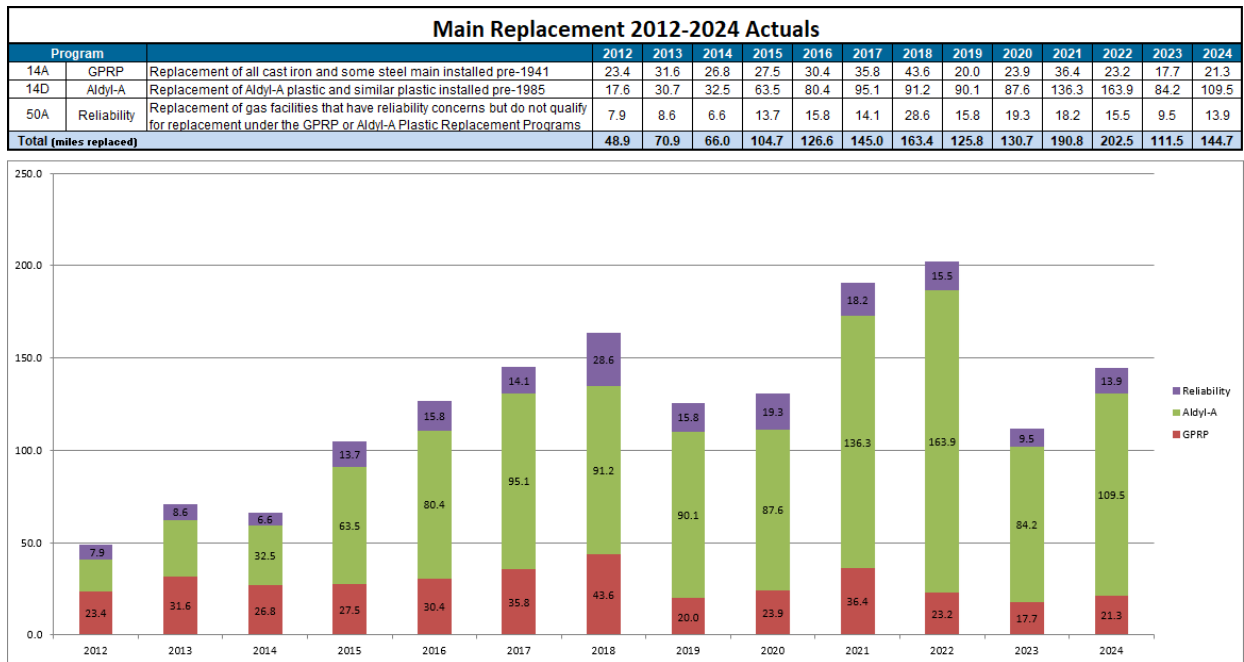


Figure 34 – Main Replacement Progress 2012-2024 (in miles)

d) CROSS-BORE MITIGATION

A cross-bore²⁰ is a gas main or service that has been installed unintentionally, using trenchless technology, through a wastewater or storm drain system. PG&E has an inspection program to identify and remediate gas cross-bores, and a public outreach program that provides safety information to PG&E customers, sewer districts, and public works agencies. In addition, PG&E has implemented a Gas Cross-Bore Inspection Program that uses video camera inspections to verify that no damage has occurred to sewer lines when using trenchless construction methods on new construction projects.



Figure 35 – Cross-Bore

The goal of PG&E's Cross-Bore Inspection Program is to identify cross-bores by completing inspections of potential conflict locations and repairing all occurrences as they are discovered. PG&E completed approximately 3,655 inspections in 2024 and found approximately 19 cross-bores.

e) STRENGTH TESTING

PG&E's transmission pipeline strength testing program is designed to allow PG&E to find pipeline defects that could subsequently cause a rupture or leak and then repair these defects or anomalies in the pipeline. Strength testing takes a pipeline out of service, clears it of gas, cleans it internally, then fills it (typically with water) to pressures consistent with and pursuant to 49 CFR, Part 192, Subpart J testing and documentation requirements, or Minimum Test Pressures for Existing Pipelines in High Consequence Areas (HCAs) to meet the Seven Year Integrity Assessment Interval per American Society of Mechanical Engineers (ASME) B31.8S-2004, Section 5, Table 3. This process also results in a test record that establishes the operating pressures the pipe can withstand. A secondary benefit of strength testing for PG&E is that the pipeline is typically upgraded to allow for navigation of cleaning tools (pigs), permitting PG&E to run In-Line-Inspection tools at later dates [see Section IV.5.g *In-Line Inspection*]. Thus, strength testing is one tool PG&E uses to maintain the margin of safety for the transmission pipeline and reduce the likelihood of future loss of containment incidents that could pose a risk to public safety.



Figure 36 – Strength Test in Progress

PG&E continues to strength test or replace untested transmission pipelines in compliance with Pub. Util. Code Section 958. In 2024, PG&E completed approximately 5.385 miles of strength testing (Table 20), of which 4.235 miles were re-tested for specific Integrity Management (IM) purposes. This work brings PG&E to a total of approximately 1,620 miles strength tested since 2011. The total miles of transmission pipe with test records are approximately 88 percent. The pipeline miles strength tested in 2024 were prioritized based on a risk informed mix of integrity management threats, and class location changes.

Table 20 – Transmission Pipeline Miles Strength Tested (miles)					
Strength Test	2011-2014	2015-2022	2023	2024	Total
PSEP	674	N/A	N/A	N/A	674
Subsequent Testing	0	917	24	5	946
Total	674	917	24	5	1,620

PG&E will continue to use strength testing to re-assess pipeline segments with integrity management threats for both manufacturing related defects and time dependent corrosion threats, and to comply with the MAOP reconfirmation requirements of 192.624.

f) VINTAGE PIPE REPLACEMENT

PG&E considers vintage construction and fabrication threats interacting with land movement as a key risk facing transmission pipe assets. The Vintage Pipe Replacement program helps mitigate this risk. While age alone is not an indicator of high risk, the original installation year reflects the manufacturing and construction practices of that era. PG&E defines “vintage pipe” to include pipe manufactured, constructed, or fabricated using certain historic practices that are no longer in use today. Vintage construction features generally do not pose a threat unless “activated” by specific conditions such as axial loading or ground movement and are best managed through replacement, thus eliminating vintage features. Historic fabrication and construction methods include mechanical/compression couplings and expansion joints, wrinkle bends, field miter bends and non-standard fittings (e.g., orange peel reducers, nonreinforced branch connections, sectioned fittings, homemade tees, bell-bell-chill rings, bell and spigot joints), oxy-acetylene welds, and excessive pups.

PG&E’s Vintage Pipe Replacement program vision is to address the risk of pipe segments containing vintage fabrication and construction threats that have a high likelihood of interacting with land movement within populated areas.²¹ PG&E will continue to work on addressing vintage pipe by prioritizing high-risk projects to be completed first. The program strategy has changed with the goal of eventually completing all Tier 1 projects. As of 2024 the program has replaced or retired 98.76 miles of “Tier 1” and “Tier 2” high-risk vintage fabrication and construction threats interacting with high likelihood of land movement.²²



Figure 37 – Vintage Pipe Replaced in San Mateo

Table 21 – Vintage Pipe Replacement Program			
	Miles Replaced	Additional Miles Addressed	Percentage of High Risk Mileage Addressed ^(a)
Pre-2015	20.2 miles	1.3 miles	22 percent
2015	5.9 miles	12.7 miles	40 percent
2016	6.7 miles	8.8 miles	56 percent
2017	3.5 miles	11.5 miles	71 percent
2018	20.6 miles	0 miles	91percent
2019	2.06 miles	0.75 miles	94 percent
2020	1.32 miles	0 miles	95 percent
2021	3.22 miles	0 miles	99 percent
2022	0.15 miles	0 miles	99 percent
2023	0.05 miles	0.01 miles	99 percent
2024	0 miles	0 miles	99 percent
Current Total Miles	98.76		99 percent
Program Target:	100 miles		100 percent

- (a) High risk mileage addressed includes retirements and mileage replaced in other pipe replacement programs from 2015-2023 that had an identified vintage threat.

Priority	Required Action	Description
TIER 1	Prioritize for replacement. Continue to operate and monitor until mitigation is complete.	Segments with Vintage Construction Features located in consequence areas and/or areas with high pipeline rupture risk with known occupancy impacts with ground movement threats. <ul style="list-style-type: none"> Vintage features, Consequence Area, ground movement threat. Vintage features, IOC>0, TIMP Risk ≥ 90%, ground movement threat.
TIER 2	Prioritize for replacement project to be executed after completion of Tier 1 projects following annual Vintage Pipe run. Continue to operate and monitor until mitigation is complete.	Segments with larger pipe diameter (≥ 6"), above average pipeline rupture risk, potential occupancy impacts, but located outside of consequence areas, and have ground movement threats. <ul style="list-style-type: none"> Vintage features, IOC>0, TIMP Risk ≥ 50% AND < 90%, Pipe diameter ≥ 6", ground movement threat.
TIER 3	Monitor for risk change using Geohazard and ILI data; continue to track in annual Vintage Pipe run. Continue to operate, monitor, and maintain in accordance with 49 CFR 192.	All other segments with vintage features that are not Tier 1 or Tier 2.

Figure 38 – Prioritization Tier Levels

PG&E continues to enhance risk methodology used to monitor and assess characteristics of vintage pipelines interacting with land movement by improving data quality and collection.

g) **IN-LINE INSPECTION**

PG&E's In-Line Inspection (ILI) Program uses technologically advanced inspection tools, often called "smart pigs," to assess the condition of transmission pipe so that action can be taken when issues are identified. Prior to running an ILI tool in a pipeline, a pipeline must be modified with installation of "launchers" and "receivers" to insert and remove the tool. These upgrades must also be performed to replace pipeline features

In-Line Inspection is the MOST RELIABLE pipeline integrity assessment tool currently available to natural gas pipeline operators to assess the internal and external condition of transmission line pipe.



Figure 39 – Electro Magnetic Acoustic Transducer (EMAT) Tool After an Inspection on Line 400

that would obstruct the passage of the tool. After the pipeline is upgraded to accommodate an ILI tool, cleaning and inspection "runs" are conducted to collect data about the pipe. This data is analyzed to identify pipeline anomalies that must be remediated through the Direct Examination and Repair process. In this process, the anomaly is exposed, examined, and repaired as necessary. The information from Direct Examination and Repair is used to generate mitigation activities to improve the long-term safety and reliability of the pipeline.

As of 2024, approximately 58 percent of the PG&E gas transmission system is "piggable," a term used to indicate that the pipeline is eligible for the use of in-line inspection tools. In 2024, PG&E inspected a total of 366.47 miles, of which 103.03 miles were assessed with ILI for the first time. Much of PG&E's pipeline was installed decades before ILI was invented. As of 2024, about 33 percent of the PG&E gas transmission system is not capable of supporting the running of traditional ILI tools, regardless of upgrades, because of design elements like low pressure (LP) and/or low flows, small diameter pipelines, tool availability, and short sections of pipeline or facility configurations, such as drips or blow downs.

In May 2024, PG&E performed a Selective Seam Weld Corrosion (SSWC) assessment with Intero's robotic Seam Sensor tool on 16" DFM 2408-05. This 1,086-foot inspection was the first of its kind for PG&E. It presents a new option for assessing 16" to 24" pipe SSWC threats without taking pipelines out of service, as would typically be required for Non-Traditional ILI assessment. PG&E is currently working with Intero to develop 10" and 12" seam sensors to be available in the future.

In 2024, PG&E completed a 10-year milestone project to fully inspect the 300-mile gas transmission backbone pipeline, Line 400, through in-line inspection. PG&E also initiated a training program at the Winters Gas Training Facility to train PG&E coworkers on the safe loading and unloading of cleaning and smart pigs, and the identification of abnormal operating conditions while running certain tools through pipelines. As part of the training program, PG&E has installed a 600-foot-long test loop made of 8-inch steel pipe with a launcher and receiver named the “Cory Dunne Memorial Test Loop” in honor of a fallen coworker. PG&E continues to invest in the Cory Dunne Memorial Test Loop at the Winters Gas Training Facility to ensure consistent training that accurately replicates in-field operations.



Figure 40 – 12" x 8" pig launcher for the training loop



Figure 41 – Pigging training loop piping under construction

h) CORROSION CONTROL

All of PG&E’s metallic assets are susceptible to corrosion—a natural, time-dependent process where metal degrades (corrodes) due to its interaction with the environment. Gas transmission, storage, and



Figure 42 – PG&E Employee Installing a Cathodic Protection Rectifier

distribution assets primarily composed of steel pipe carrying natural gas may experience degradation due to External Corrosion, Internal Corrosion, Stress Corrosion Cracking (SCC), Selective Seam Weld Corrosion (SSWC), Microbial Influenced Corrosion (MIC), or Hydrogen Induced Cracking (HIC). External Corrosion is degradation of the pipe due to interaction of the steel with the atmosphere, soil (buried piping), and/or water (submerged piping).

Internal Corrosion is degradation of the pipe due to interaction of the steel with unintended internal products such as water, solids, salts, etc. SCC is degradation of gas transmission pipe due to cracks induced from the combined influence of tensile stress²³ and a corrosive environment. The material degradation associated with all forms of corrosion

may reduce the integrity of steel assets and threaten PG&E's ability to safely and reliably transport natural gas. PG&E assesses the risk of External Corrosion, Internal Corrosion, and SCC independently because each requires a different form of mitigation.

As part of PHMSA regulations (Mega Rule Part 2) published in 2023, PG&E reviewed and revised standards, procedures, and training. This regulation was fully incorporated into a PG&E corrosion control program that focuses on transmission pipeline restoration and mitigation timelines and expands requirements for AC and DC interference programs, internal corrosion monitoring and mitigation, as well as coating inspections of new pipelines. PG&E also participated in an Association for Material Protection and Performance (AMPP) committee that published a guidance document to assist all operators with interpretation and implementation of corrosion control methodologies to align with the 2023 PHMSA regulation.

Given the risk profile associated with corrosion, PG&E has continued to hire highly qualified corrosion experts from around the country, as well as built an industry leading corrosion mechanic apprenticeship and line of progression, enhanced procedures where applicable, and incorporated systematic, risk-informed methodologies to its corrosion control approach. PG&E's efforts are resulting in more accurate data on which to make decisions related to the identification and mitigation of corrosion risks, improving the safety and reliability of PG&E's assets.

Industry best practice corrosion control strategies try to address at least one of the four basic parts of the corrosion cell - Anode, Cathode, Metallic Path, Electrolyte. The primary corrosion mitigation strategy at PG&E is to apply coating systems to the exterior portion of the pipeline system to attempt to isolate the metallic pipeline system from the electrolyte (soils/atmosphere/water). In the areas where coating system damage or imperfections exist, PG&E attempts to mitigate the anode and cathode portion of the corrosion cell by applying CP and moving the metallic pipeline system to the cathode of the electrochemical cell. In cases where needed and system operations allows, PG&E will also replace the metallic pipeline system with plastic to remove the metallic path from the corrosion cell. PG&E also monitors the level of CP on its assets and for conditions that may limit the ability to maintain adequate levels of CP on buried or submerged assets. PG&E has a robust remote monitoring system that allows near real time information of various CP equipment with remotely monitored data automatically being updated in the systems of record. Such conditions include contacted casings and electrical interference from electric transmission equipment, municipal rail systems, and other operators' corrosion control systems. Overall, corrosion control at PG&E consists of the programs included in Table 22.

Table 22 – Corrosion Control Programs	
Program	Program Description
Atmospheric Corrosion	Addresses deterioration of coating systems on assets designed for above ground use. Program includes field inspections and mitigation.
Casings	Identifies and remediates contacted cased crossings.
CP New, CP Replace, 850 Off	Designs, installs, and maintains CP systems to prevent corrosion. In addition, PG&E has implemented industry best practice CP criterion.
Close Interval Survey	Collects CP readings at approximate ten-foot intervals on transmission piping to verify levels of CP between established monitoring points.
Corrosion Investigations	Investigates the cause of corrosion control deficiencies and/or corrosion damage and recommends mitigating solutions.
Electrical Interference – AC	Evaluates and mitigates the threat of alternating current interference on gas piping systems.
Electrical Interference – DC	Evaluates and mitigates the threat of direct current interference on gas piping systems.
Enhanced CP Survey	Evaluates distribution piping CP area boundaries, monitoring locations, protection status, and updates documentation to ensure proper operation of CP systems.
Internal Corrosion	Evaluates and mitigates the threat of Internal Corrosion in gas pipelines.
Routine Maintenance	Routine monitoring of corrosion control system effectiveness, to include rectifier inspections and maintenance; pipe-to-soil monitoring, casing-to-soil monitoring, and atmospheric corrosion inspections.
Test Stations	Installs or replaces test stations in areas along the piping system where CP monitoring is required.

PG&E continues to advance in its goal of building a best-in-class corrosion control program by incorporating industry corrosion control standards, peer operator experience, third-party evaluations, and corrosion research into its standards and procedures. For 2024, PG&E continued to actively participate in corrosion research conducted by the Pipeline Research Council International (PRCI) and supported efforts to incorporate the results of such research into corrosion control regulations and standards through its participation in the Association for Material Protection and Performance (formerly National Association of Corrosion Engineers (NACE) International and the Society for Protective Pipe Coatings), the Interstate Natural Gas Association of America (INGAA), and the American Gas Association (AGA).

i) EARTHQUAKE FAULT CROSSINGS

The TIMP Fault Crossing Program addresses the specific threat of damage to a transmission pipeline from land movement strains caused by large earthquakes or seismic creep at known earthquake faults. Faults are discontinuities in the earth's surfaces that experience differential movement. Movements during earthquakes happen almost instantaneously and can range from inches to tens of feet.

The TIMP Fault Crossing Program is consistent with California law, which requires natural gas operators to prepare for and minimize damage to pipelines from earthquakes. PG&E performs system-wide studies to identify both anticipated geologic movement and pipeline mechanical properties to prioritize mitigations that will enhance the integrity of the pipe (Table 23) during a seismic event. Following each study, the mitigation work is then prioritized by considering the likelihood of failure, the probability that a seismic event will occur at the fault, and the consequences of failure, which includes the impact on the local population, PG&E system reliability, and the environment. Mitigation typically includes modified trench designs, trench adjustment, pipe replacement or realignment, or installation of automated isolation valves.

For a given year, crossings mitigated are identified in a prior year's study. In 2024, PG&E continued fault crossing studies for 28 sites for 2022 to 2023, which included geology reports, pipeline behavioral assessments, and summary reports.



Figure 43 – L-301A Fault Crossing Pipe Replacement

Table 23 – Earthquake Fault Crossing Program		
	Studies ^(a)	Crossings Mitigated ^(b)
Pre-2015	52	24
2015	65	18
2016	65	6
2017	22	7
2018	34	25
2019	12	12
2020	38	4
2021	8	2
2022	61	0
2023	61	6
2024	28	65

(a) Studies are conducted to determine if a pipeline is Fit-For-Earthquake (FFE) per current design through geological pipe assessments.

(b) Crossings are considered mitigated if pipe meets or is designed, retrofitted, or replaced to satisfy the FFE criteria.

The geology reports are complete, and the pipeline assessments are in progress; therefore, the fit-for-earthquake results for the 28 fault crossings are pending. At the end of 2024, there were 446 active fault crossings, with 175 being fit-for-earthquake and another 20 fit-for-earthquake at the 50th percentile, but not the 84th percentile. PG&E will continue to identify and evaluate new fault strands that could impact our transmission lines.

j) LEAK SURVEY

Pipeline safety regulations require PG&E to conduct routine Leak Survey (LS) on its gas system to find gas leaks. The frequency of LS depends on the type of facility, operating pressure, and class location of pipe.

In 2024, PG&E surveyed over 1.3 million gas distribution pipeline services, over 13,000 gas transmission pipeline miles, and performed daily leak surveys on 93 wells in compliance with CalGEM's emergency gas storage regulations. In addition, PG&E completed quarterly CARB LS at the 13 Gas Transmission Compressor/Storage Well Facilities, consisting of 177,302 individual components. PG&E also performed Daily LS of the three Storage Well facilities (Pleasant Creek, Los Medanos, and McDonald Island) as part of the COGR (CARB Oil and Gas Rule) for all 365 days of the calendar year.

PG&E conducts three-year leak surveys consistent with Best Practice 15 in the Leak Abatement OIR D.17-06-015. PG&E will continue its expanded use of the Advanced Mobile Leak Detection technology for its gas distribution system targeting emissions as the main focus, which along with the LS cycle, will continue to support PG&E in its ability to: (1) find and fix more leaks, thereby eliminating more potential hazards to the public; and (2) reduce greenhouse gas (GHG) emissions.

In addition, in 2024, PG&E continued the Super Emitter survey across the entire distribution service territory in response to the Leak Abatement OIR, Best Practice 21. PG&E defines a Super Emitter leak as one that emits more than six standard cubic feet per hour of methane. As a result, in 2024, PG&E completed the Super Emitter survey on over 99 percent of its gas distribution services. The purpose of this survey is for Advanced Mobile Leak Detection to identify and measure the leak flow rates of Super Emitters as they are found. The data then informs PG&E of the prevalence of these leaks and emission reduction that can be gained by repairing them quickly.

In 2024, PG&E continued its journey to a paperless LS process with implementation on track for 2025. To maintain employee and public safety, PG&E uses drones with Open Path Spectrometry (OPS) leak detection units to survey our submerged transmission pipelines. This prevents some temporary road closures and reduces the number of surveys completed in navigable waterways with boats.

PG&E's LS and Atmospheric Corrosion (AC) inspection Can't Get In (CGI) process continues to be successful, seeing the backlog of open inspection CGIs lessen year over year down to the lowest levels since the program began in 2018. 2024 began with a backlog of 787 AC CGIs and 752 LS CGIs, and ended with 393 and 933, respectively. During 2024, 44,040 AC CGIs and 35,483 LS CGIs were created. In 2024, PG&E continued to utilize the process designed in previous years and implemented several process improvement initiatives that increased the success rate of completing mandatory inspections. The process includes letters, postcards, text messages, emails, automated Interactive Voice Response phone calls, and personalized outbound calls from a team of Service Representatives in an attempt to gain

access to our facilities. The text messages and emails include custom portal links to a PG&E site that allows customers to schedule their appointments in minutes right from their computer or smartphone. Concurrently with the attempts to schedule appointments, Gas Compliance Representatives attempt to complete inspections via canvassing. PG&E continues to utilize electric service interruptions if customers do not provide access after previous unsuccessful attempts. Additional internal reports were created, and existing reports were improved, resulting in a higher level of visibility to the backlog of work. Improvement examples include updates to the letter process and appointment tracking. This led to an approximate 69 percent reduction in reported past due work in 2024 compared to 2022 and a 27 percent reduction compared to 2023.

Summaries of PG&E’s 2024 Leak Survey cycles for its distribution and transmission pipeline systems are shown in Table 24 below:

Table 24 – Leak Survey Cycles		
Facility Types ^(a)	Description	Survey Frequency
Distribution	Business districts and public assemblies	Annually
	Buried metallic facilities not under CP and not covered by an annual requirement	3 Years
	All copper facilities	3 Years
	Balance of underground distribution facilities	5 Years
Transmission	Department of Transportation (DOT) transmission all odorized transmission (including non-HCA pipe within a Class III and Class IV location)	Semi-Annually
Un-Odorized DOT Transmission and Un-Odorized DOT Gathering	Class I, Class II, and Class III	Semi-Annually
	Class IV	Quarterly
Gathering (odorized)	Class I, Class II, Class III, and Class IV	Annually
Transmission Stations	Class I, Class II, and Class III	Semi-Annually
Electric Substations	Any existing facilities within 150 feet of the structure	Annually (PG&E Best Practice)
(a) Utility Procedure TD-4125P-10, “Identifying Gas Transmission Assets.”		

k) LEAK REPAIR

Pipeline safety regulations and California state code require PG&E to repair certain leaks. In 2024, PG&E’s trained and operator-qualified personnel graded leaks based on the severity and location of the leak, the risk the leak presents to persons or property, and the likelihood that the leak will become more serious within a specified amount of time. PG&E’s leak grading practices for Grade 3 leaks exceed industry guidance, as set forth in GO 112-F. In addition to rechecking annually as required, PG&E repairs above-ground Grade 3 leaks on its distribution system within 36 months of discovery. In 2024, PG&E repaired 1,042 below-ground Grade 3 distribution leaks.

In 2024, PG&E used its continuous improvement approach to more efficiently bundle and schedule leak repairs. Identifying all the work required in an area at one time provides the opportunity to bundle



Figure 44 – PG&E's Maintenance & Construction Crew at Work

work locations and maximize use of resources. In 2024, PG&E repaired over 12,051 gradable leaks on the gas distribution and transmission system.

In 2024, PG&E also focused on improving Leak Repair effectiveness and efficiency by maintaining a level-loading approach, managing the average days open for gradable leaks rather than the inventory of Grade 2 leaks at the end of the year. PG&E set an internal target for average age of open Grade 2 leaks of less than 150 days and exceeded that goal with the average days open of 119 days for 2024.

PG&E continues to review and improve its standards, procedures, field processes, and equipment to further reduce the public safety risk of, and the emissions from gas leaks.

I) OVERPRESSURE ELIMINATION INITIATIVE

PG&E is required to design and maintain its facilities per the Code of Federal Regulations Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards. These regulations are enforced to prevent a pipeline from operating above its MAOP safety design limits set forth in 49 CFR 192.201. Exceedance of these limits is defined as an Over-Pressure (OP) event. Pipelines operating in this abnormal operating condition (AOC) present an operational risk to the safety of the public, employees, and contractors working on the facilities, including the potential to overstress a pipeline, which may lead to a loss of containment. A failure of this magnitude poses significant safety and operational impacts to any gas system as seen recently from the Merrimack Valley OP event. PG&E's approach has been to track all OP events for learning purposes including exceedances above the MAOP (small OP events) and those that violate the Code of Federal Regulations allowance of 10 percent (large OP events).

The Facility Integrity Management Program (FIMP) identified the two most common leading causes of OP events: human performance (HU) and equipment failure (EQ). Non-standardized station design and maintenance operations, inadequate processes, and lack of risk awareness were found to be the main contributing factors leading to OP events caused by HU. Initial HU OP reduction efforts targeted these factors by standardizing station designs; improving maintenance and construction operations; process improvements for lock-out/tag-out; and distribution of information around associated OP risk factors through training and communication initiatives. OP events due to equipment failure are

attributed to the equipment installed at pressure regulating / limiting facilities. Pilot-operated regulation equipment is particularly vulnerable to failure for two reasons: (1) gas quality issues, such as pipeline and construction debris, sulfur, and liquids, which can inhibit correct operation, and (2) the design and functionality is dependent on externally connected control lines. A loss to the control lines for each regulating device will cause both the regulator and the Over-Pressure Protection (OPP) to fail in an open position. This type of failure is referred to as a common failure mode.

Beginning in 2018, PG&E began eliminating the common failure mode at pilot-operated T&D facilities. The primary solution to mitigate the common mode of failure was the installation of a slam shut. This device is easily integrated onto existing regulation equipment and protects the downstream system by isolating it from an upstream system operating at higher pressures when activated. In 2020, the Protecting Our Infrastructure of Pipelines and Enhancing Safety Act was published, requiring the common failure modes on distribution pressure limiting facilities to be mitigated. In 2024, PG&E installed approximately 100 slam shuts on various types of distribution and transmission facilities. This brings the total to 57 percent of facilities with common failure modes mitigated by slam shut installation since 2018.

Additional methods of OP mitigation were adopted by PG&E at LP distribution facilities with the 2018 publication of the Safety Recommendation Report on the Merrimack Valley OP in Massachusetts by the National Transportation Safety Board (NTSB). These include the creation of a polygon in the GIS to establish a field personnel standby requirement when construction is within 100 feet of a low-pressure station and a LP sense line relocation program created to protect against construction or third-party damages. The latter requiring buried sense lines to be moved into the regulator or monitor vaults, which is consistent with industry standards.

In 2019, the first annual version of the Long-Term Overpressure Elimination Roadmap was published. This comprehensive document describes in detail past, current, and proposed future activities related to the OP elimination initiatives. On-going work continues to explore additional controls and mitigations for OP prevention from equipment-related causes, construction activities, third-party damage, and human performance issues during maintenance. The FIMP Team remains dedicated to sharing the pathway to success of the Long-Term Overpressure Elimination program in the annual publication of the Gas Safety Plan.

In 2024, PG&E recorded a total of 20 OP events, four of which were large OP events. This is the lowest number of large OP events since tracking began in 2011 (Figure 45). Key points of emphasis that continue driving down the number of overpressure events going forward include: (1) the continuation of our strategy of installing secondary overpressure protection devices on pilot-operated regulation equipment; (2) the continued emphasis on human performance development and training; and (3)

continuing to add additional rigor around the clearance development and execution process. PG&E continues to review operations and look for opportunities to perform work to further limit potential OP events. Each activity builds on the goal to eliminate large OP events, thereby contributing to system safety. PG&E did not receive funding for any of the OPE mitigation programs in our 2023 GRC Final Decision, D.23-11-069, and we anticipate that our rate of progress for many of these programs may slow significantly in the upcoming years.

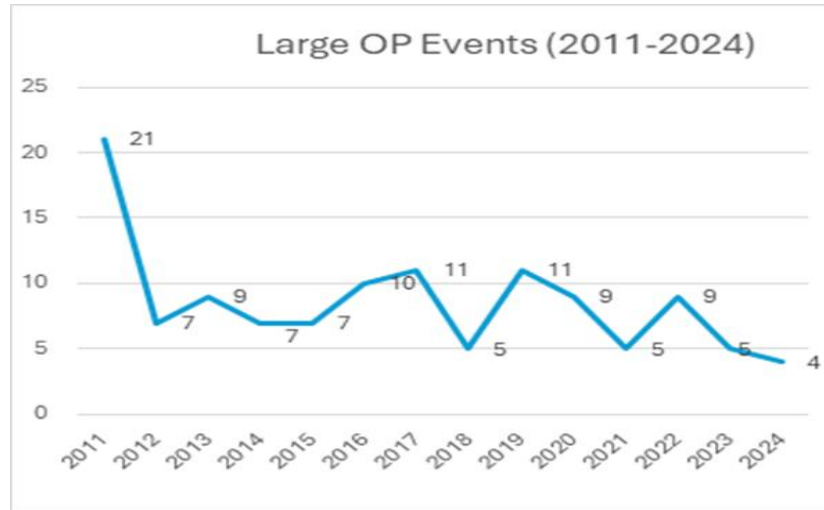


Figure 45 – Large Overpressure Events (2011 – 2024)

m) COMMUNITY PIPELINE SAFETY INITIATIVE

PG&E's Community Pipeline Safety Initiative (CPSI) is a shareholder-funded program that focuses on enhancing the safety of the gas transmission pipeline by addressing items located too close to the pipe and pose a safety and/or emergency access concern. When items such as structures and trees are located too close to the pipeline, they can delay critical access for safety crews and potentially cause damage to the pipe.

PG&E has addressed more than 99.9 percent of the identified safety concerns. This includes completing 1,549.85 vegetation miles and all 359.96 structure miles. The remaining work is located in Palo Alto, San Jose District 6, and Santa Cruz County and will be addressed as part of PG&E's maintenance work. The cross-functional team is actively working with these jurisdictions and private property owners to complete all remaining work.

CPSI PROGRAM METRICS (2013-2024)					
STRUCTURE MILES 100% ADDRESSED			VEGETATION MILES >99% ADDRESSED		
YEAR	COMPLETE	PERCENT	YEAR	COMPLETE	PERCENT
2013	5.00	1%	2013	115.00	7%
2014	110.00	32%	2014	146.00	17%
2015	93.00	58%	2015	380.00	41%
2016	114.00	89%	2016	540.00	76%
2017	30.00	98%	2017	258.00	93%
2018	7.60	99%	2018	86.60	98%
2019	0.25	99%	2019	18.03	99%
2020	0.00	99%	2020	0.26	99%
2021	0.0191	99%	2021	0.91	99%
2022	0.00	99%	2022	1.81	99%
2023	0.066	99%	2023	0.00	99%
2024	0.028	100%	2024	3.24	99%
TOTAL	359.96	100%	TOTAL	1,549.85	99%

Figure 46 – Structure and Vegetation Miles Addressed (2013 – 2024)

n) GAS TRANSMISSION VEGETATION MANAGEMENT

As part of PG&E's Gas Transmission Vegetation Management program, we regularly monitor the area above and around the gas transmission pipelines across our service area to make sure specific vegetation and structures are a safe distance from transmission pipelines. PG&E launched this maintenance program following the Community Pipeline Safety Initiative to help keep the gas transmission right-of-way safe and clear. This includes reviewing trees previously left in place as part of the Community Pipeline Safety Initiative to determine if any site conditions have changed, such as soil stability, tree health and more.

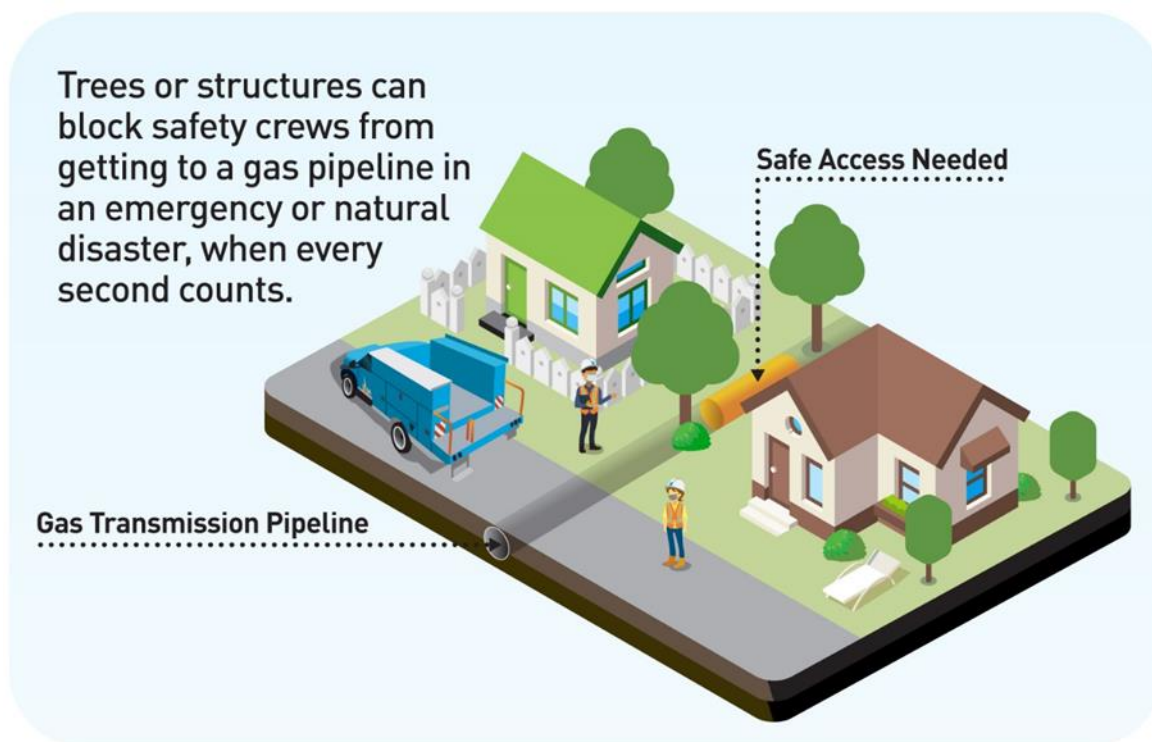


Figure 47 – Example of a Trees/Brush Inspection Site

PG&E inspected approximately 1,230 miles of gas transmission pipeline in 2024 and addressed approximately 90 trees. Each year, PG&E reviews any trees near a transmission pipeline and prioritizes removals based on the safety risk identified. In addition, the Gas Transmission Vegetation Management program now reviews and addresses trees requested by other PG&E teams.

Before removing a tree that poses a safety concern, PG&E shares information with the property owner and answers their questions. PG&E also works with property owners to remove or relocate any structures identified as a safety concern, though this work is performed at the property owner's expense.

We know we cannot do this work alone, which is why PG&E also shares educational information on the importance of keeping the area above the pipeline safe and clear with communities and customers through mailers, community meetings and presentations, email communications, social media posts and more. Through these efforts, we are spreading awareness about safe plantings near utility infrastructure, leading to fewer trees being planted too close to transmission pipelines.

6. MITIGATING THE RISK OF LOSS OF SUPPLY

The risk of loss of gas supply poses significant public health and safety risks. Customers depend on their gas service for various energy needs including space heating, water heating, and cooking. In very cold weather, loss of space heating can be life-threatening and increases the risk for customers to use unsafe heating alternatives.²⁴ Loss of gas service can also lead to extinguished gas pilots and the

subsequent potential for non-combusted gas to enter affected buildings. In some scenarios, insufficient local pipeline capacity could result in loss of gas service to electric generation customers, which also introduces health and safety concerns. PG&E mitigates these risks by designing and operating its gas system to maintain adequate system capacity to supply forecasted demand.

In 2024, PG&E transported and delivered about 924 billion cubic feet of gas, a 9.1 percent decrease from the previous year.²⁵ To meet this demand, PG&E works year-round to assure system reliability through its management of system pressure, capacity, monitoring, and controls. The following sections discuss PG&E’s programs designed to mitigate the risk of losing gas supply.

a) **SYSTEM CAPACITY DESIGN CRITERIA**

PG&E’s gas systems are designed to meet all expected core demands (residential and small commercial customers) with noncore demand (such as large commercial or industrial customers) assumed fully curtailed at a design temperature that is the coldest temperature that may be exceeded once in every 90 years, on average (referred to as an Abnormal Peak Day, or APD). PG&E’s gas systems are also designed to meet all expected core and noncore demand at the coldest temperature that may be exceeded once in every two years, on average (referred to as a Cold Winter Day, or CWD).

In addition to noncore curtailments, temporary manual operations can be implemented to increase available capacity on the gas system or shift flow to alleviate system constraints [see Section IV.2.c *Transmission Pipe* for Strategic Objective on meeting system capacity]. These operations are assumed to be in place when designing the system for capacity.

Table 25 – PG&E Gas System Capacity Design Criteria	
Design Temperature Average Recurrence Interval	Design Condition
One in 90 years, APD	Meet all expected core customer demand, with noncore demand assumed fully curtailed.
One in 2 years, CWD	Meet all expected core and noncore customer demand.

PG&E develops its capacity plans with the use of hydraulic simulation software to model its gas system. These models calculate expected pressures and flows throughout the system based on historical SmartMeter customer demand data trends. An annual model maintenance process ensures hydraulic models accurately reflect the physical and operational characteristics of the gas system. The process includes calibration and documentation components. Hydraulic models are accompanied by numerous analytical tools, processes, standards, internal and external data, and training and development to ensure personnel are properly equipped to implement the necessary measures for mitigating the risk of loss of gas supply.

b) INVENTORY MANAGEMENT

Inventory management is a critical service provided by Gas Operations to deliver safe and reliable gas to its customers. PG&E's pipeline inventory constantly changes due to the dynamic inflows and outflows of the system (Figure 48), so it is critical to keep inventory in balance. If inventory is too high, maximum pressures in the pipeline are approached and compressors can shut down. If inventory is too low, there is inadequate pressure to serve PG&E's customers.

Gas Operations utilizes several operational tools to maintain balance in pipeline system inventory. PG&E's Gas Storage provides withdrawal and injection services for Pipeline Balancing and Reserve Capacity. Operational Flow Orders and Emergency Flow Orders are gas marketing tools to financially incentivize customers to help keep the system in balance. In 2024, there were a total of 82 Operational Flow Orders (72 for high inventory, and 10 for low inventory) called to mitigate forecasted low and high inventory issues.²⁶

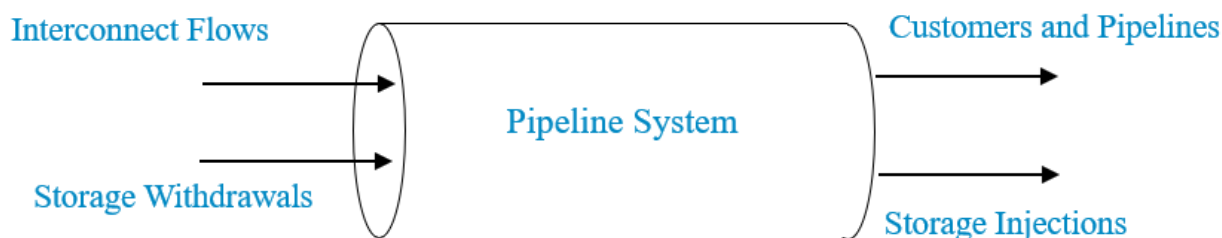


Figure 48 – Example of Pipeline System Inflows and Outflows

c) WINTER OPERATIONS

In addition to designing and building its gas system to meet forecast customer demand, PG&E prepares a detailed operation and curtailment plan prior to each winter. These plans outline the planned response to forecast cold weather conditions to ensure the system maintains reliable gas service and follows its capacity design standards. PG&E continuously monitors the pressure of its system and responds to any SCADA alarms that activate if system pressures fall to a level that is lower than what is expected [see Section IV.7.a *Gas System Operations and Control*]. Winter operating plans and long-term capacity plans are adjusted, as needed, based on actual system performance.

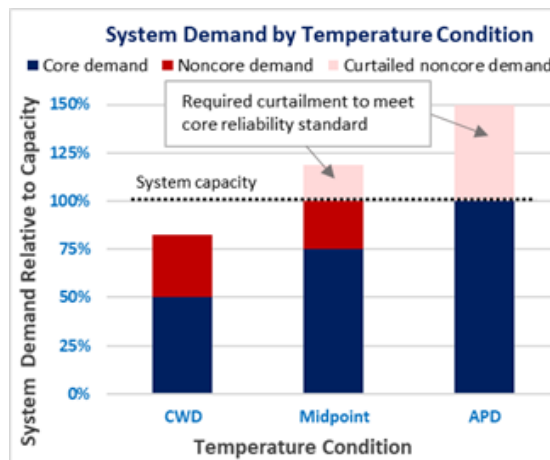


Figure 49 – Conceptual Representation of a Non-core Curtailment Plan

d) OPERATIONS FOR FACILITATING SAFETY WORK

In some cases, the measures necessary to mitigate risk require temporarily changing the configuration of the gas system. For example, conducting a strength test requires taking a pipeline out of service. If pipeline anomalies are discovered through in-line inspection, the operating pressure of a system may need to be reduced until the anomalies can be further examined and repaired.

Safety work is scheduled such that adequate supply to customers is maintained. If adequate supply is unavailable, other techniques are utilized such as portable LNG, CNG, or compression. If necessary, planned service outages may need to occur, but are coordinated with customers. Any operations necessary to maintain sufficient capacity in the system are documented in a clearance [see Section IV.7.b *Clearance Operations*]. Clearances also include SCADA alarm adjustments and pressure gauge monitoring requirements to ensure safe operation of the gas system.

Guidelines for traditional in-line inspections that require the consideration of contingency plans to mitigate the risk of supply interruptions in the low probability event that an inspection tool becomes stuck in the line and restricts supply to the downstream system are in place. If the risk cannot be fully mitigated, an emergency curtailment plan is developed and undergoes leadership approval in advance of the inspection.

7. MITIGATING THE RISK OF INADEQUATE RESPONSE AND RECOVERY

In addition to the programs that PG&E has in place to mitigate the risk of loss of containment and the risk of loss of supply, PG&E is prepared to respond to, and to recover from, incidents. PG&E's policies and procedures provide effective system controls for both equipment and personnel to limit damage from accidents, explosions, fires, and dangerous conditions. It is PG&E's policy to:

- Plan for natural and human-caused emergencies such as fires, floods, storms, earthquakes, cyber disruptions, and terrorist incidents;
- Respond rapidly and effectively, consistent with the National Incident Management System and State Emergency Management System principles, including the use of the Incident Command System, to protect the public and to restore essential utility service following such emergencies;
- Help alleviate emergency related hardships; and
- Assist communities to return to normal activity.

All PG&E emergency planning and response activities are governed by the following priorities:

- Protect the health and welfare of the public, PG&E responders, and others;
- Protect the property of the public, PG&E, and others;
- Restore gas and electric service and power generation;

- Restore critical business functions and move towards business as usual; and,
- Inform customers, governmental agencies and representatives, the news media, and other constituencies.

PG&E uses the structure of the Incident Command System to complete key steps in responding to incidents. The key incident response objectives in Table 26 represent a typical process flow through the cycle of an incident.

Table 26 – Key Incident Response Objectives	
Objective	Description
Pre-incident Readiness	Proactive actions taken to prepare for a potential incident.
Make Safe and 9-1-1 Standby	Make area safe for public, employees, and responders.
Establish Command	Gather information about emergency, assess the situation in coordination with law enforcement and fire agencies, PG&E GCC, assign resources and establish the Incident Command Post (ICP).
Notify	Communicate to/notify the appropriate PG&E personnel, regulatory agencies, public agencies, city, and county emergency operations, GCC, customers and media.
Assess Damage	Identify potential public and PG&E infrastructure threats or at risk and determine need for isolation strategies.
Restore	Prioritize restoration efforts and restore gas service.
Demobilization	Deactivate ICP and/or Emergency Centers and return to business as usual.

The following sections discuss programs in place to mitigate threats to enable PG&E to respond in a timely manner.

a) **GAS SYSTEM OPERATIONS AND CONTROL**

PG&E's Gas Control Center (GCC) monitors and controls the flow of gas across PG&E's system 24 hours a day, 365 days per year, so that natural gas is received and delivered safely and reliably to customers. The GCC provides near instantaneous visibility on the gas system. This allows PG&E to prevent, quickly react to, and mitigate issues that may pose a safety risk to the public and PG&E employees.



Figure 50 – PG&E's Gas Control Center Features a 90 Foot-Long Video Wall with Current Operational Information to Augment the Gas SCADA System

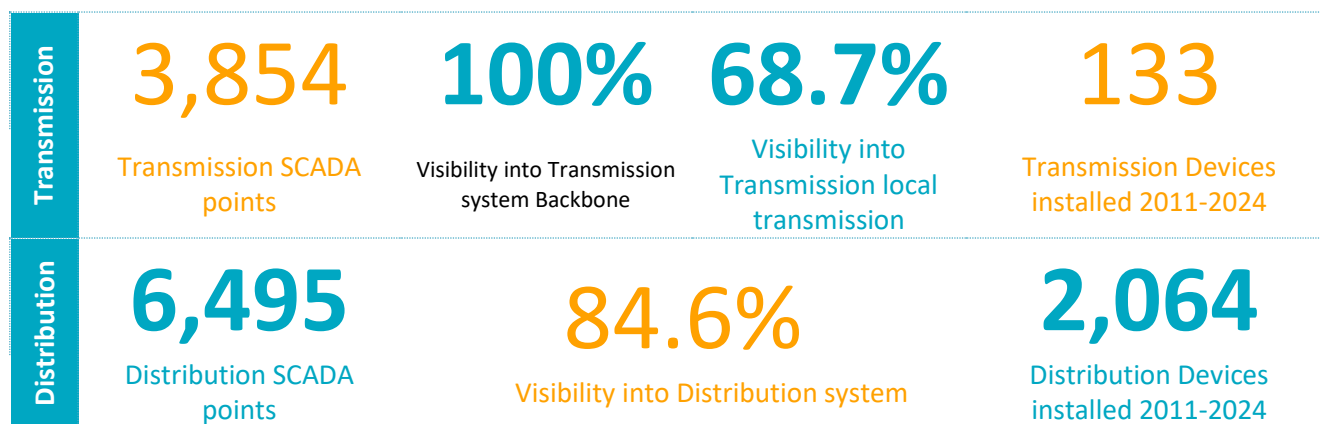


Figure 51 – PG&E’s Progress in Enhancing System Visibility Through SCADA

PG&E’s Gas Transmission Control Center, Gas Distribution Control Center, and Gas Dispatch functions are co-located in a single facility. The co-location of these three functions enables the company to better communicate, share information, and monitor the systems to provide superior emergency response coordination. This visibility, monitoring, control, and response capability is important to PG&E’s Gas Safety Excellence vision. For the Gas Control Center to be effective, a key control need is situational awareness—the ability to identify, process, and comprehend the critical elements of information about what is happening. Billions of data records, composed of a mix of near real-time gas system operational data and a variety of geospatial, time dependent, and historical information that relates to the gas system provide critical information to Gas Control to aid in decision-making. This data interacts with alarms to focus the operators’ attention on abnormal situations. They are also bundled to display clear information to operators so they can quickly assess a developing issue.

b) CLEARANCE OPERATIONS

The Gas Clearances and Lock Out Tag Out (LOTO) program is required by CalOSHA and provides for safe work, protects equipment, maintains configuration control, and allows PG&E to achieve public safety. Gas Clearances document the sequence of operations that must be followed to ensure equipment clearing is done in a methodical, well planned, and controlled way. Clearances are established for all T&D planned and unplanned work that impact gas flows, pressures, remote monitoring and control, or gas system quality and control.

The Clearance and LOTO Program is one of the most important processes within Gas and is also a PG&E Key to Life. When followed, the Clearance and LOTO process creates an essential control to isolate people from high energy and thereby preventing Serious Injuries and Fatalities.

In the second quarter of 2024, a centralized Gas Clearance Operations Department was established within Gas System Operations & Maintenance (GSOM). The purpose was to bring together T&D Clearance Writing, Clearance Independent Technical Reviewing, Approving, and Execution functions

under a single process owner. As a centralized function, topics such as key performance indicators, process improvements, and process adherence are more closely aligned and prioritized.

The Clearance Program within GSOM has undergone year-over-year increases in the number and complexity of system Clearances. In 2024 alone, more than 1,800 T&D Clearances were written by the centralized Clearance Writing team and more than 7,000 Clearances and Clearance templates were approved by the centralized Gas Control Clearance Approval team.

2024	Transmission & Distribution Clearances Written	Transmission & Distribution Clearances and Templates Approved	Total Complex Transmission Clearances Executed by TPCO Team
	1,804	7,000+	372

Figure 52 – Clearance Operations

Following the July 2024 Kettleman Ignition Event, Corrective Actions are underway throughout 2025 to improve certain aspects of the Clearance Program such as training, roles and responsibilities, and program audits. Benchmarking, internal and external to PG&E, is also a key focus for the Clearance Program alongside the Corrective Actions. These and other continuous improvement actions are in place to continue building upon and maturing PG&E's Gas Clearance and LOTO Program in 2025.

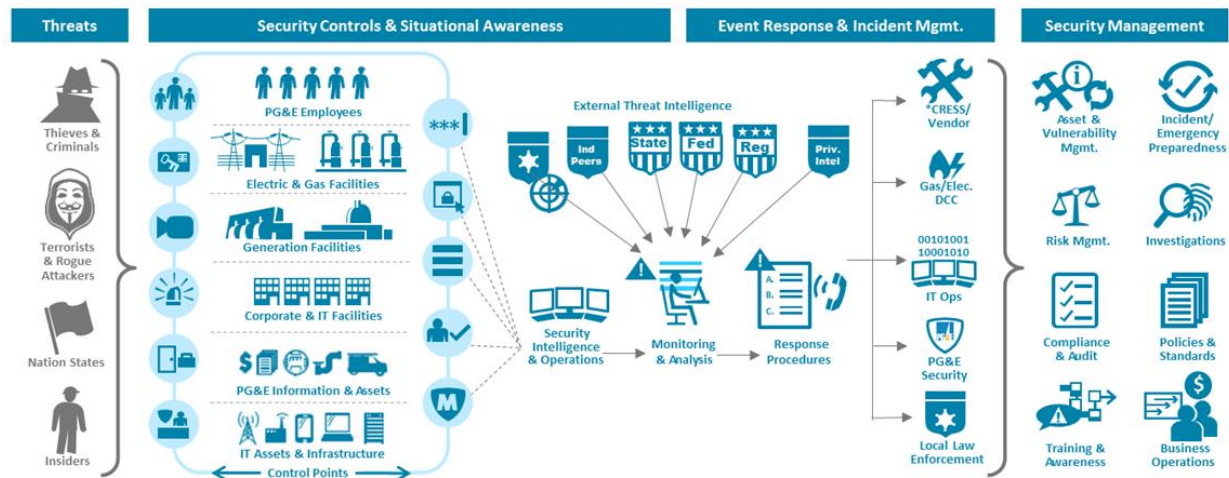
c) SECURITY

PG&E's commitment to security directly contributes to our mission to deliver safe, reliable, affordable, and clean energy. PG&E's Security Program, which includes both cyber and physical security, effectively manages security risks and proactively adapts to evolving threats and changing business needs. The Security program is based on industry framework, best practices, and is designed to enable risk-informed decision-making necessary to support PG&E's mission.

Security takes a multi-layered approach to implementing our strategies to protect PG&E's customers, assets, people, facilities, and data from the ever-changing security threat landscape.

The Security program's strategy includes the following:

1. Identifying threats, risks, and defining mitigating strategies for them.
2. Building, deploying, and operating effective security technologies and processes.
3. Proactively monitoring, testing, and responding to security threats.
4. Collaborating with public, private, local, state, and federal entities to proactively drive improvements to regulations, policies, standards, and best practices.



Note: CRESS is Corporate Real Estate Strategy and Service

Figure 53 – PG&E Unified Cyber/Physical Security Program Effectively Manages Risk and Proactively Adapts to Evolving Threats and Changing Business Needs

Threat Intelligence: PG&E’s Security Fusion Center team tracks emerging and evolving activity that may pose a threat to the well-being of PG&E’s employees, customers, and business enterprise. The Fusion Center provides a centralized, converged approach to correlate and analyze information from varied internal and external sources, both physical and cyber, into a coordinated view and response. This approach aims to deliver a timely and accurate characterization of any incidents and thereby enable a coordinated response. Identified threats are mitigated at the appropriate levels.

PG&E’s Threat Intelligence team tracks evolving cybersecurity and physical security threats. Trends include a growing prevalence and sophistication of ransomware, destructive malware, and the growth of file-less malware on endpoints. Additionally, supply chain and critical infrastructure threats continue to grow in sophistication and frequency.

Security Awareness & Training: PG&E’s Security Awareness and Training Program is an enterprise security strategy focused on maintaining and strengthening the security culture. Regular security communications and trainings educate employees on how to keep the Company’s people, assets, and information secure. The PG&E Security Awareness and Training Program communicates and trains on security standards, best practices, tips, and risks. This program helps employees understand the importance of protecting the people, information, and assets at PG&E. The Security Awareness and Training Program establishes employee engagement themes based on security assessments and threat intelligence information to reduce security risk.



Figure 54 – Examples of Active PG&E Government Partners

Security Controls: PG&E’s natural gas operations incorporate significant risk management activities, including those that address cyber and physical attack threats. PG&E’s Cybersecurity organization advises Gas on cybersecurity risk mitigation activities to protect information and operational technology, with a focus on control systems. PG&E’s gas control systems are critical assets, and therefore require higher levels of protection through security controls and mitigation improvements, which are reviewed and updated on an annual basis. PG&E has been working closely with the U.S. Department of Homeland Security’s (DHS) Transportation Security Administration (TSA) in response to the TSA’s evolving Security Directives (SD), initially issued in 2021, which require assessment and implementation of security measures. PG&E’s Enterprise TSA Compliance has been leading and working cross functionally regarding the Company’s response to TSA’s SD’s, which was a new regulation requirement after the 2021 Colonial Pipeline ransomware attack. Since then, PG&E has implemented numerous security program enhancements to ensure and advance compliance with the TSA SD’s, including the deployment of sensors at critical Gas sites to enhance cybersecurity monitoring, migration of Gas assets to a dedicated Gas Domain Network, enhancement of controls for patching and access management, and strengthening our incident response playbook. Additionally, PG&E has received continuous approval from the TSA of its annual Cybersecurity Assessment Plan, which is PG&E’s cybersecurity plan to execute and assesses its effectiveness in meeting the TSA SD’s.

PG&E’s Corporate Security Department successfully deployed AI-informed analytic video camera packages at 10 key sites, providing real-time monitoring and enabling our third-party monitoring company to challenge intruders through “voice down” capabilities and notify first responders. This initiative has led to multiple successful mitigations, effectively preventing further damage and loss. The Corporate Security organization advises Gas on physical security risk mitigation and mitigation activities to physically protect operational assets and cyber systems/assets identified by the functional area from attacks through physical means. Corporate Security provides protection for all physical sites, while providing focused talent and processes for key critical infrastructure sites identified by the functional unit or DHS TSA Critical.

In 2024, PG&E was audited under both the TSA Critical Facility Security Review (CFSR) program and the Corporate Security Review (CSR) program. The TSA CFSR and CSR assesses the extent to which the

critical pipeline systems have implemented guidance outlined in the Pipeline Security Guidelines (PSG). Specifically, the programs review a pipeline owner's physical security measures, corporate policies, and procedures. PG&E scored in the 90th percentile in the CSR when compared to utilities across the country. PG&E's security program was found to be well developed and well positioned as a leader with its peers in the incorporation of the PSG RPs in its security program.

Security Assessments & Exercises: Given continual security threats and the evolving sophistication of adversary attacks, PG&E's Security Program is regularly assessed to validate strategic direction and improve alignment with current industry best practices. Assessments and improvements can occur through participation in security events, such as site-specific tabletop exercises, regular member participation with the AGA, the Downstream Natural Gas Information Sharing and Analysis Center, and TSA briefings and exercises. PG&E has worked closely with TSA in aligning with the SD Pipeline-2021-02D. It is through the results of security exercises that PG&E is better able to identify and plan control improvements that strengthen Gas Safety. The Security team conducted a security architecture review to identify potential security gaps and validate existing controls. In December 2024, PG&E executed the largest ever full-scale cyber and physical exercise simulating an attack on our critical infrastructure, facilities, data, and systems. This initiative mobilized resources to evaluate multiple business continuity plans and activated the company's emergency response plan, and brought in external agencies to provide strategic guidance. The exercise was successful, leading to significant procedural and response plan improvements. Additionally, lessons learned and improvement action plans are being applied for future exercises to position PG&E and the Gas organization to minimize impact in an event of a security incident.

d) VALVE AUTOMATION

PG&E's Valve Automation Program is designed to accelerate emergency response and minimize the time of exposure in the event of an unintended release of gas. The Valve Automation Program allows certain gas transmission pipelines to be rapidly isolated through remote and automatic control valve technology. The program is working towards a goal of completing isolation zones by prioritizing projects based on whether the isolation zone protects HCA or Class 3 or 4 non-HCA, has a pipe diameter greater than or equal to 12.75 inches, has an Impacted Occupancy Count (IOC) greater than 0, and targets an estimated gas evacuation time of 30 minutes or less.

Installation of automated isolation capabilities on transmission pipelines in populated areas may reduce property damage and danger to emergency personnel and the public in the event of a pipeline rupture. Additionally, PG&E's control room personnel are trained to develop a "bias for action." This training helps them recognize and act on system conditions warranting immediate isolation of pipeline systems. Planned SCADA installations are ongoing to increase system visibility [see Section IV.7.a. *Gas System Operations and Control*].

The Valve Automation Program continues to build upon the scope and principles in PG&E's Pipeline Safety Enhancement Plan that replaced, automated, and upgraded gas shut-off valves across PG&E's gas transmission system. Since starting in 2011, a total of 414 valve automations have been installed. In 2024, nine valves were automated which enabled the isolation of five zones, increasing safety along 118 miles of gas transmission pipelines through the Valve Automation Program.

e) EMERGENCY PREPAREDNESS AND RESPONSE

PG&E's Gas Emergency Response process is documented primarily in the Gas System Operations Control Room Management Manual and the Gas Emergency Response Plan (GERP).

i. GAS SYSTEM OPERATIONS CONTROL ROOM MANAGEMENT MANUAL

Gas Control is responsible for the overall operation of PG&E's gas system, and therefore, closely monitors and coordinates emergency notifications, dispatching, system isolations, and restorations.

Gas Control personnel primarily use SCADA system data to monitor and control critical assets remotely. The SCADA system alerts Gas Control of gas system irregularities via alarms. When these alarms sound, Gas Control can immediately initiate and execute shutdown zone plans or direct field personnel to respond to critical locations for the execution of manual valve operations. In addition, Gas Control notifies appropriate 911 agencies and departments within PG&E so that emergency response resources are informed and dispatched.

To maintain compliance and aid in the management of abnormal and/or emergency operating conditions, PG&E regularly trains gas control personnel on the Gas System Operations Control Room Management Manual.

ii. COMPANY EMERGENCY RESPONSE PLAN

The purpose of the Company Emergency Response Plan (CERP) is to guide the gas and electric businesses with a safe, efficient, and coordinated response to an emergency. For changes to PG&E's CERP, please see Attachment 2.

The CERP provides a broad outline of PG&E's organizational structure and describes the activities undertaken in response to emergency situations. The CERP presents a response structure with clear roles and responsibilities and identifies coordination efforts with outside organizations (government, media, other gas and electric utilities, essential community services, vendors, public agencies, first responders, and contractors).

The CERP follows a logical flow from general emergency response concepts and guidelines to specific emergency management organizational structure, roles, responsibilities, and processes. When appropriate, the plan also references supporting procedures and other response materials.

In addition, PG&E maintains business continuity plans, which describe how PG&E will continue its critical business processes in the event of a disruption to facilities, technology, or personnel.

iii. GAS EMERGENCY RESPONSE PLAN

The GERP²⁷ provides detailed information about PG&E’s response to gas emergencies. It supports the response to all emergencies broadly as “One PG&E” through the integration with the CERP and the other functional area emergency response plans, which are annexes to the CERP. For 2024 changes to PG&E’s GERP, please see Attachment 2.

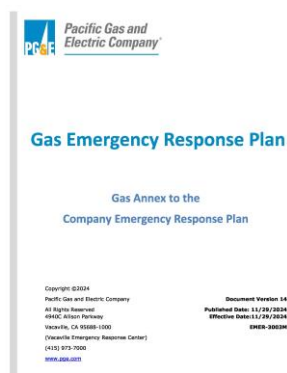


Figure 55 – The Gas Emergency Response Plan as of November 29, 2024

The GERP provides an outline of the Gas organizational structure and describes the activities undertaken in response to incidents. It provides a response structure with clear roles and responsibilities, a communication framework, and identifies coordination and response integration efforts with outside organizations and community first responder agencies.

The GERP outlines gas specific criteria to PG&E’s Incident Levels that are provided in the CERP. The Incident Levels categorize 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 incident classification system shown in the figure below:



Figure 56 – PG&E’s Gas Incident Classification Levels

iv. EMERGENCY FIELD OPERATIONS TEAM

The Emergency Field Operations Team assists Gas with emergency planning, preparedness, response, and review. This group provides SME review of the GERP, supports exercises, facilitates after action reviews, and participates in industry activities designed to impart best practices. The group facilitates the use of the Incident Command System: a systematic, proactive approach for all levels of governmental and non-governmental organizations and the private sector to work together during an incident to reduce the loss of life, damage to property, and harm to the environment. Further, the team supports the Gas organization's local emergency response structure and deployment, the five regional Incident Management Teams (IMTs), and the five Gas Emergency Center teams. The IMTs and GEC are activated according to criteria outlined in PG&E's GERP.

Frequent outreach to first responders helps strengthen how PG&E coordinates when emergencies happen. In 2024, Emergency Field Operations, Public Safety Specialists, and Grassroots Safety completed the efforts in partnership and close coordination with fire, law enforcement, SoCalGas and Chevron through Live Action Drills.

Valuable lessons learned from Live Action Drills, Incident Command System (ICS) training, and IMT seminars guided Bay Region IMT first Responders to identify and mitigate dangerous conditions of gas migration from a dig-in to a Mega Data Center. Quick coordination with Fire and Law enabled a rapid evacuation and zone shut down of the gas system. These actions prevented loss of life and property damage from an explosion.

Throughout 2024, the Gas Emergency Response Group accomplished the following items:

- Delivered ICS 402 to executive leadership, ICS 300 to three power generation IMTs, and table-top exercises to three electric IMTs;
- Facilitated one full scale exercise of gas IMT, GEC, compression facility, gas control and a live action drill component, two well control tactical consideration functional exercises, and eight live action drills;
- Supported three IMT activations, including the L-301 transmission line strike, the dig-in at a mega data center in San Francisco, and the Humbolt area earthquake.

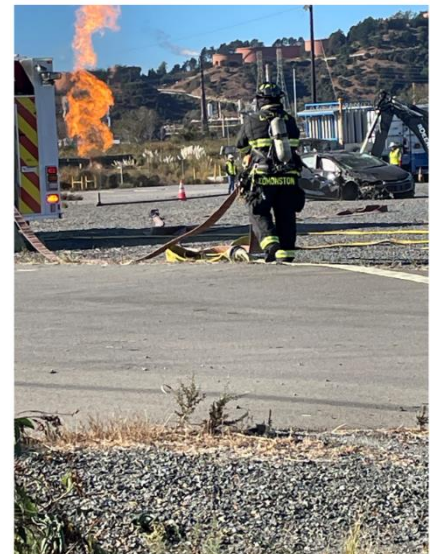


Figure 57 – Live Action Drill at Chevron Facility



SF Paul Ave. Dig In Incident Action Plan

Operational Period 3



10/4/24 0600 - 10/05/24 0600

Figure 58 – San Francisco Dig-in Action Plan



PG&E Incident Action Plan Humboldt Earthquake Event

Operational Period #1: December 6th
12 hour operational period
0600-1800



Figure 59 – Region 1 North Coast IMT Incident Action Plan Cover



L301F Dig In

Operation Period 1 - 8/16/24 0600 to 1800



Figure 60 – Line 301F Castroville Dig-in



Figure 61 – Region 3 Bay IMT Seminar/Tabletop Exercise

V. WORKFORCE

PG&E's work requires well-trained personnel to correctly perform work activities. As a result, the Company invests in recruiting and retaining, provides ongoing development and training, and maintains supportive controls for employee and contractor work. Well-trained, fully engaged employees are a key component of Gas Safety Excellence.

For example, employees are required to wear the appropriate Personal Protective Equipment (PPE) when they are in the field. Employees can refer to PG&E's PPE Matrix, which documents the minimum PPE required when performing certain tasks. PG&E annually reviews its PPE Matrix to evaluate the appropriateness of current PPE requirements. Employees in the field also document the controls for any identified hazards associated with their tasks using a JSSA form. PG&E's PPE Matrix and JSSA are vital resources for employees as they plan their work prior to executing in the field. Enhancements in 2024 included expanded choices in FR clothing for our female coworkers as well as changes in the metatarsal guard requirements.

1. WORKFORCE SIZE

PG&E's internal employee workforce works in conjunction with qualified contractors to perform quality work and maintain the safety of PG&E's gas system. Gas engages the Workforce Planning function to determine the appropriate workforce size and types of roles that are required to fulfill our annual work objectives. We recruit talented employees and, at times, rely on the unique capabilities of various contracting firms during periods of peak or unique workload. PG&E has robust training programs and training facilities to develop its workforce so that each of our employees has the knowledge to perform his or her job safely and confidently. Safety training starts on day one as part of new employee orientation and continues throughout each employee's career.

2. WORKFORCE SAFETY PROJECTS

In 2024, PG&E continued to initiate and execute projects designed to improve employee safety. The primary focus was on taking care of employees before an injury gets worse. The following summarizes the proactive measures taken by Gas in 2024 and their progress and successes:

Office Ergonomics – RSIGuard, a tool to help with in-office ergonomics, was discontinued in late 2024. This will be replaced in 2025 with a series of new tools aimed to holistically identify and mitigate ergonomics risk for both office and frontline coworkers. All coworkers will utilize the new Ergo4Me program to complete annually required ergonomics training and self-assessment. Gas will emphasize the importance that any corrective actions identified during the self-assessment are completed within 60 days of training completion.

Nurse Care Line (NCL) – If an employee feels any pain or illness, they are encouraged to call the NCL for medical advice as it has been shown that severity of injuries can be reduced if treated early. NCL timely reporting has increased significantly between 2014 and 2024. In 2024, there was a slight decrease in reporting of injuries within the first day; however, reporting within 24 hours of the onset of discomfort remains above 90 percent (as seen below in Table 27).

Table 27 – Gas - NCL Timely Reporting										
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Percentage Total	63.1%	69.5%	74.0%	77.7%	80.8%	75.5%	75.9%	92.8%	90.7%	90.1%

The focus on early reporting and prevention has contributed significantly to the downward trend of injury severity and reduction in average cost per claim. We anticipate this downward injury trend will continue with increased timely reporting, IAS utilization, Industrial Ergonomic evaluations, and Health and Wellness programs.

IAS Utilization – In 2024, 31 percent of Gas eligible physical workforce participated in 1:1 services with an IAS. Overall, the Industrial Athlete program hosted over 15,000 group events with over 65 percent of participants coming from Gas Operations. Due to the high volume of group events, coworkers had multiple touchpoints with the IASs over the course of the year, which may reduce the need for 1:1 services. In 2024, 88 percent of IAS services were preventative in nature, with 12 percent of services focused on addressing work-related and non-work-related discomfort issues.

Industrial Ergonomics – Increased assessment of individual tasks by both Industrial Ergonomists and Field Safety Specialists occurred in 2024. Industrial ergonomic projects in 2024 included:

- **Comparative Analysis of Gas cutting tools:** The Industrial Ergonomics Team, Gas Operations, and Grass Roots Safety Team personnel conducted a risk analysis of the different tools used to break stuck collars to help reduce injury and fatigue. Findings indicated an ergonomics risk reduction of up to 58 percent by substituting use of an 18-inch offset wrench with either a 4-wheel cutter (37 percent), manual hacksaw (50 percent), or a sawzall (58 percent).
- **Locate & Mark Muscle Fatigue Failure Analysis:** The Industrial Ergonomics team conducted a muscle fatigue failure analysis study for work tasks performed by Gas Compliance Reps (GCR) to determine work tasks and/or work practices that were the greatest contributors to muscle fatigue, a precursor to musculoskeletal injuries. Key findings indicated that lid lifting tasks, especially when combined with manipulation of secondary box lids significantly increases shoulder, back, and distal upper extremity (DUE, elbow to fingertips) fatigue. High forces were also observed when opening or closing vehicle bed storage trays which contribute to overall shoulder fatigue. The study found a nearly 100 percent shoulder failure rate in worst case scenarios (i.e., single person and two-person lifting one large lid/shift; and opening or closing

storage tray 30 times/shift). Additional findings include increased DUE fatigue when inserting locate flags into hard-packed ground and with repetitive depressions of the paint stick trigger. Work practice recommendations, such as proper body mechanics, use of tools, and ergo best practices, were provided to reduce muscle fatigue.

- Locate & Mark Lid Lifting:** The Industrial Ergonomics team conducted an assessment looking at the different manhole covers, lids, available tools, environmental factors, and current practices used to conduct lid lifting operations in the Damage Prevention Functional Organization. Recommendations included use of Griesman tool for single person lifts to reduce risk by 60 percent verses using a standard cable hook. Their recommendations included performing a team lift when possible; cleaning of debris along seals and edges; and utilization of good body mechanics.
- Damage Prevention – Vivax Ground Rods:** The Industrial Ergonomics team did a comparative analysis of using a standard t-handle ground rod versus a heavy-duty ground rod. Selecting the appropriate rod for the environmental conditions and using a hammer to reduce force when inserting the grounding rod reduced ergonomics risk up to 20 percent. Additional recommendations included tips on pre-install planning, preparation, body mechanics, and proper use of tools.

3. WORKFORCE TRAINING

PG&E’s Gas Safety Academy in Winters, California, is a state-of-the art gas training facility that includes a utility village that provides realistic residential and commercial scenarios for LS, leak pinpointing, and emergency response. Other features include the Miller® LiveArc™ welding performance management system with a simulation/pre-weld setup mode and live-arc training mode, allowing learners the opportunity to fine-tune their foundational welding skills, build confidence, become familiar with body mechanics, and build muscle memory prior to welding.

At the Gas Safety Academy, fundamental safety and code requirements are embedded within every course. Safety is non-negotiable and our standards align with the requirements of federal OSHA, Cal/OSHA, National Commission for Certification of Crane Operators, NACE, American Weld Society, and the California Department of Motor Vehicles.

In 2024, the Gas Safety Academy facilitated over 19,500 student days at the technical, apprentice, and leadership levels. As of December 31, 2024, PG&E developed or enhanced approximately

Table 28 – PG&E Number of Courses Developed or Enhanced from 2012 through 2024	
2024	30
2023	48
2022	47
2021	118
2020	224
2019	112
2018	122
2017	162
2016	214
2015	107
2014	78
2013	88
2012	14
Total	1,364
*Total does not represent total number of active courses	

1,350 courses since 2012 (Table 28). PG&E continues to enhance and continuously improve training so that all classifications in Gas have initial and refresher training.

Workforce safety highlights from 2024 include:

- Completed the construction on a 700-foot pigging test loop in the Winters Training facility. The test loop and associated training scenarios are designed to place students in actual Gas Operations pigging situations encountered in the field and includes loading, unloading, pipe pressurization and manipulation of the systems twin-lock door mechanisms. Identifying and responding to abnormal operating conditions (AOC's) are also part of the training strategy.
- The Winters training facility began the process of adding six additional classrooms to accommodate increased training demand in Gas Operations and to provide space for operational groups such as vegetation management to host training.
- Increased focus on refresher training with an emphasis on hands-on scenarios and task-based activities. High-risk tasks identified and targeted included excavation safety & shoring as well as troubleshooting appliances, leak identification, responding to dig-ins and cross bores, and other major gas events. Hands-on focus will continue into 2025 as we review and update our Utility Worker Program and other equipment related training such as rigging/hand signaling.
- Designed, established, and implemented the Safe Access field to support Locate and Mark Training. Using an integrated holistic approach, this has enabled employees to safely locate electric facilities.

The Gas Safety Academy continues to improve technologies used to facilitate learning, including Mobile MyLearning, which was expanded to more courses. The expansion gives learners the ability to complete safety and compliance training on company smart devices without needing to travel to a headquarters. Mobile MyLearning provides the opportunity for on-demand training and immediate content updates in the field.

The goal of PG&E Academy is to continuously maintain our curriculum to ensure it mirrors current safety practices, procedures, regulatory requirements, and new equipment in the field. The recommendations in Table 29 are the output of a partnership between Gas SMEs and PG&E Academy. The partnership starts with Gas Training Governance and is led by leaders within Gas to ensure that PG&E Academy's projects are aligned to key initiatives within the functional areas they support. High-risk, high-consequence tasks are identified by utilizing SME expertise to ensure that the training mirrors actual field conditions and scenarios. The Training Governance charter outlines the partnership with a mission to provide oversight, control, decision making, and coordination of policies, procedures, and processes that successfully support PG&E Gas' strategic objectives to deliver to our hometowns, serve our planet, and lead with love.

Table 29 – Gas Training Recommendations	
Recommendations	Progress as of Dec 31, 2024
Develop programs that support employees throughout their career	<ul style="list-style-type: none"> • Courses developed and aligned to business need and results are measurable. • Completed and enhanced apprentice and new employee programs developed to advance employees to journey-level competency. • Increased focus on refresher training to maintain skill and competence of existing workforce.
Broaden technology solutions and leverage external curriculum	<ul style="list-style-type: none"> • Deployment of mobile web-based training solutions available on iPad and iPhone. • Performance support solutions available via portal platform and SharePoint for most functional areas in Gas Ops.
Implement continuous training improvement processes	<ul style="list-style-type: none"> • Gas Training Governance continues to mature, and the recently established Gas Training Alignment Committee has provided an open forum for Gas Operations to introduce and discuss potential training needs and performance gaps. The Academy partnered with the Gas functional area and the Gas Qualifications department to develop technical training and qualification profiles for Gas employees to ensure consistency amongst job classifications and to provide line of sight into who is trained and qualified to perform the work. • Implemented monthly Gas Training Alignment Committee (GTAC) to review emerging training related challenges or opportunities with those closest to the work.

4. GAS OPERATOR QUALIFICATIONS

PG&E’s Gas Qualifications Department maintains and implements qualification programs covering welding, plastic pipe joining, and operator qualifications pursuant to federal and state regulations and industry best-practices.

PG&E requires that all employees, contractors, and third-party installers of pipelines be appropriately trained and possess all requisite qualifications to perform tasks on pipeline facilities. A qualified operator has the expertise to complete work correctly and is part of the team that helps PG&E meet its commitment to public and employee safety. In 2024, the teams qualified and/or requalified over 25,000 operator qualifications for PG&E employees and over 4,000 operator qualifications for contractors.

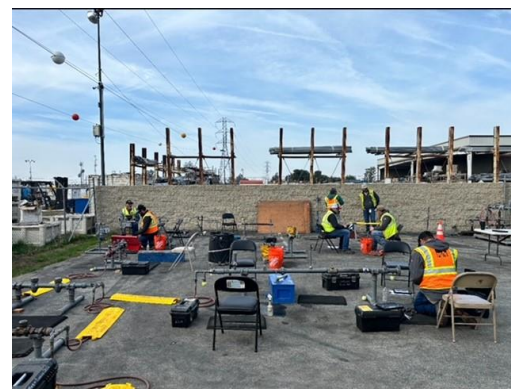


Figure 62 – Employees Taking Performance Operator Qualification Exam

Pipeline tasks require specific competencies to be performed safely and reliably. These competencies are reflected in the “Knowledge, Skills, and Abilities” (KSA) needed for each task; KSAs are determined by a group of SMEs specific to each task. An individual’s KSAs are assessed via a combination of written and performance (practical demonstration) evaluations and candidates must score 80 percent on written exams and 100 percent on performance exams to be “qualified.” Evaluations are primarily geared towards safety and recognizing and reacting to Abnormal Operating Conditions (AOC). Depending on the task and applicable regulations, qualifications must be renewed every six months, one year, three years, or five years.

Personnel use task specific Span-of-Control practices to gain hands-on experience working under the direction and observation of qualified individuals. Working under the direction and observation of qualified persons allows trainees to practice their skills in real-world conditions and gives qualified persons the opportunity to advise, to correct, and if required for safety, to take over the performance of the task.

By maintaining a qualified workforce, PG&E can quickly and competently recognize and respond to any AOCs that may pose a threat to the safety of the public, employees, or assets.

PG&E continued its program to ensure process consistency with an approved contract evaluator and proctors, which includes regular visits by a PG&E Operator Qualification (OQ) representative to the approved contract evaluators' and/or proctors' locations to conduct observations of their OQ process during live OQ evaluations. This helps to ensure that our approved contract evaluators' programs are consistent with PG&E's internal OQ program and can help us provide feedback or opportunities for improvement where necessary. The Gas Qualification department continues to refine the process every year.

In 2024, the Gas Qualification team collaborated with Industrial Training Services, Inc. (the vendor for the OQ management system) to roll out the ITS GO APP. This app enables anyone to look up a person's OQs for both PG&E and contractors.

PG&E's Gas Qualifications Department actively participates in benchmarking and process improvement initiatives with other utilities and other industries across the country to continuously find ways to increase the expertise of the workforce.

5. CONTRACTOR SAFETY AND OVERSIGHT

Contractors are an important aspect of PG&E's technical workforce. Since contractors often work



Figure 63 – Four-Step Process to Contractor Safety and Oversight

with PG&E assets and infrastructure that directly impact employee and public safety, the Company holds contractors to the same standard of safety as PG&E employees. The Contractor Oversight Procedures follow a four-step process (Figure 63) for contractor safety and oversight.

Prior to starting a job, PG&E pre-qualifies contractors and subcontractors and confirms that they are qualified to complete contracted work through internal and International Suppliers Network (ISN) reviews. PG&E continues to improve its contractor pre-qualification process and to update it to meet and exceed corporate

requirements. PG&E evaluates the contractor's qualifications and performance results, including a host of personnel injury performance metrics. As part of this qualification, contractors on major capital and expense projects such as strength testing, pipe replacement, valve automation, and ILL, are also given in-person and computer-based training on PG&E's quality and safety expectations and typical hazards associated with the work.

Once construction on a project has started, PG&E carries out a plan for contractor performance and clearly communicates contract terms that hold contractors accountable for safety and quality. Job-site observations start during pre-job walk-throughs to evaluate site specific hazards prior to starting work.

PG&E then schedules regular meetings with contractors to oversee their work and confirm expectations are met. In addition to regular oversight, PG&E inspects contractor work and a QA team randomly checks project completion from beginning to end. On a quarterly basis, PG&E's leadership and contractor leadership meet to understand opportunities to improve the overall Contractor Safety and Oversight Program, analyzing both quantitative and qualitative trends in data from on-site observations and inspections.

After the job is complete, PG&E evaluates the contractor's performance using a scorecard that includes metrics on safety performance and contractual obligations. Contractors also have the opportunity to provide feedback to PG&E through a similar scorecard.

Contractor performance is tracked throughout the year and compared to Company performance. Figures 64 and 65 provide 2024 metrics on injuries and motor vehicle incidents comparing PG&E internal data and data provided by Strategic Partners.

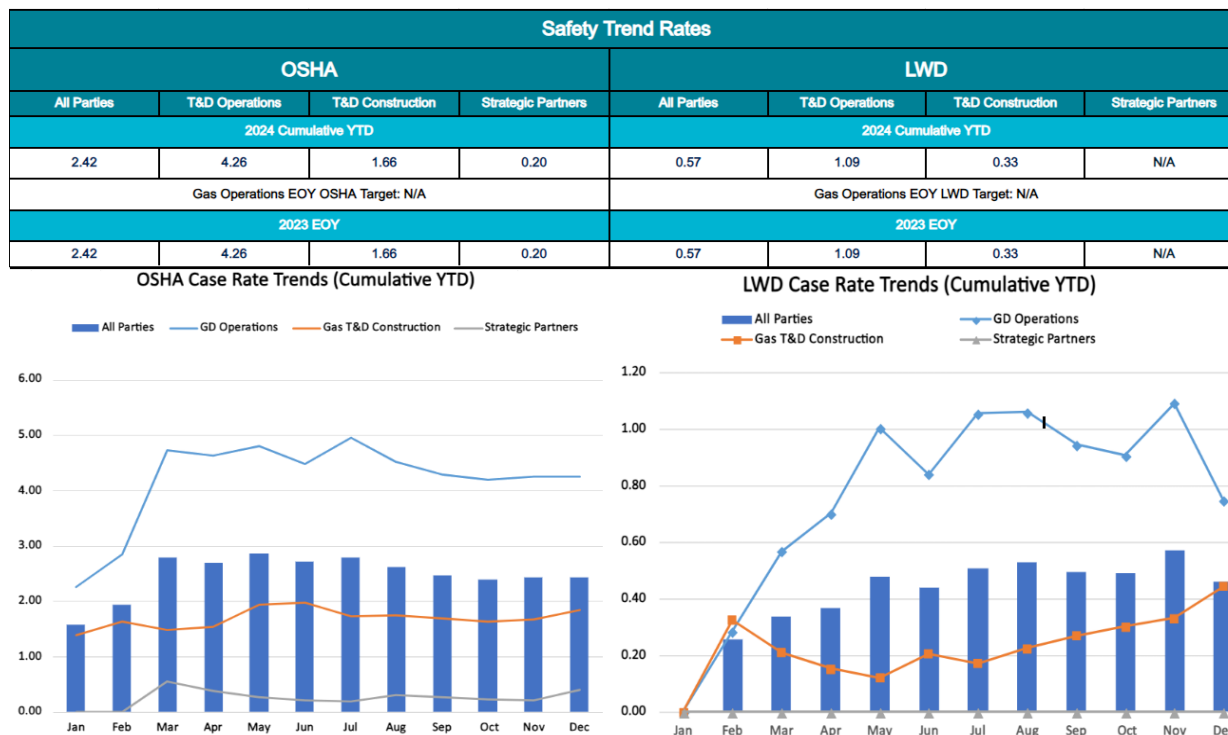


Figure 64 – 2024 Gas Safety Performance | OSHA and Lost Work Days (PG&E vs Strategic Partners)

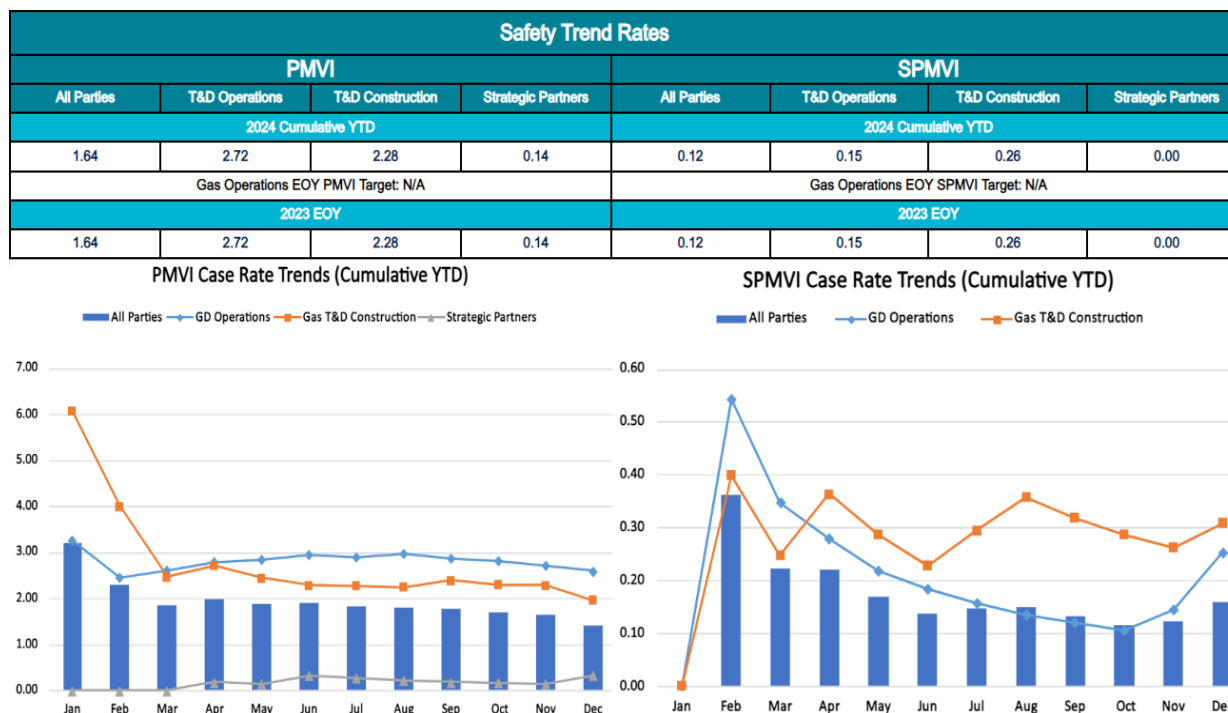


Figure 65 – Preventable Motor Vehicle Incidents and Serious Preventable Motor Vehicle Incidents (PG&E vs Strategic Partners)

In 2024, the Gas Contractor Safety Team and the Gas Contract Owners continued to focus heavily on improving contractor incident reporting, tracking, and follow up. The incident reporting improvements in the Contractor Incident Program showed a substantial increase in reporting of First Aids, OSHA, PMVI, Good Catches, Dig-In and Property Damage. In 2024, Gas Contractor Safety continued to see rigorous and expanded reporting by our Contract partners that started in 2023. Contract partners continued to lead their own SIF investigations with support from functional areas and the Enterprise EH&S Cause Evaluation Teams. This has translated to increased ownership and self-identified corrective actions. Gas implemented an improved Project Specific Safety Plan and Programmatic Safety Plan for Medium and High-Risk Gas Contractors. This expanded contractor engagement resulted in increased hazard identification and rigorous pre-job planning.

As PG&E strives to improve project safety, quality and productivity, the Company takes every opportunity to acknowledge when people are doing things right and recognize them for their specific efforts, innovations, contributions, hard work, safe work practices, good decisions, great planning, timely completion or any other specific accomplishment—no matter how small. In 2024, there were 771 “Good Catches” turned in from our contract partners to PG&E’s safety and construction management function. This is a 19 percent increase compared to 2023. Everybody that turned in a “Good Catch” was recognized and the “Good Catches” were shared on a weekly call with all PG&E construction and contractor leadership. Contractors continue to speak up to raise awareness and share best practices. This increase is attributed to improved reporting tools that allow field employees to report good catches directly to Gas Contractor Safety.

6. PARTNERSHIP WITH LABOR UNIONS

Union-represented employees make up almost 81 percent of PG&E’s Gas workforce and are integral to the Company providing safe and reliable gas service. PG&E frequently works with its union partners to identify opportunities for training, process improvement, and other investments in the safety of its union-represented employees and the public. In 2024, PG&E continued to collaborate with union leadership leading to improvements, such as:

- Engaging with union business representatives on critical topics at Leadership Town Halls;
- Collaborating further to address and mitigate employee escalations and concerns;
- Launching human performance tools throughout the organization; and
- Working with IBEW on PowerPathways opportunities.

VI. COMPLIANCE FRAMEWORK

PG&E transports and stores natural gas under the requirements of state and federal safety regulations. The E&C Maturity Model was developed in 2016. The model is derived from the Federal Sentencing Guidelines and the U.S. Department of Justice's Evaluation of Corporate Compliance Programs, both of which define the parameters of an effective E&C program. PG&E continues its focus that each functional area achieves Level 3 maturity in each of the following eight Maturity Model elements: Risk Assessment, Program Governance and Resources, Guidance Documents, Compliance Controls, Communications and Training, Monitoring and Auditing, Investigation and Response, and Enforcement and Incentives. The maturity level ratings between 1 and 5 are defined as: Initial (1), Defined and Built (2), Implemented (3), Managed (4), Optimized (5).

The Compliance Maturity Model is a framework to manage the overall compliance program. It provides Gas a guideline on what an effective E&C program should look like. This approach aligns with the "Plan, Do, Check, Act" (PDCA) management method that PG&E employs throughout its operations as part of Gas Safety Excellence.

Gas has made significant progress since the initial baseline performance assessment was conducted in 2019 and has improved maturity scores in seven of the eight elements. The last maturity assessment was completed by Gas, in partnership with Ethics & Compliance, in 2021. The 2021 assessment results were finalized in early 2022, and six of the eight Compliance Maturity Model elements achieved level 3 maturity scores. Element 4 – Compliance Controls remained at level 1, which was expected as the Controls Program is anticipated to reach level 3 maturity in 2026. Element 5 – Communications and Training was assessed at level 2, which was downgraded from the 2020 third-party assessment score of level 3. The drop in maturity level resulted from the absence of a process to validate that proper trainings are in place for compliance requirements. Table 30 provides the maturity level score progress in Gas for each of the eight elements since the inception of the Compliance Maturity Model.

Assessments were not conducted in 2022 and 2023 due to the Enterprise allowing Functional Areas to focus on completing remediation action items to improve their maturity scores. In 2024, an assessment was not conducted due to technical issues with the Enterprise compliance management tool, MetricStream. An assessment is tentatively planned for 2025 when MetricStream issues are resolved.

Table 30 – Gas Compliance Maturity Model – Assessment Scores by Element									
Element	2016 Baseline	2017 3 rd Party	2018 3 rd Party	2019 3 rd Party	2020 3 rd Party	2021 PG&E	2022 n/a	2023 n/a	2024 n/a
1. Risk Assessment	3	2	3	2	2	3	Assessment not performed	Assessment not performed	Assessment not performed
2. Program Governance	2	2	2	2	3	3			
3. Governance Documents	2	2	3	1	1	3			
4. Compliance Controls	1	1	1	1	1	1			
5. Communications & Training	2	3	Not Assessed	1	3	2			
6. Monitoring & Auditing	2	2	3	2	3	3			
7. Investigations & Response	2	3	3	1	2	3			
8. Enforcement & Incentives	1	1	3	1	2	3			

Action Plans were developed in subsequent years to address gaps that were identified in the 2021 self-assessment. In 2023, the Action Plan executed by Gas fully implemented the Requirement Owner certification process in MetricStream and Certification was completed for all Requirement Owners of high and medium-risk compliance requirements. The certification also included a validation of compliance trainings by Requirement Owners, which addressed the training gap identified in the 2021 self-assessment.

The 2024 Action Plan implemented a key pilot effort with several process teams to reassess risk rankings of compliance requirements using the new enterprise Compliance Requirement Prioritization Methodology. The new Methodology is designed to allow the enterprise to risk rank compliance requirements more effectively and to ensure work for the highest risk rank compliance requirements are properly prioritized. Additionally, Gas collaborated with the Enterprise Lean Office to analyze the WGE process, which investigates non-compliance issues to prevent reoccurrence. Inconsistencies in the process were found and improvement areas were identified to enhance the process.

A 2025 Action Plan has been developed to include implementation of the improvement areas for the WGE process. Furthermore, Gas will continue to implement the enterprise Compliance Requirement Prioritization Methodology with additional process teams to have the risk rankings of compliance requirements reassessed. A limited scope assessment of certain elements is planned for 2025.

While the Compliance Maturity Model structures PG&E's strategic approach to compliance, day-to-day compliance performance continues to be built upon these four key enablers:

- Employee expertise;
- Providing employees the right information at the right time;
- Making available the right resources at the right time; and
- Implementing supportive controls.

More information on each of these enablers can be found in the following sections.

1. BUILDING EXPERTISE

PG&E employees require specialized skills to perform their jobs of constructing, operating, and maintaining the natural gas systems. As detailed in *Workforce Training* (Section V.3.) and *Gas Operator Qualifications* (Section V.4), the Company recognizes that its employees are a critical element in the compliant operation of the pipeline system every day; competent and capable employees perform work safely, effectively, and efficiently while using their knowledge and experience to identify and raise opportunities for continuous improvement. PG&E employees continuously receive a multitude of new and refresher trainings (both hands-on and web-based) and certifications. These trainings ensure employees stay current with new or changing regulations, internal standards, procedures, and work methodologies to enhance public safety.

2. THE RIGHT INFORMATION TO DO THE WORK

A highly-skilled workforce is most effective when provided with timely, accurate information. Gas pipeline work is highly technical and, if not performed correctly, could result in serious safety concerns. To enable the consistent performance of work across our service territory, PG&E uses written guidance documents, such as standards, procedures, and job aids. These documents are stored electronically in the Technical Information Library and are reviewed and updated routinely to reflect both regulatory requirements and best practices, as well as any lessons learned from Company or industry experiences. Additionally, these documents are available in real time to the field and contractors via a mobile application, making access easy while on site. It requires significant efforts to keep all personnel performing work in accordance with these documents and to ensure that personnel are made aware of any changes. Coworkers are provided with the requisite training and access to SMEs to maintain compliance.

In 2024, PG&E continued publishing changes to the TIL on a monthly basis. This allows PG&E to pace changes experienced by people performing the work, and for more time to receive and digest each change to their work between the publication date and the effective date of any given change. E-mail communications are sent out that separate changes based on several categories, allowing employees to determine relevant changes more efficiently. Additionally, each document change is assessed for impact and, depending on the assessment, is rolled out in a layered approach using multiple communication channels as appropriate. There are many channels utilized, such as simple emails or discussions from worker leadership, tailboards, direct group meetings with the people doing the work, or PG&E Academy training.

In addition to technical guidance, employees need accurate and timely information about PG&E's pipeline assets. PG&E has two pipeline GIS mapping systems—one for transmission assets and another

for distribution assets. These systems contain geospatial information about the pipeline system including detailed information about asset history, materials, manufacturer, and location of the majority of assets. These systems help PG&E effectively conduct integrity management program work, locate mains and services, and plan for construction. PG&E works continuously to improve the quality of the information in both mapping systems. Given the volume of work performed on the pipeline systems every day, it is critical to have processes that update these mapping systems accurately and promptly.

3. THE RIGHT RESOURCES TO DO THE JOB

Once the portfolio of work has been identified and approved, the PG&E Gas Resource Management team determines the number of internal and external resources that will be needed to complete the portfolio of work efficiently. PG&E maintains master agreements with multiple contractors and maintains a database of construction qualifications to effectively assign work to the appropriate and most effective resources. The allocation of work is proposed by the Gas Resource Management team and then reviewed and confirmed by a broader “Work Allocation Team” made up of members from our Gas Sourcing, Engineering, Project and Program Management, Contract, and Construction Management teams who take into consideration workload, safety performance, and other factors when confirming resource assignments. PG&E uses workplans comparing the anticipated level of effort for planned work coupled with emergent work forecasts and compares that to internal resource capacity to signal the need for additional overtime, additional contractor resources, or any other additional needs required to safely complete the work as planned.

4. SUPPORTIVE CONTROLS

A compliant company utilizes numerous processes and programs to perform at a high level; some are aimed at monitoring or improving internal processes with corresponding compliance requirements and others are aimed externally to help PG&E identify opportunities for continuous improvement or pending regulatory changes. Figure 66 details some of these processes and programs.



Figure 66 – Compliance Supportive Controls

Gas continues its focus on analyzing historical compliance data from SED inspections and self-reports to identify improvement opportunities. Leveraging the process management framework and data analytics, the Regulatory Compliance team organizes our top compliance challenges by non-conformance drivers and partners with our Process Owners (PO) and Process Managers (PM) in developing specific action items to address these top challenges. As a result of making data-driven decisions, Gas has made significant improvements in our compliance performance, with an overall downward trend of non-compliances since 2019. By 2024, Gas reduced non-compliances by

approximately 71 percent compared to 2019 levels and continues to find opportunities to achieve our internal goal of reducing non-compliances by 90 percent by 2025 compared to 2019 levels.

In 2024, the Gas Regulatory Compliance team continued partnering with the QM and Internal Auditing teams to support a framework where Regulatory Compliance identifies compliance trends, Internal Auditing performs thorough investigations, and QM validates the effectiveness of the implemented preventative and corrective actions. As a result, Gas created quality assurance programs and is continuing to work with POs and PMs to implement additional controls in their processes to prevent non-conformances. This effort, in conjunction with the development of the Compliance Maturity Model mentioned in Section VI *Compliance Framework*, allows for continuous improvement to prevent non-compliance.

Gas places additional focus on self-identifying non-conformances to build transparency with our regulators and views these self-identified items as learning opportunities. PG&E has established processes in place to understand the apparent and contributing causes to the non-conformance, leading to the development of preventative and corrective actions to drive improvements. In 2024, a Notice of Violation/Non-Conformance Command Center was established to focus attention on review of non-conformances, how the non-conformances occurred, and corrective action plans. This command center is helping to drive further learning opportunities for continuous improvement. These actions support the Plan, Do, Check, Act methodology integrated into our compliance and quality management frameworks.

VII. CONTINUOUS IMPROVEMENT

Continuous Improvement is the mechanism through which PG&E evolves from reactive to proactive in the journey to Gas Safety Excellence. By continuously using a critical eye on existing practices and identifying the cause of challenges that arise, PG&E can correct problems before they result in compliance violations or harm to PG&E employees or the public. While continuous improvement is embedded in PG&E, a few programs are highlighted below.

1. LEAN

PG&E's Enterprise Lean Operating System is designed to drive more effective and responsive decision-making, reduce challenges many coworkers face in their day-to-day work, and deliver better outcomes for customers. It focuses on driving a culture of performance around the company's top-line metrics and key risk areas. The Enterprise Lean Organization (ELO) provides strategic direction for our Lean journey and empowers continuous improvement. Lean Thinking refers to approaches that focus on elimination of waste in all forms, and the smooth, efficient flow of materials and information to obtain faster customer response, higher quality, and lower cost.

Lean is our fundamental, everyday operating system and leverages five basic plays to drive transparency, control, and predictability for coworkers across the system. In 2024, the ELO continued its focus on strategy deployment building Lean capabilities and standard tools, with many teams within Electric and Gas trained to use Lean Visual Management boards, conduct Lean Operating Reviews, leverage Lean Problem-Solving methods, and standardize effective work processes and best practices to deliver results. Additionally, Waste Elimination became a primary focus with initiatives developed to increase efficiency and safety while reducing costs.

a. ELECTRIC & GAS PERFORMANCE AND PROCESS IMPROVEMENT TEAM (E&G PPI)

E&G PPI (formerly the Lean Capability Center) partners closely with ELO and supports our functional area partners in Gas and Electric. E&G PPI helps these functional areas move their businesses forward through Lean maturity, process architecture support, and waste elimination projects, allowing processes to improve continuously and tenaciously.

E&G PPI team accomplishments in 2024 include:

- Transitioned Lean Model Yards to a dedicated organization to support the Lean Yard expansion.
- Completed Process Maturity Assessments for all 22 Gas processes.

E&G PPI team plans for 2025 include:

- Implementing improvement opportunities identified during Process Maturity Assessments.
- Continuing to promote standards and structure to improve Lean adoption maturity.
- Continuing to drive cross-functional collaboration and accountability for operational performance through direct coaching and support to help the Gas Operations & Engineering functional area teams deliver on waste elimination objectives of improving safety, quality, cost, delivery, and morale.

As we become more adept at the Lean way of working, the result will be a more empowered workforce; improved problem solving; better transparency of work, performance, and drivers of work across disciplines; a more organized and efficient cadence of meetings to support coworkers, and improved service for our customers and communities.

2. QUALITY MANAGEMENT

Gas Quality Management (QM) is comprised of Quality Assurance (QA) at the Gas level and Quality Control (QC) situated either at the Gas level or within the functional work groups. QC looks for defects in the work being performed and in the corresponding records. QA is a combination of Quality Verification assessments that validate the effectiveness of QC looking for nonconformances to procedures and QA audits that look to prevent defects by identifying process gaps and recommending corrective actions. Together, QA and QC, under the Quality Management System (QMS) umbrella, work

together to drive down non-compliance risk. The following illustration depicts the layers of defense working to mitigate non-compliance risk.

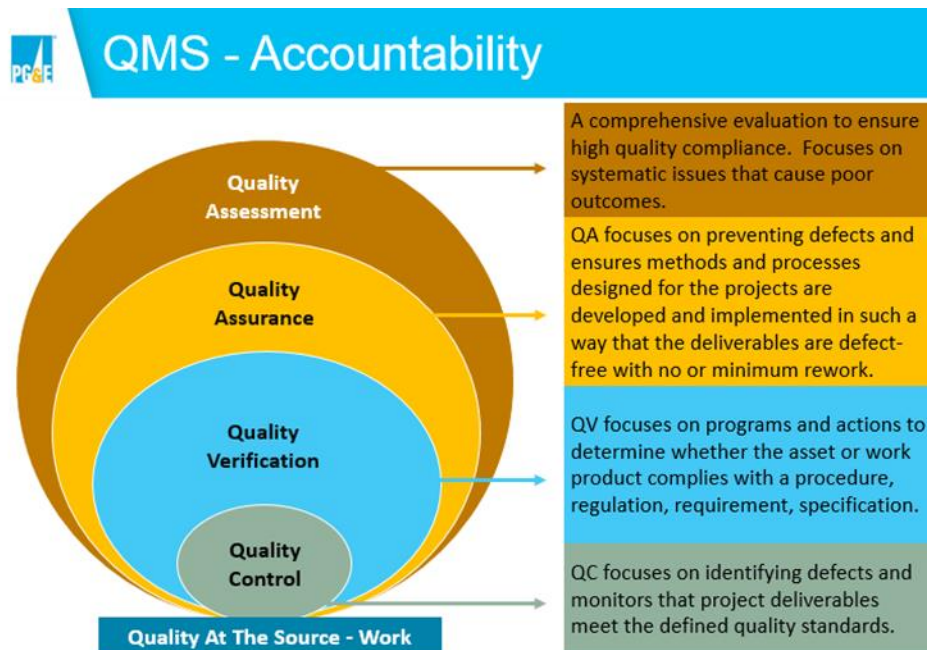


Figure 67 – Layers of Defense Against Non-compliance Risk

The QMS framework and collaborative approach to quality allows for continuous improvement and drives consistency by identifying nonconformances, recommending corrective actions, and following up with mentoring and coaching for people doing the work. It also continues to align with the fundamental principles of the QMS which leverages the “PDCA” framework (Figure 68). PDCA is the iterative four-step management method used in business for the control and continuous improvement of processes and products. Just as a circle has no end, the PDCA cycle should be repeated for continuous improvement.

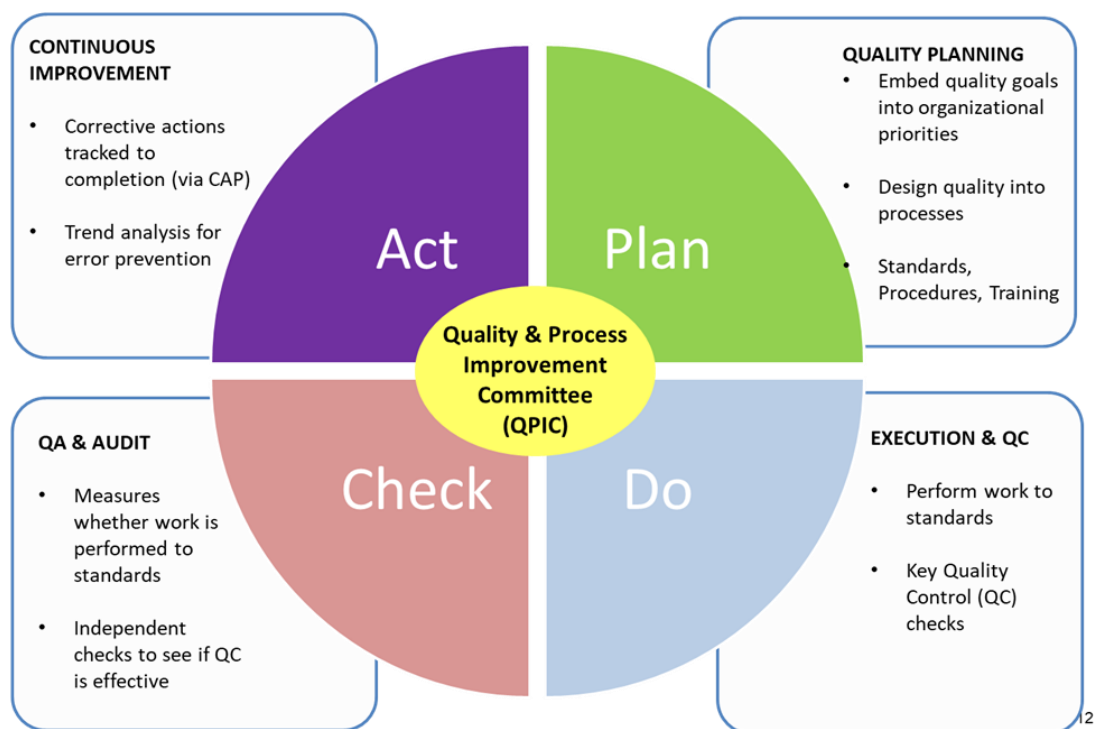


Figure 68 – QMS Fundamental Principles

In 2024, T&D construction As-Built job packages, Regulator Stations and Valves, USA Tickets, Leak Survey, Instrument Calibration and Rectifier records continued to be reviewed by QC and QA. Field Quality Verification (QV) assessments were conducted for General Construction and Maintenance and Construction work as well as Leak Survey, Locate and Mark, Corrosion, GPOM and Field Service. There were 17 active QC/QV programs as of December 2024, shown in Table 31.

Leak Survey T&D Post Assessment	GPOM Odorization
Leak Survey Distribution Records	Distribution Construction
Field Services	Transmission Construction
Instrument Calibration	Regulator Station Maintenance
Corrosion – Exposed Pipe/Spans	Damage Prevention – Locate and Mark
Damage Prevention – USA Tickets	Gas T&D As-Built
Distribution Maintenance	Corrosion – Rectifiers
Post Construction Asset Validation	Damage Prevention - Instrument Calibration
Valve Maintenance	

In keeping with our QMS maturity journey and expansion of our quality oversight, we also accomplished the following in 2024:

- Performed over 99,000 QC records/as built job package assessments;
- Performed over 8,000 QA assessments (field and records combined);
- Rolled out Human Performance training to the QM team to foster a stronger safety culture;

- Created weekly and monthly dashboards for each functional area to share quality performance and trends related to quality assessments;
- Conducted key audits for process improvement (e.g., As-Builts, Pressure Testing, MPR Process);
- Collaborated with Standards Engineering for procedural update to improve safety and reduce non-conformances (Confined Space);
- Continued support for lone workers with the implementation of the Blackline and Garmin devices;
- Partnered with Field Service and Corrosion to help with training in both the field and classroom.

In 2024, quality performance across Gas continued to be measured in terms of a natural error rate where all non-conformances (regardless of high, medium, or low risk ranking) were equal and the rate was calculated by dividing the number of non-conformances found by the number of items assessed. This approach continues to drive corrective actions for all non-conformances versus only those considered high risk. Over the past few years, high risk non-conformances have been vastly reduced, allowing us to expand our focus. PG&E continues to track high risk findings and the corrective actions required to remedy any non-conformance.

3. SQA FOR DISTRIBUTION AND TRANSMISSION

The SQA organization is responsible for assuring the safety and quality of material provided by PG&E's suppliers. If non-conforming material is purchased to be used in pressurized gas systems it might introduce a safety risk to employees, the public, and to the gas infrastructure. PG&E's SQA group collaborates with engineering, construction, and supply chain to enforce rigorous standards for incoming material and assures that qualified suppliers provide material that meets PG&E's product qualification requirements. SQA has significantly reduced Defective Parts Per Million (DPPM) since 2014. The 2024 DPPM performance was 98 exceeding the target of 260.

SQA's QPR (Quality Performance Rating) metric is proactive monitoring of suppliers' improvement of overall performance including DPPM, responsiveness of suppliers' corrective actions, Quality Management System, and other technical quality parameters that will aid PG&E in reducing risk with more targeted quality efforts. In 2024, three suppliers needing improvement were identified by using the QPR assessment. With support, all three suppliers reached PG&E's acceptable quality level. In 2025, SQA will continue to use QPR as the main quality metric, and QPR has been added to the Executive dashboard.

SQA is driving towards the ultimate goal of having supplied material be defect free. Ninety percent of gas high risk suppliers are ISO certified and SQA was re-certified to ISO 9001:2015 QMS in 2024 and had zero non-conformities for all audits. Through PG&E's cross functional teams and supplier partners,

SQA processed 113 supplier change requests in 2024 and two supplier material recalls. In addition, SQA conducts an annual supplier survey to identify improvement opportunities.

4. RESEARCH DEVELOPMENT AND DEMONSTRATION

The Research Development and Demonstration (RD&D) group brings innovative technologies and solutions from industry, government, and academia to PG&E's Gas functional area.

The work of RD&D and its overall organization, Grid Research, Innovation and Development (GRiD), is prioritized in alignment with PG&E's True North Strategy.²⁸ In late 2024, RD&D identified two themes for AI exploration: (1) increase O&M safety and reliability, and (2) operating a clean fuels system in alignment with the 2024 Research and Development (R&D) Strategy Report,²⁹ which will be considered for implementation in 2025 and beyond.

PG&E collaborates with national and international R&D organizations and works closely with RD&D programs at the California Energy Commission (CEC), PHMSA, the California Air Resources Board (CARB), the federal Department of Energy and multiple universities, mobilizing and leveraging a broad spectrum of expertise to bring innovative solutions to Gas in the most effective way.

In 2024, the RD&D and Innovation team managed and implemented a broad portfolio of nearly 160 projects in collaboration with leading U.S. and overseas utilities, pipeline operators, and R&D organizations. Examples of 2024 achievements include:

- Real-time Detection of Mechanical Impacts through monitoring CP current variation at rectifiers is a cost-effective solution that can be easily integrated into existing CP systems without requiring modification. This technology increases risk awareness by providing real-time detection of the mechanical threats to steel pipelines, allowing operators to respond sooner, thereby reducing risks. The technology will be included in the "Oil and Gas Pipelines: Integrity and Safety Handbook" 2nd Edition, edited by R. Winston Revie. (Figures are provided in this section).
- EMPIT's cutting-edge non-intrusive active magnetometry (Current Magnetometry Inspection (CMI) technology) is capable of pipeline 3D mapping, localizing and categorizing metal losses based on above-ground measurements of magnetic field of the buried pipeline and the associated magnetic field changes of metal loss. This technology enhances the accuracy, efficiency, and reliability of pipeline geolocating under challenging scenarios and is complementary to pipeline corrosion inspection and frequent monitoring at a fraction of the inline inspection cost, ensuring safer operations and reducing environmental impacts. The preliminary analysis of the collected 3D mapping data shows promise and further analysis will be conducted in 2025. The success of this work may provide PG&E a techno-economically

viable low-cost solution for inspection, monitoring and assessment of pipeline integrity under challenging water crossing conditions. (Figures are provided in this section).

- Completion of PRCI Project JEFI-04-11 “Develop Pipeline Industry Consensus Engineering Requirements (CER) for Hydrogen Transmission Pipelines.” The American Society of Mechanical Engineers (ASME) Board of Pressure Technology Codes and Standards approved a plan to relocate the hydrogen pipeline sections of ASME B31.12 Hydrogen Piping and Pipelines to a new exception chapter within ASME B31.8 Gas T&D Piping Systems, reflective of current best practices. In response to ASME's decision, the Pipeline Research Council International (PRCI) Emerging Fuels Institute (EFI) developed this project to create Consensus Engineering Requirements (CERs) for hydrogen pipeline design and reuse, to serve as a starting point for ASME B31.8 Hydrogen Task Group to write the new exception chapter of ASME B31.8. The results of the PRCI project are the newly created CERs, a Nonmandatory Appendix that provides user guidance, and a rationale document that includes justification and supporting information for new requirements. A public version of the report is available. **30**

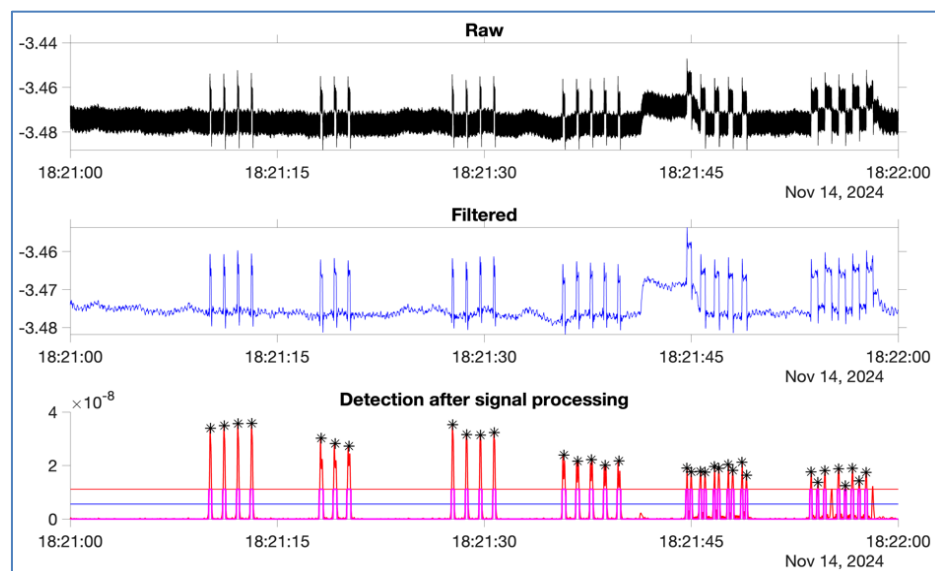


Figure 69 – Schematic of the SPADE Technology in pilot - Real-time detection of excavator impact and illustration of data acquisition and signal processing



Figure 70 – SPADE demonstrating unit installed on PG&E Transmission Pipeline’s Cathodic Protection System network at Dixon in Q4 2024



Figure 71 – EMPIT’s CMI with bathymetry sonar on Autonomous Boat (left); Handheld CMI tool (right)

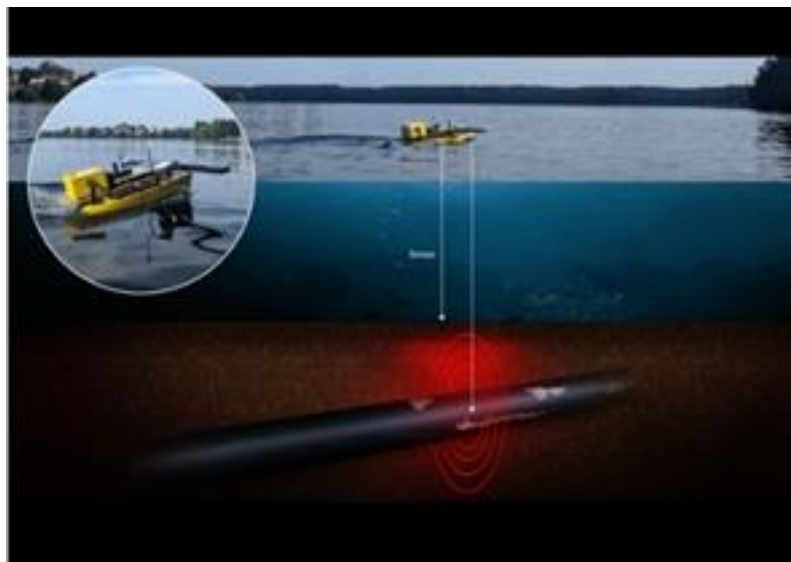


Figure 72 – EMPIT’s Non-intrusive Survey by CMI Autonomous Boat with bathymetry sonar.

5. BENCHMARKING AND BEST PRACTICES

Benchmarking is an important step in PG&E's overall continuous improvement effort and is used to identify industry best practices. Best practices include, but are not limited to, widely recognized natural gas practices that directly enhance public and personnel safety over time. Benchmarking is one component of understanding what may constitute an industry best practice and is accomplished by both formal and informal means. There may also be more than one single industry "best practice" in any given program area. Therefore, PG&E's best practice identification often begins with identifying a published industry standard that provides guidance and sets overall direction for a program or technical discipline. When standards are not readily identifiable, PG&E may employ various methods, such as reaching out to industry associations, experts, and other utilities, to discuss best program approaches, and then develop detailed procedure manuals to document the practices. PG&E relies on various outlets for benchmarking best practices, such as reviewing standards written by SMEs and public agency publications and participating in industry associations. How PG&E utilizes each of these outlets is described in the following sections.

a) INDUSTRY STANDARDS WRITTEN BY SUBJECT MATTER EXPERTS

One informal benchmarking practice that PG&E uses is identification and use of industry standards written and reviewed by SMEs. Sometimes these standards are referred to as "consensus" standards, meaning that the publisher believes that they represent proven practices in that particular field. In addition to seeking best practice standards that originate in the U.S., PG&E identifies international standards for best practices, including European and ISO. PG&E has adopted for use several European standards. In another example, PG&E pursued the certification of ISO 55001, the international asset management standard, and has both achieved and sustained certification.

PG&E relies on associations such as the AGA, ASME, Interstate Natural Gas Association of America (INGAA), Public Service Enterprise Group (PSE&G), and the American Petroleum Institute (API) to facilitate the development of best practices, to prescribe codes and standards for the natural gas industry, to provide forums such as conferences and meetings for like members to learn about relevant best practices, to publish best practice literature, industry reports, and relevant industry statistics, and to provide technical continuing education. Some of PG&E's foundational risk management and gas program activities follow ASME standards and API consensus standards that are referenced in code, such as B31.8S, Managing System Integrity of Pipeline Systems and RP 1162, Public Awareness programs.

b) AGENCY PUBLICATIONS

PG&E reviews relevant agency documents to gain insight into what regulatory and investigation agencies view as best practices. PG&E incorporates input from previous proceedings and reviews, including the CPUC, NTSB, PHMSA, and reviewers contracted by these entities.

As an example, PG&E has a procedure to ensure appropriate responses to PHMSA advisories and any proposed or final rulemaking notices from other regulatory agencies. The procedure expedites reviewing, assigning, and tracking of all Gas T&D related advisory bulletins and proposed or final rulemaking notices from any regulatory agency in a timely manner.

c) PEER ASSOCIATIONS

Benchmarking is performed with a variety of utility and non-utility entities to improve PG&E's understanding of how other companies manage various operational programs, including best practices related to safety. For instance, PG&E personnel learn about best practices from interacting with peers and industry experts in organizations.

PG&E employees participate in and present at a variety of industry conferences. These conferences are gatherings of industry representatives with similar backgrounds to discuss best practices, review emerging practices, share operating information, and build networks for future best practice sharing. Some of the peer-to-peer associations PG&E participates in are described below in more detail. In 2024, PG&E hosted over 100 peers from more than 20 utilities at the first West Coast Utility Best Practices Symposium. Presentation topics included Pipeline Risk Assessment for Geohazards, Damage Prevention, and How the Gas Industry Transitioned to be Safer.

d) AMERICAN GAS ASSOCIATION

As part of PG&E's continuous improvement commitment to safety in Gas, the Company is an active member of the AGA. The AGA helps PG&E share, validate, and learn about gas safety best practices through targeted Operating Committees and Discussion groups with peer organizations. For example, PG&E participates in the AGA Best Practices Program, AGA SOS Survey Program, AGA Leading Indicator Survey, and other safety and occupational hazard survey programs by both distributing and responding to surveys with topic-specific information requests and uses the data provided by other U.S. utility gas companies.

In 2024, PG&E participated as a voting member of AGA, in the AGA-API Joint 1104 Committee that performs all interpretation requests, updates, knowledge transfer, and regulatory support for the API Standard 1104, "Welding of Pipelines and Related Facilities," which is incorporated by reference into the Department of Transportation's federal pipeline safety.

Additionally, PG&E participated in the 2024 AGA Operations Fall Committee Meetings and Workshops in Oklahoma City presenting and discussing topic areas including PHMSA requirements, earthquake response, Quality Management, and Transmission Integrity Management (TIMP) and Distribution Integrity Management (DIMP).

e) INTERSTATE NATURAL GAS ASSOCIATION OF AMERICA (INGAA)

The INGAA and the INGAA Foundation develop consensus guidelines and position papers based on the input of its members. PG&E considers these materials to constitute evidence of natural gas transmission pipeline companies' "best practices," and they are widely recognized in the industry as such. INGAA has a membership base that owns approximately 200,000 miles of natural gas pipeline in North America. PG&E relies on INGAA to facilitate the identification, development and sharing of best practice materials.

f) THE ASSOCIATION FOR MATERIALS PROTECTION AND PERFORMANCE (AMPP)

PG&E relies on AMPP, formerly known as National Association of Corrosion Engineers (NACE), to identify and develop standards, test methods, and material recommendations that are widely regarded as the best in the field for corrosion—specifically for CP and coatings. AMPP creates these materials through the subject matter expertise of its members. AMPP has over 40,000 members in over 130 countries.

g) WESTERN ENERGY INSTITUTE

The Western Energy Institute (WEI) is the premier Western association of energy companies that implements strategic, member-driven forums, identifies critical industry issues, and facilitates dynamic and timely employee development opportunities. WEI provides forums for exchanging timely information on critical industry issues and information about industry best practices and skills training. PG&E also participates on several committees.

h) PUBLIC SERVICE ENTERPRISE GROUP

The PSEG is a publicly traded diversified energy company headquartered in Newark, New Jersey and was established in 1985. The company's largest subsidiary is Public Service Electric and Gas Company (PSE&G).

The Gas and Electric Utility Peer Panel was established in 1993 and is a collaborative effort among member utility companies that focus on sharing benchmark data on an annual basis. PG&E participates in the annual benchmarking study run by PSE&G and gathers valuable cost data. This data is then used in target setting for corresponding performance measures at PG&E.

PSE&G developed the panel of companies for exchanging accurate and meaningful data on key performance metrics.

i) **ADDITIONAL BENCHMARKING EFFORTS**

In addition to participating in numerous associations, PG&E also develops benchmarking by using the expertise brought to the Company by new-hires and contractors with industry experience, by attending trade conferences, and by information sharing with other utilities.

PG&E also uses benchmarking to facilitate continuous improvement. PG&E's participation in annual studies like the AGA Best Practices Program and AGA Employee & Vehicular Safety Information Survey provide benchmarking metrics to understand performance against peers. These studies include yearly special topics as well as repeating metrics that provide year over year trend information.

Industry performance also informs target setting. The following chart lists a few key safety metrics that PG&E benchmarks against other utilities on an annual basis:

Table 32 – Key Benchmarking Metrics	
PG&E's Commitment to Safety	Measurement
Emergency Odor Response	Average response time
First Responder Emergency Response	Average response time
Year-End Grade 2 Leak Backlog	Per 1,000 miles of mains and services
Reportable overpressure events	Number by category
Excavation Damages	Total number by 1 st , 2 nd and 3 rd party.
Year-End Grade 3 Leak Backlog	Per 1,000 miles of mains and services
Cross-bore intrusions found	Number of cross-bore intrusions found in a year

VIII. CONCLUSION

PG&E's 2025 Gas Safety Plan demonstrates PG&E's commitment and progress in implementing processes, programs, and procedures to achieve the stand of keeping everything and everyone always safe. PG&E's True North Strategy sets the tone for the Company to focus on people, the planet, and prosperity. The PSEMS guides how PG&E operates, conducts, and manages all parts of its business by putting the safety of the public, PG&E's customers, and PG&E's employees and contractors at the center of its work. PG&E maintains an asset management system to help address risks by tracking assets and their conditions, understanding the risks involving those assets, and developing and implementing risk reduction strategies with the intent to achieve risk reduction in balance with operational performance and cost. PG&E has made continued progress towards safety but recognizes that there is always more to be done in its journey to Gas Safety Excellence. We will not stop in our pursuit.

IX. ENDNOTES

- 1** In December 2023, the CPUC approved PG&E’s proposal to update definitions of “distribution center,” “transmission line,” and “large-volume customer.” These changes allow for the reclassification of select assets from Transmission to Distribution. PG&E implemented changes in accordance with CPUC D.23-12-003, to include updates of asset records and work plans and the transmission pipe that was reclassified as distribution pipe is included in the miles of distribution main total. In the 2024 Gas Safety Plan, and prior, the number of transmission miles was approximately 6,400, and the number of distribution miles was approximately 44,000.
- 2** See Attachment 01 for a Table of Concordance that provides a mapping between the Pub. Util. Code Sections 961 and 963 and the Gas Safety Plan sections.
- 3** In October 2011, the California legislature signed into law SB 705, which declared “[i]t is the policy of the state that the commission and each gas corporation place safety of the public and gas corporation employees as the top priority.” SB 705 was codified as Pub. Util. Code §§ 961 and 963(b)(3).
- 4** If consistent with the approved transmission definition (see endnote 1), the revised amount of transmission mileage has increased the piggable miles from 50.54% to 58.08%. If we use the previously defined transmission pipeline miles the piggable miles would have increased from 50.54% to 51.11% in 2024.
- 5** This number of strength tested miles is inclusive of uprates, Facility Integrity Management Program strength tested miles, and class location strength tests.
- 6** An employee-led team that promotes safe work habits, shares information and best practices, promotes open and honest communications, and finds innovative methods to perform work safely.
- 7** This system was designed based on the elements of Process Safety developed by the Center for Chemical Process Safety, a branch of the American Institute of Chemical Engineers.
- 8** API RP 754 identifies leading and lagging indicators for nationwide public reporting, as well as indicators for use at individual facilities including methods for the development and use of performance indicators. This comprehensive leading and lagging indicators program provides useful information for driving improvement, and when acted upon contributes to reducing risks of major hazards (e.g., by identifying the underlying causes and taking action to prevent recurrence). The indicators are divided into four tiers that represent a leading and lagging continuum.
- 9** PG&E submits the Risk Spend Accountability Report annually every April in accordance with D.19-04-020.
- 10** API RP 1170, Design and Operation of Solution-mined Salt Caverns Used for Natural Gas Storage. API RP 1170 provides functional recommendations and covers facility geomechanical assessments, cavern well design and drilling, solution mining techniques & operations, including monitoring, and maintenance practices.
- 11** API RP 1171, Functional Integrity of Natural Gas Storage in Depleted Hydrocarbon Reservoirs and Aquifer Reservoirs. API RP 1171 recommends that operators manage integrity through monitoring, maintenance and remediation practices and applies specific integrity assessments on a case-by-case basis.
- 12** After several iterations, the most recent proposal was submitted for CalGEM review and approval on January 19, 2024.

- 13 The compressor at the Pleasant Creek storage facility has been isolated from the storage field. A Commission decision is pending on the sale of the facility.
- 14 The Transmission Pipe asset family includes valves and fittings outside of station boundaries and not otherwise included in the M&C asset family, which are those valves defined in TD-4551S – Station Critical Documentation. An example of valves included in the Transmission Pipe asset family includes manually operated mainline valves.
- 15 As set forth in 49 CFR Part 192, Subpart O.
- 16 Executive forums include the Executive Leadership Team meeting (the Chief Executive Officer (CEO) and her direct reports), the Senior Leadership Team meeting (the CEO, her direct reports, and their direct reports) and the Run the Business meeting (all PG&E officers).
- 17 The 2020 RAMP report reflected PG&E’s first implementation of the methodologies adopted in the S-MAP Settlement Decision (D.18-12-014) which is the basis of the phase II OIR.
- 18 49 CFR §192.614.
- 19 California Government Code §4216.
- 20 The term cross-bore is broadly defined as an intersection of an existing underground utility or underground structure by a second utility resulting in direct contact between the transactions of the utilities. The cross bore can compromise the integrity of either utility or underground structure. Examples include gas, telecom, water, storm, and sewer among others.
- 21 Identified mileage does not include girth welds or branch connections. Additionally, it does not include the miles of pipe that would be necessary when pipe replacements are rolled into engineered projects.
- 22 This program does not address the threats posed when natural gas pipelines that cross active earthquake faults. Please refer to PG&E’s *Earthquake Fault Crossing Program* in Section IV.5.i.
- 23 Tensile stress is when equal and opposite forces are applied on a body, in this case a pipeline.
- 24 215 deaths related to the February 2021 winter storm in Texas were caused by extreme cold exposure, exacerbation of pre-existing illness, carbon monoxide exposure, or fire.
- 25 PG&E’s California Gas Transmission Pipe Ranger website Supply and Demand Archives, <https://www.pge.com/pipeline/en/operating-data/historical-archives/cgt-supplydemand-search.html>. Enter a start date of “12/31/2024” and end date of “01/01/2024,” download Excel file, and add values listed in “Total System Supply” row.
- 26 PG&E’s California Gas Transmission Pipe Ranger website – OFO/EFO Historical Archives <https://www.pge.com/pipeline/en/operating-data/historical-archives/ofo-archive.html> (Year 2024)
- 27 The GERP complies with CFR Title 49, Transportation, Part 192—Transportation of Natural and other Gas by Pipeline: Minimum Federal Safety Standards, Section (§) 192.615, “Emergency plans.” and (§)192.605 “Procedural manual for operations, maintenance, and emergencies.”
- 28 [True North Strategy](#)
- 29 [2024 Research and Development \(R&D\) Strategy Report](#)
- 30 [PR337-23115-R01 Consensus Engineering Requirements for Pipelines in Hydrogen and Hydrogen Blend Service](#)

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Attachment 3 – Change Log for 2025 Gas Safety Plan

PACIFIC GAS AND ELECTRIC COMPANY
ATTACHMENT 1
TABLE OF CONCORDANCE

2025 Gas Safety Plan Table of Concordance

PG&E provides this Table of Concordance to demonstrate the Gas Safety Plan compliance with the Public Utility Code (PUC) Sections 961 and 963 (b)(3):

PUC Section	Section Location(s) in Gas Safety Plan
961 (a): For purposes of this section, “gas corporation workforce” means the employees of a gas corporation and employees of an independent contractor of the gas corporation while working under contract with the gas corporation.	V. Workforce
961 (b) (1): Each gas corporation shall develop a plan for the safe and reliable operation of its commission-regulated gas pipeline facility that implements the policy of paragraph (3) of subdivision (b) of Section 963, subject to approval, modification, and adequate funding by the commission.	The 2025 Gas Safety Plan is submitted as required by this section.
961 (b) (2): By December 31, 2012, the commission shall review and accept, modify, or reject the plan for each gas corporation as part of a proceeding that includes a hearing. The commission shall build into any approved plan sufficient flexibility to redirect activities to respond to safety requirements.	Not applicable to PG&E.
961 (b) (3): Each gas corporation shall implement its approved plan.	The 2025 Gas Safety Plan provides a view into the safety activities PG&E pursues every day and highlights the specific safety work performed in 2024.
961 (b) (4): The commission shall require each gas corporation to periodically review and update the plan, and the commission shall review and accept, modify, or reject an updated plan at regular intervals thereafter. The commission, pursuant to Section 1701.1, shall determine whether a proceeding on a proposed update to a plan requires a hearing, consistent with subdivision (e).	PG&E reviews and updates its Gas Safety Plan on an annual basis. See I. Introduction.

PUC Section	Section Location(s) in Gas Safety Plan
961 (c): The plan developed, approved, and implemented pursuant to subdivision (b) shall be consistent with best practices in the gas industry and with federal pipeline safety statutes as set forth in Chapter 601 (commencing with Section 60101) of Subtitle VIII of Title 49 of the United States Code and the regulations adopted by the United States Department of Transportation pursuant to those statutes.	References to programs that comply with federal pipeline safety statutes and/or conform to industry best practices are referenced throughout the document as applicable.
961 (d): The plan developed, approved, and implemented pursuant to subdivision (b) shall set forth how the gas corporation will implement the policy established in paragraph (3) of subdivision (b) of Section 963 and achieve each of the following:	
961 (d) (1): Identify and minimize hazards and systemic risks in order to minimize accidents, explosions, fires, and dangerous conditions, and protect the public and the gas corporation workforce.	I. 5 Workforce Safety I. 6. Rewarding Safety Excellence II. Safety Culture II. 1. a. Corrective Action Program II. 2. PG&E Company and Gas Safety Committees II. 2. b. Gas Grassroots Safety Teams III. Process Safety IV. 2. d. Measurement and Control (M&C) IV. 3. Risk Management Process IV. 5. a. Damage Prevention IV. 5. g. In-Line Inspection IV. 5. h. Corrosion Control IV. 5. j. Leak Survey

PUC Section	Section Location(s) in Gas Safety Plan
	IV. 5. k. Leak Repair IV. 5. l. Overpressure Elimination Initiative IV. 7. Mitigating the Risk of Inadequate Response and Recovery IV. 7. c. Security IV. 7. d. Valve Automation V. Workforce
961 (d) (2): Identify the safety-related systems that will be deployed to minimize hazards, including adequate documentation of the commission-regulated gas pipeline facility history and capability.	IV. 4. Records and Information Management IV. 5. e. Strength Testing VI. Compliance Framework VII. 2. Quality Management
961 (d) (3): Provide adequate storage and transportation capacity to reliably and safely deliver gas to all customers consistent with rules authorized by the commission governing core and noncore reliability and curtailment, including provisions for expansion, replacement, preventive maintenance, and reactive maintenance and repair of its commission-regulated gas pipeline facility.	IV. 2. a. Gas Storage IV. 2. c. Transmission Pipe IV. 2. d. Measurement and Control (M&C) IV. 2. e. Distribution Mains and Services IV. 2. f. Customer Connected Equipment IV. 2. g. Liquefied Natural Gas and Compressed Natural Gas IV. 5. Mitigating the Risk of Loss of Containment IV. 6. Mitigating the Risk of Loss of Supply IV. 7. a. Gas Systems Operations and Control VII. 2. Quality Management

PUC Section	Section Location(s) in Gas Safety Plan
<p>961 (d) (4): Provide for effective patrol and inspection of the commission-regulated gas pipeline facility to detect leaks and other compromised facility conditions and to effect timely repairs.</p>	<p>IV. 5. a. Damage Prevention</p> <p>IV. 5. d. Cross-Bore Mitigation</p> <p>IV. 5. e. Strength Testing</p> <p>IV. 5. g. In-Line Inspection</p> <p>IV. 5. j. Leak Survey</p> <p>IV. 5. k. Leak Repair</p> <p>IV. 7. a. Gas System Operations and Control</p> <p>VI. 4. Supportive Controls</p>
<p>961 (d) (5): Provide for appropriate and effective system controls, with respect to both equipment and personnel procedures, to limit the damage from accidents, explosions, fires, and dangerous conditions.</p>	<p>II. 1. c. Material Problem Reporting</p> <p>III. Process Safety</p> <p>IV. 2. f. Customer Connected Equipment</p> <p>IV. 2. g. Liquefied Natural Gas and Compressed Natural Gas</p> <p>IV. 5. I. Overpressure Elimination Initiative</p> <p>IV. 7. Mitigating the Risk of Inadequate Response and Recovery</p> <p>IV. 7. a. Gas System Operations and Control</p> <p>IV. 7. c. Security</p> <p>IV. 7. d. Valve Automation</p> <p>IV. 7. e. Emergency Preparedness and Response</p> <p>V. 3. Workforce Training</p> <p>V. 4. Gas Operator Qualifications</p>

PUC Section	Section Location(s) in Gas Safety Plan
	V. 5. Contractor Safety and Oversight VI. 4. Supportive Controls VII. 5. Benchmarking and Best Practices
<p>961 (d) (6): Provide timely response to customer and employee reports of leaks and other hazardous conditions and emergency events, including disconnection, reconnection, and pilot-lighting procedures.</p>	I. 4. Public Safety IV. 5. k. Leak Repair IV. 7. a. Gas Systems Operations and Control IV. 7. d. Valve Automation IV. 7. e. Emergency Preparedness and Response
<p>961 (d) (7): Include appropriate protocols for determining maximum allowable operating pressures on relevant pipeline segments, including all necessary documentation affecting the calculation of maximum allowable operating pressures.</p>	IV. 5. e. Strength Testing IV. 5. l. Overpressure Elimination Initiative IV. 7. a. Gas System Operations and Control IV. 7. b. Clearance Operations
<p>961 (d) (8): Prepare for, or minimize damage from, and respond to, earthquakes and other major events.</p>	IV. 5. i. Earthquake Fault Crossings IV. 7. e. Emergency Preparedness and Response
<p>961 (d) (9): Meet or exceed the minimum standards for safe design, construction, installation, operation, and maintenance of gas transmission and distribution facilities prescribed by regulations issued by the United States Department of Transportation in Part 192 (commencing with Section 192.1) of Title 49 of the Code of Federal Regulations.</p>	III. Process Safety IV. 1. Asset Management System IV. 5. Mitigating the Risk of Loss of Containment
<p>961 (d) (10): Ensure an adequately sized, qualified, and properly trained gas corporation workforce to carry out the plan.</p>	V. Workforce

PUC Section	Section Location(s) in Gas Safety Plan
961 (d) (11): Any additional matter that the commission determines should be included in the plan.	PG&E is not aware of any additional matters the commission has requested be included.
961 (e): The commission and gas corporation shall provide opportunities for meaningful, substantial, and ongoing participation by the gas corporation workforce in the development and implementation of the plan, with the objective of developing an industrywide culture of safety that will minimize accidents, explosions, fires, and dangerous conditions for the protection of the public and the gas corporation workforce.	<p>II. Safety Culture</p> <p>V. 3. Workforce Training</p> <p>V. 6. Partnership with Labor Unions</p> <p>VII. 4. Research Development and Demonstration</p> <p>VII. 5. Benchmarking and Best Practices</p>
961 (f): Nothing in this section limits the obligation of a gas corporation to provide adequate service and facilities for the convenience of the public and its employees pursuant to Section 451 or the authority of the commission to enforce that obligation under state law.	Not applicable.
963 (b) (3): It is the policy of the state that the commission and each gas corporation place safety of the public and gas corporation employees as the top priority. The commission shall take all reasonable and appropriate actions necessary to carry out the safety priority policy of this paragraph consistent with the principle of just and reasonable cost-based rates.	The contents of PG&E's Gas Safety Plan provide a view into the safety activities PG&E pursues every day and highlights the specific safety work performed in 2024. This Plan explains how PG&E puts the safety of the public, customers, employees and contractors first, and how the Company has made safety investments in processes and infrastructure that are consistent with best practices in the gas industry.

PACIFIC GAS AND ELECTRIC COMPANY
ATTACHMENT 2
CHANGE LOGS FOR PG&E'S ASSET MANAGEMENT PLANS,
COMPANY EMERGENCY RESPONSE PLAN, AND GAS
EMERGENCY RESPONSE PLAN



Gas Guidance Document Analysis (GDA)

Strategic Asset Management Plan

GP-1100, Rev. 11

Document Type	Gas Plan
Workflow	Major Revision

1. Why Is the Document Being Written / Revised?

The Pacific Gas and Electric Company (PG&E or Company) Gas organization Gas Plan GP-1100, "Strategic Asset Management Plan," is being updated per the annual review process by PG&E Asset Management Principals and associated leadership stakeholders.

2. What Is the Topic (if new) or What Is Changing (if revised)?

This revision includes the following key changes (see Appendix A, "Change Log," in the document for additional details on these changes):

- PSEMS transition including reference to PSEMS policy and manual.
- Updated language to reflect PG&E's True North Strategy.
- Updated Roles and Responsibilities to be consistent with the current management structure and aligned responsibilities where appropriate, including new VP of Gas Engineering.
- Added PSEMS documents into RACI and updated responsibilities.
- General annual updates.

3. Major New Risks or Changes to Existing Mitigated Risks (such as Process Safety risks)

NA



Gas Guidance Document Analysis (GDA)

Strategic Asset Management Plan

GP-1100, Rev. 11

4. Stakeholders

Table 1. Technical Stakeholder Reviewers (required to be considered)

Department / Work Center	Title (and Role if applicable)	Name (or reason if NA)	Review Date
Transmission Integrity Management	Asset Management, Principal, Document Steward	[REDACTED]	06/2024
Standards Engineering	Principal Engineer, Document Coordinator	[REDACTED]	07/2024
Gas Transmission	Director, Gas Reservoir Engineering, Document Coordinator	[REDACTED]	06/2024
Standards Engineering	Principal Engineer, Lead Engineer	[REDACTED]	07/2024
Gas Engineering	Vice President, Document Approver	Austin Hastings (AAH7)	07/2024
Process Safety	NA – No changes to step-by-step field instructions		
Quality Management	NA – No associated quality assessments		
Operator Qualification	NA – No associated qualifications		
Technology Solutions	NA – No technology or electronic form changes required (Pronto, SAP)		
Regulatory Compliance	NA – No governing federal or state pipeline regulations		
PG&E Academy	NA – No associated Academy training		
As-Built Records	NA – Does not affect as-built documents		
Integrity Management (DIMP, FIMP, TIMP)	Senior Director, Gas Integrity Management	[REDACTED]	06/2024
	Principal Asset Management Specialist (TIMP)	[REDACTED]	06/2024
	Principal Asset Management Specialist (DIMP)	[REDACTED]	06/2024
	Principal Asset Management Specialist (FIMP)	[REDACTED]	06/2024
	Principal Business Operations Specialist (Gas Facilities & Storage Engineering)	[REDACTED]	06/2024
	Contractor (CNG/LNG)	[REDACTED]	06/2024

Table 2. Target Audience Usability Review (stakeholders that may review)

Department / Work Center	Title	Name	Review Date
Gas Safety Excellence	Manager, Program Management	[REDACTED]	06/2024
Regulatory Compliance & Reporting	Senior Manager, Compliance and Risk	[REDACTED]	07/2024



Gas Guidance Document Analysis (GDA)

Strategic Asset Management Plan

GP-1100, Rev. 11

5. Electronic Document Routing System (EDRS) Reviewers and Approvers

Approvers: [REDACTED]

EDRS Routing Number: 2024-28156

6. Cost Information

NA

7. Schedule Information

Effective Date: 07/18/2024

For the communication plan, see Appendix G, "Gas Operations SAMP and AMPs Communication Plan Summary," in the document.

8. Review Frequency

Updated as needed annually, or as special circumstances arise. (Not part of O&M manuals, not CFR requirement)

9. Cancellations

NA

10. Manuals

☒ No Change to Manuals



Gas Guidance Document Analysis (GDA)

Strategic Asset Management Plan

GP-1100, Rev. 11

11. Document Properties

Functional Area

☒ No Change to Functional Area

<input checked="" type="checkbox"/> CNG-LNG	<input checked="" type="checkbox"/> Compression and Processing	<input checked="" type="checkbox"/> Customer Connected Equipment	<input checked="" type="checkbox"/> Distribution Mains
<input checked="" type="checkbox"/> Distribution Services	<input checked="" type="checkbox"/> Measurement and Control	<input checked="" type="checkbox"/> Storage	<input checked="" type="checkbox"/> Transmission Pipe

Target Audiences

☒ No Change to Target Audiences

<input checked="" type="checkbox"/> Asset Strategy	<input checked="" type="checkbox"/> Facility Integrity Management	<input type="checkbox"/> Leak Repair	<input type="checkbox"/> R&D and Innovation
<input type="checkbox"/> Associate Distribution Engineers	<input checked="" type="checkbox"/> GPOM (I&R)	<input type="checkbox"/> Leak Survey	<input type="checkbox"/> Records and Information Management
<input checked="" type="checkbox"/> Compliance and Risk	<input type="checkbox"/> Gas Control Strategy and Support	<input type="checkbox"/> Locate and Mark	<input checked="" type="checkbox"/> Regulatory Compliance
<input type="checkbox"/> Contract Management	<input type="checkbox"/> Gas Distribution Control Center	<input type="checkbox"/> Mapping (Transmission and Distribution)	<input checked="" type="checkbox"/> Risk Management
<input type="checkbox"/> Corrosion Mechanics	<input type="checkbox"/> Gas Emergency Preparedness	<input type="checkbox"/> Metering Plant	<input type="checkbox"/> Service Planning
<input type="checkbox"/> Corrosion Services	<input checked="" type="checkbox"/> Gas Operations Leadership	<input type="checkbox"/> Picarro	<input type="checkbox"/> Sourcing
<input type="checkbox"/> Data Quality	<input type="checkbox"/> Gas Service Representatives	<input type="checkbox"/> Pipeline Engineering	<input type="checkbox"/> Super Gas Ops
<input type="checkbox"/> Dispatch and Scheduling	<input type="checkbox"/> Gas Transmission Control Center	<input type="checkbox"/> Pipeline Safety Enhancement Plan Engineering	<input type="checkbox"/> System Planning
<input type="checkbox"/> Distribution Construction	<input type="checkbox"/> General Construction	<input type="checkbox"/> Program Management (Transmission and Distribution)	<input type="checkbox"/> Technology and Tools
<input type="checkbox"/> Distribution Engineering	<input type="checkbox"/> Hydrotesting	<input type="checkbox"/> Project Management (Transmission and Distribution)	<input type="checkbox"/> Transmission Construction
<input checked="" type="checkbox"/> Distribution Integrity Management	<input checked="" type="checkbox"/> Investment Planning	<input type="checkbox"/> Qualifications	<input checked="" type="checkbox"/> Transmission Engineering
<input type="checkbox"/> Estimating	<input checked="" type="checkbox"/> LNG/CNG Operations	<input type="checkbox"/> Quality and Improvement	<input checked="" type="checkbox"/> Transmission Integrity Management

Business Processes (GODOCS)

☒ No Change to Business Processes

CONSTRUCTION	ENGINEERING	MAINTENANCE & OPERATIONS	EMERGENCY / ADMIN
<input type="checkbox"/> As-Built	<input type="checkbox"/> Applicant Design Manual	<input type="checkbox"/> Corrosion Control	<input type="checkbox"/> Dispatch and Scheduling
<input type="checkbox"/> Coatings	<input type="checkbox"/> Asset Knowledge Management	<input type="checkbox"/> Damage Prevention (indicate subtype) ¹	<input type="checkbox"/> Emergency Plans
<input type="checkbox"/> Construction Methods	<input type="checkbox"/> Distribution Engineering	<input type="checkbox"/> Field Services (GSRs)	<input type="checkbox"/> Gas Guidance Document Process
<input type="checkbox"/> Environmental and Safety	<input checked="" type="checkbox"/> Engineering for Integrity Management	<input type="checkbox"/> Gas Control and Clearances	<input type="checkbox"/> Gas Operations Quality Management
<input type="checkbox"/> Excavation	<input type="checkbox"/> Engineering Material Specifications	<input type="checkbox"/> Integrity Management (IM)	<input checked="" type="checkbox"/> Gas Safety Excellence
<input type="checkbox"/> Gas Design Standards for Construction	<input type="checkbox"/> Gas Design Standards	<input type="checkbox"/> Leak Survey and Response	<input type="checkbox"/> Operator Qualifications (OQ)
<input type="checkbox"/> Inspection and Operation	<input checked="" type="checkbox"/> Process Safety	<input type="checkbox"/> Major Stations	
<input type="checkbox"/> Plastic	<input type="checkbox"/> System Planning	<input type="checkbox"/> Measurement and Regulation (M&R)	
<input type="checkbox"/> Steel Pressure Control	<input checked="" type="checkbox"/> Transmission Engineering	<input type="checkbox"/> Steel Pipeline Maintenance and Repair	
<input type="checkbox"/> Strength Testing and Commissioning		<input type="checkbox"/> Valve Maintenance	
<input type="checkbox"/> Welding and Nondestructive Examination (NDE)			

1. Damage Prevention subtypes: Locate and Mark, Patrolling, Public Awareness



Gas Guidance Document Analysis (GDA)

Transmission Pipe Asset Management Plan

GP-1101, Rev. 11

Document Type	Gas Plan
Workflow	Major Revision

1. What Is Changing and Why?

The “Transmission Pipe Asset Management Plan” is being updated per the annual review process by PG&E Asset Management Principals and associated leadership stakeholders.

This major revision includes the key changes listed below. See Appendix F, “Change Log,” within the document for additional details on the changes:

- Provided an annual update to the content, statistics, tables, and figures throughout the plan.
- Updated the strategic objectives key metrics, and long-term goals.

2. Major New Risks or Changes to Existing Mitigated Risks (such as Process Safety risks)

NA

3. Stakeholders

Table 1. Technical Stakeholder Reviewers (required to be considered)

Department / Work Center	Title (and Role if applicable)	Name (LAN ID) (or reason if NA)	Date Reviewed
Transmission Integrity Management Program (TIMP)	Principal, Document Steward	[REDACTED]	07/2024
Standards Engineering	Principal Engineer, Document Coordinator	[REDACTED]	07/2024
Standards Engineering	Principal Engineer, Lead Engineer	[REDACTED]	08/2024
Gas Transmission Engineering	Senior Director, Document Approver	[REDACTED]	07/2024
Process Safety Process-safety@pge.com	NA – No changes to step-by-step field instructions		
Quality Management	NA – No associated quality assessments		
Operator Qualification	NA – No associated qualifications		
Technology Solutions	NA – No technology or electronic form changes required (Pronto, SAP)		
Regulatory Compliance GasOpsSPRegulatoryCompliance@pge.com	NA – No governing federal or state pipeline regulations. No significant changes to TIMP program requiring Reg. Compliance review for notification purposes.		
PG&E Academy	NA – No associated Academy training		
As-Built Records	NA – Does not affect as-built documents		
Integrity Management (DIMP, FIMP, TIMP)	NA – Does not introduce a new part or change an existing part's specifications; change the installation, operation, maintenance, or removal process of any portion of an asset; change test requirements for any assets; or change data gathering or forms		



Gas Guidance Document Analysis (GDA)

Transmission Pipe Asset Management Plan

GP-1101, Rev. 11

Table 2. Target Audience Usability Review (stakeholders that may review)

Department / Work Center	Title	Name (LAN ID)	Date Provided	Gave Input?
Gas Safety Excellence	Manager	[REDACTED]	05/2024	no

4. Electronic Document Routing System (EDRS) Reviewers and Approvers

Approvers: [REDACTED]

EDRS Routing Number: 2024-41621

5. Cost Information

NA

6. Schedule Information

Effective Date: 10/17/2024

GP-1101 will be implemented per Appendix G in GP-1100, "Strategic Asset Management Plan (SAMP) - Gas Operations SAMP and AMPs Communication Plan Summary," via the GTE Newsletter and Transmission Pipe asset family-specific employee meetings.

7. Review Frequency

☒ No Change to Review Frequency

8. Cancellations

NA

9. Manuals

☒ No Change to Manuals



Gas Guidance Document Analysis (GDA)

Transmission Pipe Asset Management Plan

GP-1101, Rev. 11

10. Document Properties

Functional Area

<input type="checkbox"/> CNG-LNG	<input type="checkbox"/> Compression and Processing	<input type="checkbox"/> Customer Connected Equipment	<input type="checkbox"/> Distribution Mains
<input type="checkbox"/> Distribution Services	<input type="checkbox"/> Measurement and Control	<input type="checkbox"/> Storage	<input checked="" type="checkbox"/> Transmission Pipe

Target Audiences

<input checked="" type="checkbox"/> Asset Strategy	<input type="checkbox"/> Facility Integrity Management	<input type="checkbox"/> Leak Repair	<input checked="" type="checkbox"/> R&D
<input type="checkbox"/> Associate Distribution Engineers	<input type="checkbox"/> GPOM (I&R)	<input type="checkbox"/> Leak Survey	<input type="checkbox"/> Records and Information Management
<input checked="" type="checkbox"/> Compliance and Risk	<input type="checkbox"/> Gas Control Strategy and Support	<input type="checkbox"/> Locate and Mark	<input type="checkbox"/> Regulatory Compliance
<input type="checkbox"/> Contract Management	<input type="checkbox"/> Gas Distribution Control Center	<input type="checkbox"/> Mapping (Transmission and Distribution)	<input checked="" type="checkbox"/> Risk Management
<input type="checkbox"/> Corrosion Mechanics	<input type="checkbox"/> Gas Emergency Preparedness	<input type="checkbox"/> Metering Plant	<input type="checkbox"/> Service Planning
<input type="checkbox"/> Corrosion Services	<input type="checkbox"/> Gas Operations Leadership	<input type="checkbox"/> Picarro	<input type="checkbox"/> Sourcing
<input type="checkbox"/> Data Quality	<input type="checkbox"/> Gas Service Representatives	<input checked="" type="checkbox"/> Pipeline Engineering	<input type="checkbox"/> Super Gas Ops
<input type="checkbox"/> Dispatch and Scheduling	<input type="checkbox"/> Gas Transmission Control Center	<input type="checkbox"/> Pipeline Safety Enhancement Plan Engineering	<input type="checkbox"/> System Planning
<input type="checkbox"/> Distribution Construction	<input type="checkbox"/> General Construction	<input checked="" type="checkbox"/> Program Management (Transmission and Distribution)	<input type="checkbox"/> Technology and Tools
<input type="checkbox"/> Distribution Engineering	<input type="checkbox"/> Hydrotesting	<input type="checkbox"/> Project Management (Transmission and Distribution)	<input type="checkbox"/> Transmission Construction
<input type="checkbox"/> Distribution Integrity Management	<input type="checkbox"/> Investment Planning	<input type="checkbox"/> Qualifications	<input checked="" type="checkbox"/> Transmission Engineering
<input type="checkbox"/> Estimating	<input type="checkbox"/> LNG/CNG Operations	<input type="checkbox"/> Quality and Improvement	<input checked="" type="checkbox"/> Transmission Integrity Management

Business Processes (GODOCS)

CONSTRUCTION	ENGINEERING	MAINTENANCE & OPERATIONS	EMERGENCY / ADMIN
<input type="checkbox"/> As-Built	<input type="checkbox"/> Applicant Design Manual	<input type="checkbox"/> Corrosion Control	<input type="checkbox"/> Dispatch and Scheduling
<input type="checkbox"/> Coatings	<input type="checkbox"/> Asset Knowledge Management	<input type="checkbox"/> Damage Prevention (indicate subtype) ¹	<input type="checkbox"/> Emergency Plans
<input type="checkbox"/> Construction Methods	<input type="checkbox"/> Distribution Engineering	<input type="checkbox"/> Field Services (GSRs)	<input type="checkbox"/> Gas Guidance Document Process
<input type="checkbox"/> Environmental and Safety	<input checked="" type="checkbox"/> Engineering for Integrity Management	<input type="checkbox"/> Gas Control and Clearances	<input type="checkbox"/> Gas Operations Quality Management
<input type="checkbox"/> Excavation	<input type="checkbox"/> Engineering Material Specifications	<input checked="" type="checkbox"/> Integrity Management (IM)	<input checked="" type="checkbox"/> Gas Safety Excellence
<input type="checkbox"/> Gas Design Standards for Construction	<input type="checkbox"/> Gas Design Standards	<input type="checkbox"/> Leak Survey and Response	<input type="checkbox"/> Operator Qualifications (OQ)
<input type="checkbox"/> Inspection and Operation	<input checked="" type="checkbox"/> Process Safety	<input type="checkbox"/> Major Stations	
<input type="checkbox"/> Plastic	<input type="checkbox"/> System Planning	<input type="checkbox"/> Measurement and Regulation (M&R)	
<input type="checkbox"/> Steel Pressure Control	<input checked="" type="checkbox"/> Transmission Engineering	<input type="checkbox"/> Steel Pipeline Maintenance and Repair	
<input type="checkbox"/> Strength Testing and Commissioning		<input type="checkbox"/> Valve Maintenance	
<input type="checkbox"/> Welding and Nondestructive Examination (NDE)			

1. Damage Prevention subtypes: Locate and Mark, Patrolling, Public Awareness



Gas Guidance Document Analysis (GDA)

Gas Distribution Mains and Services Asset Management Plan

GP-1102, Rev. 11

Document Type	Gas Plan
Workflow	Major Revision

1. What is Changing and Why?

See Appendix F, "Change Log," and Table 16, "Asset Management Plan Change Log," for all changes implemented. Key changes include:

- Updated all tables and figures to reflect most current data available.
- Added strategic objectives 12 to 16 for corrosion.

2. Major New Risks or Changes to Existing Mitigated Risks (such as Process Safety risks)

NA

3. Stakeholders

Table 1. Technical Stakeholder Reviewers (required to be considered)

Department / Work Center	Title (and Role if applicable)	Name (LAN ID) (or reason if NA)	Date Reviewed
Distribution Integrity Management Program (DIMP)	Principal Asset Family, Document Steward	[REDACTED]	06/17/2024
Standards Engineering	Senior Gas Engineer, Document Coordinator	[REDACTED]	07/08/2024
Standards Engineering	Principal Gas Engineer, Lead Engineer	[REDACTED]	09/04/2024
DIMP	Director, Document Approver	[REDACTED]	08/30/2024
Process Safety Process-safety@pge.com	NA – No changes to step-by-step field instructions		
Quality Management	NA – No associated quality assessments		
Operator Qualification	NA – No associated qualifications		
Technology Solutions	NA – No technology or electronic form changes required (Pronto, SAP)		
Regulatory Compliance GasOpsSPRegulatoryCompliance@pge.com	NA – No governing federal or state pipeline regulations.		
PG&E Academy	NA – No associated Academy training		
As-Built Records	NA – Does not affect as-built documents		
Integrity Management (DIMP, FIMP, TIMP)	NA – Does not introduce a new part or change an existing part's specifications; change the installation, operation, maintenance, or removal process of any portion of an asset; change test requirements for any assets; or change data gathering or forms		
Gas Corrosion Engineering	Senior Manager	[REDACTED]	02/2024 ¹
Gas Distribution Operations Region 3	Senior Director	[REDACTED]	02/2024 ¹
Corrosion Maintenance	Process Manager	[REDACTED]	02/2024 ¹
Gas Corrosion Engineering	Principal Corrosion Engineer	[REDACTED]	02/2024 ¹

¹ Reviewed strategic objectives 12–16 before objectives were approved by the Risk and Compliance Committee (RCC) on 02/22/2024.



Gas Guidance Document Analysis (GDA)

Gas Distribution Mains and Services Asset Management Plan

GP-1102, Rev. 11

4. Electronic Document Routing System (EDRS) Reviewers and Approvers

Approvers: [REDACTED]

EDRS Routing Number: 2024-34689

5. Cost Information

N/A

6. Schedule Information

Effective Date: 09/18/2024

Gas Plan GP-1102 will be implemented per GP-1100, "Strategic Asset Management Plan," Appendix G, "Gas Operations SAMP and AMPs Communication Plan Summary."

7. Review Frequency

☒ No Change to Review Frequency

8. Cancellations

N/A

9. Manuals

☒ No Change to Manuals

10. Document Properties

Functional Area

<input type="checkbox"/> CNG-LNG	<input type="checkbox"/> Compression and Processing	<input type="checkbox"/> Customer Connected Equipment	<input checked="" type="checkbox"/> Distribution Mains
<input checked="" type="checkbox"/> Distribution Services	<input type="checkbox"/> Measurement and Control	<input type="checkbox"/> Storage	<input type="checkbox"/> Transmission Pipe

Target Audiences

<input checked="" type="checkbox"/> Asset Strategy	<input type="checkbox"/> Facility Integrity Management	<input type="checkbox"/> Leak Repair	<input checked="" type="checkbox"/> R&D and Innovation
<input checked="" type="checkbox"/> Associate Distribution Engineers	<input type="checkbox"/> GPOM (I&R)	<input type="checkbox"/> Leak Survey	<input type="checkbox"/> Records and Information Management
<input checked="" type="checkbox"/> Compliance and Risk	<input type="checkbox"/> Gas Control Strategy and Support	<input type="checkbox"/> Locate and Mark	<input type="checkbox"/> Regulatory Compliance
<input checked="" type="checkbox"/> Contract Management	<input checked="" type="checkbox"/> Gas Distribution Control Center	<input type="checkbox"/> Mapping (Transmission and Distribution)	<input checked="" type="checkbox"/> Risk Management
<input checked="" type="checkbox"/> Corrosion Mechanics	<input checked="" type="checkbox"/> Gas Emergency Preparedness	<input type="checkbox"/> Metering Plant	<input type="checkbox"/> Service Planning
<input checked="" type="checkbox"/> Corrosion Services	<input checked="" type="checkbox"/> Gas Operations Leadership	<input type="checkbox"/> Picarro	<input type="checkbox"/> Sourcing
<input checked="" type="checkbox"/> Data Quality	<input type="checkbox"/> Gas Service Representatives	<input type="checkbox"/> Pipeline Engineering	<input type="checkbox"/> Super Gas Ops
<input type="checkbox"/> Dispatch and Scheduling	<input type="checkbox"/> Gas Transmission Control Center	<input type="checkbox"/> Pipeline Safety Enhancement Plan Engineering	<input type="checkbox"/> System Planning
<input checked="" type="checkbox"/> Distribution Construction	<input type="checkbox"/> General Construction	<input checked="" type="checkbox"/> Program Management (Transmission and Distribution)	<input type="checkbox"/> Technology and Tools
<input checked="" type="checkbox"/> Distribution Engineering	<input type="checkbox"/> Hydrotesting	<input checked="" type="checkbox"/> Project Management (Transmission and Distribution)	<input type="checkbox"/> Transmission Construction
<input checked="" type="checkbox"/> Distribution Integrity Management	<input checked="" type="checkbox"/> Investment Planning	<input type="checkbox"/> Qualifications	<input type="checkbox"/> Transmission Engineering
<input type="checkbox"/> Estimating	<input type="checkbox"/> LNG/CNG Operations	<input type="checkbox"/> Quality and Improvement	<input type="checkbox"/> Transmission Integrity Management



Gas Guidance Document Analysis (GDA)

Gas Distribution Mains and Services Asset Management Plan

GP-1102, Rev. 11

Business Processes (GODOCS)

CONSTRUCTION	ENGINEERING	MAINTENANCE & OPERATIONS	EMERGENCY / ADMIN
<input type="checkbox"/> As-Built	<input type="checkbox"/> Applicant Design Manual	<input type="checkbox"/> Corrosion Control	<input type="checkbox"/> Dispatch and Scheduling
<input type="checkbox"/> Coatings	<input type="checkbox"/> Asset Knowledge Management	<input type="checkbox"/> Damage Prevention (indicate subtype) ¹	<input type="checkbox"/> Emergency Plans
<input type="checkbox"/> Construction Methods	<input type="checkbox"/> Distribution Engineering	<input type="checkbox"/> Field Services (GSRs)	<input type="checkbox"/> Gas Guidance Document Process
<input type="checkbox"/> Environmental and Safety	<input checked="" type="checkbox"/> Engineering for Integrity Management	<input type="checkbox"/> Gas Control and Clearances	<input type="checkbox"/> Gas Operations Quality Management
<input type="checkbox"/> Excavation	<input type="checkbox"/> Engineering Material Specifications	<input checked="" type="checkbox"/> Integrity Management (IM)	<input checked="" type="checkbox"/> Gas Safety Excellence
<input type="checkbox"/> Gas Design Standards for Construction	<input type="checkbox"/> Gas Design Standards	<input type="checkbox"/> Leak Survey and Response	<input type="checkbox"/> Operator Qualifications (OQ)
<input type="checkbox"/> Inspection and Operation	<input checked="" type="checkbox"/> Process Safety	<input type="checkbox"/> Major Stations	
<input checked="" type="checkbox"/> Plastic	<input type="checkbox"/> System Planning	<input type="checkbox"/> Measurement and Regulation (M&R)	
<input type="checkbox"/> Steel Pressure Control	<input type="checkbox"/> Transmission Engineering	<input checked="" type="checkbox"/> Steel Pipeline Maintenance and Repair	
<input type="checkbox"/> Strength Testing and Commissioning		<input type="checkbox"/> Valve Maintenance	
<input type="checkbox"/> Welding and Nondestructive Examination (NDE)			

1. Damage Prevention subtypes: Locate and Mark, Patrolling, Public Awareness



Gas Guidance Document Analysis (GDA)

Customer-Connected Equipment Asset Management Plan

GP-1103, Rev. 11

Document Type	Gas Plan
Workflow	Major Revision

1. What is Changing and Why?

This revision has been reformatted with major changes applied to every section (see Appendix F, “Change Log,” Table 13, “AMP Change Log,” for all changes implemented). Key changes include:

- All tables and figures have been updated to reflect most current data available.
- Sections 1 through 5, and all appendices, have been updated to ensure document consistency with other gas plan documents.

2. Major New Risks or Changes to Existing Mitigated Risks (such as Process Safety risks)

NA

3. Stakeholders

Table 1. Technical Stakeholder Reviewers (required to be considered)

Department / Work Center	Title (and Role if applicable)	Name (LAN ID) (or reason if NA)	Date Reviewed
Distribution Integrity Management Program (DIMP)	Principal Asset Family, Document Steward	██████████	07/2024
Standards Engineering	Expert Distribution Specialist, Document Coordinator	██████████	07/2024
	Principal Engineer, Lead Engineer	██████████	07/2024
DIMP	Senior Director, Document Approver	██████████	07/2024
Process Safety Process-safety@pge.com	NA – No changes to step-by-step field instructions		
Quality Management	NA – No associated quality assessments		
Operator Qualification (OQ)	NA – No associated qualifications		
Technology Solutions	NA – No technology or electronic form changes required (Pronto, SAP)		
Regulatory Compliance GasOpsSPRegulatoryCompliance@pge.com	NA – No governing federal or state pipeline regulations.		
PG&E Academy	NA – No associated Academy training		
As-Built Records	NA – Does not affect as-built documents		
Integrity Management (DIMP, FIMP, TIMP)	NA – Does not introduce a new part or change an existing part's specifications; change the installation, operation, maintenance, or removal process of any portion of an asset; change test requirements for any assets; or change data gathering or forms		



Gas Guidance Document Analysis (GDA)

Customer-Connected Equipment Asset Management Plan

GP-1103, Rev. 11

Table 2. Target Audience Usability Review (stakeholders that may review)

Department / Work Center	Title	Name (LAN ID)	Date Provided	Gave Input?
Gas Safety Excellence	Program Management Manager	[REDACTED]	05/23/2024	Yes

4. Electronic Document Routing System (EDRS) Reviewers and Approvers

Approvers: [REDACTED]
[REDACTED]

EDRS Routing Number: 2024-33452

5. Cost Information

NA

6. Schedule Information

Effective Date: 09/18/2024

Gas Plan GP-1103 will be implemented per Appendix G in Gas Plan GP-1100, "Strategic Asset Management Plan (SAMP) – Gas Operations SAMP and AMPs Communication Plan Summary."

7. Review Frequency

☒ No Change to Review Frequency

8. Cancellations

N/A

9. Manuals

☒ No Change to Manuals



Gas Guidance Document Analysis (GDA)

Customer-Connected Equipment Asset Management Plan

GP-1103, Rev. 11

10. Document Properties

Functional Area

<input type="checkbox"/> CNG-LNG	<input type="checkbox"/> Compression and Processing	<input checked="" type="checkbox"/> Customer Connected Equipment	<input type="checkbox"/> Distribution Mains
<input type="checkbox"/> Distribution Services	<input type="checkbox"/> Measurement and Control	<input type="checkbox"/> Storage	<input type="checkbox"/> Transmission Pipe

Target Audiences

<input checked="" type="checkbox"/> Asset Strategy	<input type="checkbox"/> Facility Integrity Management	<input type="checkbox"/> Leak Repair	<input checked="" type="checkbox"/> R&D and Innovation
<input checked="" type="checkbox"/> Associate Distribution Engineers	<input type="checkbox"/> GPOM (I&R)	<input type="checkbox"/> Leak Survey	<input type="checkbox"/> Records and Information Management
<input checked="" type="checkbox"/> Compliance and Risk	<input type="checkbox"/> Gas Control Strategy and Support	<input type="checkbox"/> Locate and Mark	<input type="checkbox"/> Regulatory Compliance
<input checked="" type="checkbox"/> Contract Management	<input checked="" type="checkbox"/> Gas Distribution Control Center	<input type="checkbox"/> Mapping (Transmission and Distribution)	<input checked="" type="checkbox"/> Risk Management
<input checked="" type="checkbox"/> Corrosion Mechanics	<input checked="" type="checkbox"/> Gas Emergency Preparedness	<input checked="" type="checkbox"/> Metering Plant	<input type="checkbox"/> Service Planning
<input checked="" type="checkbox"/> Corrosion Services	<input checked="" type="checkbox"/> Gas Operations Leadership	<input type="checkbox"/> Picarro	<input type="checkbox"/> Sourcing
<input checked="" type="checkbox"/> Data Quality	<input type="checkbox"/> Gas Service Representatives	<input type="checkbox"/> Pipeline Engineering	<input type="checkbox"/> Super Gas Ops
<input type="checkbox"/> Dispatch and Scheduling	<input type="checkbox"/> Gas Transmission Control Center	<input type="checkbox"/> Pipeline Safety Enhancement Plan Engineering	<input type="checkbox"/> System Planning
<input checked="" type="checkbox"/> Distribution Construction	<input type="checkbox"/> General Construction	<input checked="" type="checkbox"/> Program Management (Transmission and Distribution)	<input type="checkbox"/> Technology and Tools
<input checked="" type="checkbox"/> Distribution Engineering	<input type="checkbox"/> Hydrotesting	<input checked="" type="checkbox"/> Project Management (Transmission and Distribution)	<input type="checkbox"/> Transmission Construction
<input checked="" type="checkbox"/> Distribution Integrity Management	<input checked="" type="checkbox"/> Investment Planning	<input type="checkbox"/> Qualifications	<input type="checkbox"/> Transmission Engineering
<input type="checkbox"/> Estimating	<input type="checkbox"/> LNG/CNG Operations	<input type="checkbox"/> Quality and Improvement	<input type="checkbox"/> Transmission Integrity Management

Business Processes (GODOCS)

CONSTRUCTION	ENGINEERING	MAINTENANCE & OPERATIONS	EMERGENCY / ADMIN
<input type="checkbox"/> As-Built	<input type="checkbox"/> Applicant Design Manual	<input type="checkbox"/> Corrosion Control	<input type="checkbox"/> Dispatch and Scheduling
<input type="checkbox"/> Coatings	<input type="checkbox"/> Asset Knowledge Management	<input type="checkbox"/> Damage Prevention (indicate subtype) ¹	<input type="checkbox"/> Emergency Plans
<input type="checkbox"/> Construction Methods	<input type="checkbox"/> Distribution Engineering	<input type="checkbox"/> Field Services (GSRs)	<input type="checkbox"/> Gas Guidance Document Process
<input type="checkbox"/> Environmental and Safety	<input checked="" type="checkbox"/> Engineering for Integrity Management	<input type="checkbox"/> Gas Control and Clearances	<input type="checkbox"/> Gas Operations Quality Management
<input type="checkbox"/> Excavation	<input type="checkbox"/> Engineering Material Specifications	<input checked="" type="checkbox"/> Integrity Management (IM)	<input checked="" type="checkbox"/> Gas Safety Excellence
<input type="checkbox"/> Gas Design Standards for Construction	<input type="checkbox"/> Gas Design Standards	<input type="checkbox"/> Leak Survey and Response	<input type="checkbox"/> Operator Qualifications (OQ)
<input type="checkbox"/> Inspection and Operation	<input checked="" type="checkbox"/> Process Safety	<input type="checkbox"/> Major Stations	
<input checked="" type="checkbox"/> Plastic	<input type="checkbox"/> System Planning	<input type="checkbox"/> Measurement and Regulation (M&R)	
<input type="checkbox"/> Steel Pressure Control	<input type="checkbox"/> Transmission Engineering	<input checked="" type="checkbox"/> Steel Pipeline Maintenance and Repair	
<input type="checkbox"/> Strength Testing and Commissioning		<input type="checkbox"/> Valve Maintenance	
<input type="checkbox"/> Welding and Nondestructive Examination (NDE)			

1. Damage Prevention subtypes: Locate and Mark, Patrolling, Public Awareness



Gas Guidance Document Analysis (GDA)

Measurement and Control Asset Management Plan

GP-1104, Rev. 11

Document Type	Gas Plan
Workflow	Major Revision

1. What is Changing and Why?

This gas plan has been updated by Pacific Gas and Electric Company (PG&E or Company) asset management principals and associated stakeholders per the annual review process. Changes have been applied to all sections and logged in Appendix F, "Change Log." References to Utility Procedure TD-4125P-10, "Identifying Gas Transmission Assets," have been replaced with the "gas asset classification standard" in support of PG&E's revisions to the gas asset classification process which are based on recent federal definition changes from the Pipeline and Hazardous Materials Administration (PHMSA), and a decision by the California Public Utilities Commission (CPUC) issued in December 2023.

2. Major New Risks or Changes to Existing Mitigated Risks (such as Process Safety risks)

NA

3. Stakeholders

Table 1. Technical Stakeholder Reviewers (required to be considered)

Department / Work Center	Title (and Role if applicable)	Name (LAN ID) (or reason if NA)	Date Reviewed
Station Services	Principal Asset Family Specialist, Document Steward	██████████	10/2024
Standards Engineering	Supervisor, Document Coordinator	██████████	10/2024
	Principal Gas Engineer, Lead Engineer	██████████	11/2024
Regulation Engineering	Senior Manager, Document Approver	██████████	10/2024
Process Safety Process-safety@pge.com	NA – No changes to step-by-step field instructions		
Quality Management	NA – No associated quality assessments		
Operator Qualification	NA – No associated qualifications		
Technology Solutions	NA – No technology or electronic form changes required (Pronto, SAP)		
Regulatory Compliance GasOpsSPRegulatoryCompliance@pge.com	NA – No governing federal or state pipeline regulations. <i>No significant changes to TIMP program requiring Reg. Compliance review for notification purposes.</i>		
PG&E Academy	NA – No associated Academy training		
As-Built Records	NA – Does not affect as-built documents		
Integrity Management (DIMP, FIMP, TIMP)	See Document Steward/Approver		



Gas Guidance Document Analysis (GDA)

Measurement and Control Asset Management Plan

GP-1104, Rev. 11

Table 2. Target Audience Usability Review (stakeholders that may review)

Department / Work Center	Title	Name (LAN ID)	Date Provided	Gave Input?
Regulation Engineering	Principal	[REDACTED]	07/2024	Yes
	Gas Engineering Supervisor	[REDACTED]	07/2024	Yes
Measurement Services	Manager	[REDACTED]	10/2024	Yes
FIMP Risk	Manager	[REDACTED]	07/2024	Yes
	Principal Gas Integrity Management (IM) Engineer	[REDACTED]	07/2024	Yes
	Principal Business Process Analyst	[REDACTED]	07/2024	Yes
Station Services	Principal Gas IM Engineer	[REDACTED]	07/2024	Yes
	Principal Engineer	[REDACTED]	07/2024	Yes

4. Electronic Document Routing System (EDRS) Reviewers and Approvers

Approvers: [REDACTED]

EDRS Routing Number: 2024-43940

5. Cost Information

NA

6. Schedule Information

Effective Date: Effective upon publication

GP-1104 will be implemented per GP-1100, "Strategic Asset Management Plan," Appendix G, "Gas Operations SAMP and AMPs Communication Plan Summary."

7. Work-in-Progress Direction

NA

8. Review Frequency

☒ No Change to Review Frequency

At least once every calendar year, not to exceed 15 months, to the date.

9. Cancellations

NA



Gas Guidance Document Analysis (GDA)

Measurement and Control Asset Management Plan

GP-1104, Rev. 11

10. Manuals

☒ No Change to Manuals

11. Document Properties

Functional Area

<input type="checkbox"/> CNG-LNG	<input type="checkbox"/> Compression and Processing	<input type="checkbox"/> Customer Connected Equipment	<input type="checkbox"/> Distribution Mains
<input type="checkbox"/> Distribution Services	<input checked="" type="checkbox"/> Measurement and Control	<input type="checkbox"/> Storage	<input type="checkbox"/> Transmission Pipe

Target Audiences

<input checked="" type="checkbox"/> Asset Strategy	<input checked="" type="checkbox"/> Facility Integrity Management	<input type="checkbox"/> Leak Repair	<input checked="" type="checkbox"/> R&D and Innovation
<input type="checkbox"/> Associate Distribution Engineers	<input type="checkbox"/> GPOM (I&R)	<input type="checkbox"/> Leak Survey	<input type="checkbox"/> Records and Information Management
<input checked="" type="checkbox"/> Compliance and Risk	<input type="checkbox"/> Gas Control Strategy and Support	<input type="checkbox"/> Locate and Mark	<input type="checkbox"/> Regulatory Compliance
<input type="checkbox"/> Contract Management	<input type="checkbox"/> Gas Distribution Control Center	<input type="checkbox"/> Mapping (Transmission and Distribution)	<input checked="" type="checkbox"/> Risk Management
<input type="checkbox"/> Corrosion Mechanics	<input type="checkbox"/> Gas Emergency Preparedness	<input checked="" type="checkbox"/> Metering Plant	<input type="checkbox"/> Service Planning
<input type="checkbox"/> Corrosion Services	<input type="checkbox"/> Gas Operations Leadership	<input type="checkbox"/> Picarro	<input type="checkbox"/> Sourcing
<input type="checkbox"/> Data Quality	<input type="checkbox"/> Gas Service Representatives	<input type="checkbox"/> Pipeline Engineering	<input type="checkbox"/> Super Gas Ops
<input type="checkbox"/> Dispatch and Scheduling	<input type="checkbox"/> Gas Transmission Control Center	<input type="checkbox"/> Pipeline Safety Enhancement Plan Engineering	<input type="checkbox"/> System Planning
<input type="checkbox"/> Distribution Construction	<input type="checkbox"/> General Construction	<input type="checkbox"/> Program Management (Transmission and Distribution)	<input type="checkbox"/> Technology and Tools
<input type="checkbox"/> Distribution Engineering	<input type="checkbox"/> Hydrotesting	<input type="checkbox"/> Project Management (Transmission and Distribution)	<input type="checkbox"/> Transmission Construction
<input type="checkbox"/> Distribution Integrity Management	<input type="checkbox"/> Investment Planning	<input type="checkbox"/> Qualifications	<input type="checkbox"/> Transmission Engineering
<input type="checkbox"/> Estimating	<input type="checkbox"/> LNG/CNG Operations	<input type="checkbox"/> Quality and Improvement	<input type="checkbox"/> Transmission Integrity Management



Gas Guidance Document Analysis (GDA)

Measurement and Control Asset Management Plan

GP-1104, Rev. 11

Business Processes (GODOCS)

CONSTRUCTION	ENGINEERING	MAINTENANCE & OPERATIONS	EMERGENCY / ADMIN
<input type="checkbox"/> As-Built	<input type="checkbox"/> Applicant Design Manual	<input type="checkbox"/> Corrosion Control	<input type="checkbox"/> Dispatch and Scheduling
<input type="checkbox"/> Coatings	<input type="checkbox"/> Asset Knowledge Management	<input type="checkbox"/> Damage Prevention (indicate subtype) ¹	<input type="checkbox"/> Emergency Plans
<input type="checkbox"/> Construction Methods	<input type="checkbox"/> Distribution Engineering	<input type="checkbox"/> Field Services (GSRs)	<input type="checkbox"/> Gas Guidance Document Process
<input type="checkbox"/> Environmental and Safety	<input checked="" type="checkbox"/> Engineering for Integrity Management	<input checked="" type="checkbox"/> Gas Control and Clearances	<input type="checkbox"/> Gas Operations Quality Management
<input type="checkbox"/> Excavation	<input type="checkbox"/> Engineering Material Specifications	<input checked="" type="checkbox"/> Integrity Management (IM)	<input checked="" type="checkbox"/> Gas Safety Excellence
<input type="checkbox"/> Gas Design Standards for Construction	<input type="checkbox"/> Gas Design Standards	<input type="checkbox"/> Leak Survey and Response	<input type="checkbox"/> Operator Qualifications (OQ)
<input type="checkbox"/> Inspection and Operation	<input checked="" type="checkbox"/> Process Safety	<input type="checkbox"/> Major Stations	
<input type="checkbox"/> Plastic	<input type="checkbox"/> System Planning	<input checked="" type="checkbox"/> Measurement and Regulation (M&R)	
<input type="checkbox"/> Steel Pressure Control	<input type="checkbox"/> Transmission Engineering	<input type="checkbox"/> Steel Pipeline Maintenance and Repair	
<input type="checkbox"/> Strength Testing and Commissioning		<input checked="" type="checkbox"/> Valve Maintenance	
<input type="checkbox"/> Welding and Nondestructive Examination (NDE)			

1. Damage Prevention subtypes: Locate and Mark, Patrolling, Public Awareness



Gas Guidance Document Analysis (GDA)

Compression and Processing Asset Management Plan

GP-1105, Rev. 11

Document Type	Gas Plan
Workflow	Major Revision

1. What is Changing and Why?

Gas Plan GP-1105, "Compression and Processing Asset Management Plan," is being updated per the annual review process. It has been updated by Pacific Gas and Electric Company (PG&E) asset management principals and associated stakeholders.

Major changes have been applied to all sections. Information on changes is contained in Appendix F, "Change Log."

2. Major New Risks or Changes to Existing Mitigated Risks (such as Process Safety risks)

NA

3. Stakeholders

Table 1. Technical Stakeholder Reviewers (required to be considered)

Department / Work Center	Title (and Role if applicable)	Name (LAN ID) (or reason if NA)	Date Reviewed
Station Services	Principal Asset Family Specialist, Document Steward		08/2024
Standards Engineering	Expert Gas Engineer, Document Coordinator		08/2024
Standards Engineering	Principal Gas Engineer, Lead Engineer		09/2024
Station Services	Senior Manager, Document Approver		08/2024
Process Safety Process-safety@pge.com	NA – No changes to step-by-step field instructions		
Quality Management	NA – No associated quality assessments		
Operator Qualification	NA – No associated qualifications		
Technology Solutions	NA – No technology or electronic form changes required (Pronto, SAP)		
Regulatory Compliance GasOpsSPRegulatoryCompliance@pge.com	NA – No governing federal or state pipeline regulations. <i>No significant changes to TIMP program requiring Reg. Compliance review for notification purposes.</i>		
PG&E Academy	NA – No associated Academy training		
As-Built Records	NA – Does not affect as-built documents		
Integrity Management (DIMP, FIMP, TIMP)	See Document Steward/Approver above.		



Gas Guidance Document Analysis (GDA)

Compression and Processing Asset Management Plan

GP-1105, Rev. 11

Table 2. Target Audience Usability Review (stakeholders that may review)

Department / Work Center	Title	Name (LAN ID)	Date Provided	Gave Input?
Station Services	Supervisor	[REDACTED]	07/2024	Y
	Supervisor	[REDACTED]	07/2024	Y
	Supervisor	[REDACTED]	07/2024	Y
	Expert Gas Engineer	[REDACTED]	07/2024	Y
	Expert Gas Engineer	[REDACTED]	07/2024	Y
	Expert Gas Engineer	[REDACTED]	07/2024	Y
	Principal Gas Engineer	[REDACTED]	07/2024	Y

4. Electronic Document Routing System (EDRS) Reviewers and Approvers

Approvers: [REDACTED]
[REDACTED]

CC: [REDACTED]
[REDACTED]

EDRS Routing Number: 2024-33464

5. Cost Information

N/A

6. Schedule Information

Effective Date: 09/18/2024 (same as publication date)

GP-1105 will be implemented per Appendix G in GP-1100, "Strategic Asset Management Plan (SAMP)" – Gas Operations SAMP and AMPs Communication Plan Summary.

7. Review Frequency

☒ No Change to Review Frequency

At least once every calendar year, not to exceed 15 months, to the date.

8. Cancellations

NA

9. Manuals

☒ No Change to Manuals



Gas Guidance Document Analysis (GDA)

Compression and Processing Asset Management Plan

GP-1105, Rev. 11

10. Document Properties

Functional Area

<input type="checkbox"/> CNG-LNG	<input checked="" type="checkbox"/> Compression and Processing	<input type="checkbox"/> Customer Connected Equipment	<input type="checkbox"/> Distribution Mains
<input type="checkbox"/> Distribution Services	<input type="checkbox"/> Measurement and Control	<input type="checkbox"/> Storage	<input type="checkbox"/> Transmission Pipe

Target Audiences

<input checked="" type="checkbox"/> Asset Strategy	<input checked="" type="checkbox"/> Facility Integrity Management	<input type="checkbox"/> Leak Repair	<input checked="" type="checkbox"/> R&D and Innovation
<input type="checkbox"/> Associate Distribution Engineers	<input type="checkbox"/> GPOM (I&R)	<input type="checkbox"/> Leak Survey	<input type="checkbox"/> Records and Information Management
<input checked="" type="checkbox"/> Compliance and Risk	<input type="checkbox"/> Gas Control Strategy and Support	<input type="checkbox"/> Locate and Mark	<input type="checkbox"/> Regulatory Compliance
<input type="checkbox"/> Contract Management	<input type="checkbox"/> Gas Distribution Control Center	<input type="checkbox"/> Mapping (Transmission and Distribution)	<input checked="" type="checkbox"/> Risk Management
<input type="checkbox"/> Corrosion Mechanics	<input type="checkbox"/> Gas Emergency Preparedness	<input type="checkbox"/> Metering Plant	<input type="checkbox"/> Service Planning
<input type="checkbox"/> Corrosion Services	<input type="checkbox"/> Gas Operations Leadership	<input type="checkbox"/> Picarro	<input type="checkbox"/> Sourcing
<input type="checkbox"/> Data Quality	<input type="checkbox"/> Gas Service Representatives	<input type="checkbox"/> Pipeline Engineering	<input type="checkbox"/> Super Gas Ops
<input type="checkbox"/> Dispatch and Scheduling	<input type="checkbox"/> Gas Transmission Control Center	<input type="checkbox"/> Pipeline Safety Enhancement Plan Engineering	<input type="checkbox"/> System Planning
<input type="checkbox"/> Distribution Construction	<input type="checkbox"/> General Construction	<input type="checkbox"/> Program Management (Transmission and Distribution)	<input type="checkbox"/> Technology and Tools
<input type="checkbox"/> Distribution Engineering	<input type="checkbox"/> Hydrotesting	<input type="checkbox"/> Project Management (Transmission and Distribution)	<input type="checkbox"/> Transmission Construction
<input type="checkbox"/> Distribution Integrity Management	<input type="checkbox"/> Investment Planning	<input type="checkbox"/> Qualifications	<input type="checkbox"/> Transmission Engineering
<input type="checkbox"/> Estimating	<input type="checkbox"/> LNG/CNG Operations	<input type="checkbox"/> Quality and Improvement	<input type="checkbox"/> Transmission Integrity Management

Business Processes (GODOCS)

CONSTRUCTION	ENGINEERING	MAINTENANCE & OPERATIONS	EMERGENCY / ADMIN
<input type="checkbox"/> As-Built	<input type="checkbox"/> Applicant Design Manual	<input type="checkbox"/> Corrosion Control	<input type="checkbox"/> Dispatch and Scheduling
<input type="checkbox"/> Coatings	<input type="checkbox"/> Asset Knowledge Management	<input type="checkbox"/> Damage Prevention (indicate subtype) ¹	<input type="checkbox"/> Emergency Plans
<input type="checkbox"/> Construction Methods	<input type="checkbox"/> Distribution Engineering	<input type="checkbox"/> Field Services (GSRs)	<input type="checkbox"/> Gas Guidance Document Process
<input type="checkbox"/> Environmental and Safety	<input checked="" type="checkbox"/> Engineering for Integrity Management	<input type="checkbox"/> Gas Control and Clearances	<input type="checkbox"/> Gas Operations Quality Management
<input type="checkbox"/> Excavation	<input type="checkbox"/> Engineering Material Specifications	<input checked="" type="checkbox"/> Integrity Management (IM)	<input checked="" type="checkbox"/> Gas Safety Excellence
<input type="checkbox"/> Gas Design Standards for Construction	<input type="checkbox"/> Gas Design Standards	<input type="checkbox"/> Leak Survey and Response	<input type="checkbox"/> Operator Qualifications (OQ)
<input type="checkbox"/> Inspection and Operation	<input checked="" type="checkbox"/> Process Safety	<input type="checkbox"/> Major Stations	
<input type="checkbox"/> Plastic	<input type="checkbox"/> System Planning	<input type="checkbox"/> Measurement and Regulation (M&R)	
<input type="checkbox"/> Steel Pressure Control	<input type="checkbox"/> Transmission Engineering	<input type="checkbox"/> Steel Pipeline Maintenance and Repair	
<input type="checkbox"/> Strength Testing and Commissioning		<input type="checkbox"/> Valve Maintenance	
<input type="checkbox"/> Welding and Nondestructive Examination (NDE)			

1. Damage Prevention subtypes: Locate and Mark, Patrolling, Public Awareness



Gas Guidance Document Analysis (GDA)

LNG/CNG Asset Management Plan

GP-1106, Rev. 10

Document Type	Gas Plan
Workflow	Annual Mid-Year Revision

1. What is Changing and Why?

This gas plan (GP-1106, “LNG/CNG Asset Management Plan”) is being updated per the annual review process by Pacific Gas and Electric Company (PG&E or Company) asset management principals and associated leadership and subject matter expert stakeholders.

- Applied an annual update to the content, statistics, tables, and figures throughout the plan.
- Updated Sections 1 through 5 and all appendices to ensure document consistency with other gas plan documents, and updated content.
- Updated strategic objectives and risk controls and programs.

Scores for all risk sub-drivers have been reviewed, but have not been revised for 2023 because the current scoring and documentation are sufficient.

2. Major New Risks or Changes to Existing Mitigated Risks (such as Process Safety risks)

NA

3. Stakeholders

Table 1. Technical Stakeholder Reviewers (required to be considered)

Department / Work Center	Title (and Role if applicable)	Name (LAN ID) (or reason if NA)	Date Reviewed
LNG/CNG Operations and Engineering	Senior Manager, Document Steward	██████████	8/2024
Standards Engineering	Expert Gas Engineer, Document Coordinator	██████████	8/2024
Standards Engineering	Principal Engineer, Lead Engineer	██████████	8/2024
LNG/CNG Operations and Engineering	Senior Manager, Document Approver	██████████	8/2024
Process Safety Process-safety@pge.com	NA – No changes to step-by-step field instructions		
Quality Management	NA – No associated quality assessments		
Operator Qualification	NA – No associated qualifications		
Technology Solutions	NA – No technology or electronic form changes required (Pronto, SAP)		
Regulatory Compliance GasOpsSPRegulatoryCompliance@pge.com	NA – No governing federal or state pipeline regulations. No significant changes to TIMP program requiring Reg. Compliance review for notification purposes.		
PG&E Academy	NA – No associated Academy training		
As-Built Records	NA – Does not affect as-built documents		



Gas Guidance Document Analysis (GDA)

LNG/CNG Asset Management Plan

GP-1106, Rev. 10

9. Manuals

☒ No Change to Manuals

10. Document Properties

Functional Area

<input checked="" type="checkbox"/> CNG-LNG	<input type="checkbox"/> Compression and Processing	<input type="checkbox"/> Customer Connected Equipment	<input type="checkbox"/> Distribution Mains
<input type="checkbox"/> Distribution Services	<input type="checkbox"/> Measurement and Control	<input type="checkbox"/> Storage	<input type="checkbox"/> Transmission Pipe

Target Audiences

<input type="checkbox"/> Asset Strategy	<input type="checkbox"/> Facility Integrity Management	<input type="checkbox"/> Leak Repair	<input type="checkbox"/> R&D and Innovation
<input type="checkbox"/> Associate Distribution Engineers	<input type="checkbox"/> GPOM (I&R)	<input type="checkbox"/> Leak Survey	<input type="checkbox"/> Records and Information Management
<input type="checkbox"/> Compliance and Risk	<input type="checkbox"/> Gas Control Strategy and Support	<input type="checkbox"/> Locate and Mark	<input type="checkbox"/> Regulatory Compliance
<input type="checkbox"/> Contract Management	<input type="checkbox"/> Gas Distribution Control Center	<input type="checkbox"/> Mapping (Transmission and Distribution)	<input type="checkbox"/> Risk Management
<input type="checkbox"/> Corrosion Mechanics	<input type="checkbox"/> Gas Emergency Preparedness	<input type="checkbox"/> Metering Plant	<input type="checkbox"/> Service Planning
<input type="checkbox"/> Corrosion Services	<input type="checkbox"/> Gas Operations Leadership	<input type="checkbox"/> Picarro	<input type="checkbox"/> Sourcing
<input type="checkbox"/> Data Quality	<input type="checkbox"/> Gas Service Representatives	<input type="checkbox"/> Pipeline Engineering	<input type="checkbox"/> Super Gas Ops
<input type="checkbox"/> Dispatch and Scheduling	<input type="checkbox"/> Gas Transmission Control Center	<input type="checkbox"/> Pipeline Safety Enhancement Plan Engineering	<input type="checkbox"/> System Planning
<input type="checkbox"/> Distribution Construction	<input type="checkbox"/> General Construction	<input type="checkbox"/> Program Management (Transmission and Distribution)	<input type="checkbox"/> Technology and Tools
<input type="checkbox"/> Distribution Engineering	<input type="checkbox"/> Hydrotesting	<input type="checkbox"/> Project Management (Transmission and Distribution)	<input type="checkbox"/> Transmission Construction
<input type="checkbox"/> Distribution Integrity Management	<input type="checkbox"/> Investment Planning	<input type="checkbox"/> Qualifications	<input type="checkbox"/> Transmission Engineering
<input type="checkbox"/> Estimating	<input checked="" type="checkbox"/> LNG/CNG Operations	<input type="checkbox"/> Quality and Improvement	<input type="checkbox"/> Transmission Integrity Management

Business Processes (GODOCS)

CONSTRUCTION	ENGINEERING	MAINTENANCE & OPERATIONS	EMERGENCY / ADMIN
<input type="checkbox"/> As-Built	<input type="checkbox"/> Applicant Design Manual	<input type="checkbox"/> Corrosion Control	<input type="checkbox"/> Dispatch and Scheduling
<input type="checkbox"/> Coatings	<input type="checkbox"/> Asset Knowledge Management	<input type="checkbox"/> Damage Prevention (indicate subtype) ¹	<input type="checkbox"/> Emergency Plans
<input type="checkbox"/> Construction Methods	<input type="checkbox"/> Distribution Engineering	<input type="checkbox"/> Field Services (GSRs)	<input type="checkbox"/> Gas Guidance Document Process
<input type="checkbox"/> Environmental and Safety	<input checked="" type="checkbox"/> Engineering for Integrity Management	<input type="checkbox"/> Gas Control and Clearances	<input type="checkbox"/> Gas Operations Quality Management
<input type="checkbox"/> Excavation	<input type="checkbox"/> Engineering Material Specifications	<input checked="" type="checkbox"/> Integrity Management (IM)	<input checked="" type="checkbox"/> Gas Safety Excellence
<input type="checkbox"/> Gas Design Standards for Construction	<input type="checkbox"/> Gas Design Standards	<input type="checkbox"/> Leak Survey and Response	<input type="checkbox"/> Operator Qualifications (OQ)
<input type="checkbox"/> Inspection and Operation	<input checked="" type="checkbox"/> Process Safety	<input type="checkbox"/> Major Stations	
<input type="checkbox"/> Plastic	<input type="checkbox"/> System Planning	<input type="checkbox"/> Measurement and Regulation (M&R)	
<input type="checkbox"/> Steel Pressure Control	<input type="checkbox"/> Transmission Engineering	<input type="checkbox"/> Steel Pipeline Maintenance and Repair	
<input type="checkbox"/> Strength Testing and Commissioning		<input type="checkbox"/> Valve Maintenance	
<input type="checkbox"/> Welding and Nondestructive Examination (NDE)			

1. Damage Prevention subtypes: Locate and Mark, Patrolling, Public Awareness



Gas Guidance Document Analysis (GDA)

Underground Gas Storage Asset Management Plan

GP-1108, Rev. 11

Document Type	Gas Manual
Workflow	Major Revision

1. What is Changing and Why?

To update gas plan per the annual review process led by PG&E Asset Management team principals and associated leadership stakeholders. This major revision includes the following key changes. See Appendix F, "Change Log," in the appendices section for additional details on the changes.

- Annual update to the content, statistics, tables, and figures throughout the gas plan to align with annual updates
- Added new tables, figures, and sections as documented in "Change Log"

2. Major New Risks or Changes to Existing Mitigated Risks (such as Process Safety risks)

NA

3. Stakeholders

Table 1. Technical Stakeholder Reviewers (required to be considered)

Department / Work Center	Title (and Role if applicable)	Name (LAN ID) (or reason if NA)	Date Reviewed
Gas Reservoir Engineering	Gas Storage Asset Analyst, Document Steward	██████████	12/2024
Standards Engineering	Senior Gas Engineer, Document Coordinator	██████████	12/2024
Standards Engineering	Principal Engineer, Lead Engineer	██████████	12/2024
Gas Reservoir Engineering	Director, Document Approver	██████████	12/2024
Process Safety Process-safety@pge.com	NA – No changes to step-by-step field instructions		
Quality Management	NA – No associated quality assessments		
Operator Qualification	NA – No associated qualifications		
Technology Solutions	NA – No technology or electronic form changes required (Pronto, SAP)		
Regulatory Compliance GasOpsSPRegulatoryCompliance@pge.com	NA – No governing federal or state pipeline regulations. <i>No significant changes to TIMP program requiring Reg. Compliance review for notification purposes.</i>		
PG&E Academy	NA – No associated Academy training		
As-Built Records	NA – Does not affect as-built documents		
Integrity Management (DIMP, FIMP, TIMP)	NA – Does not introduce a new part or change an existing part's specifications; change the installation, operation, maintenance, or removal process of any portion of an asset; change test requirements for any assets; or change data gathering or forms		



Gas Guidance Document Analysis (GDA)

Underground Gas Storage Asset Management Plan

GP-1108, Rev. 11

Table 2. Target Audience Usability Review (stakeholders that may review)

Department / Work Center	Title	Name (LAN ID)	Date Provided	Gave Input?
Gas Safety Excellence	Manager, Program Management	[REDACTED]	06/2024	No
Risk and Compliance	Gas Risk Manager	[REDACTED]	06/2024	Yes
Gas Reservoir Engineering	Strategic Planning, Chief	[REDACTED]	09/2024	No
Gas Engineering & Design	Manager, Gas Engineering & Design	[REDACTED]	09/2024	Yes
Gas Reservoir Engineering	Manager, Gas Engineering & Design	[REDACTED]	09/2024	Yes
Distribution Integrity Management	DIMP Asset Family, Principal	[REDACTED]	09/2024	Yes
Transmission Integrity Management	TIMP Asset Family, Principal	[REDACTED]	09/2024	Yes
Facility Integrity Management	FIMP Asset Family, Principal	[REDACTED]	09/2024	Yes
Gas Reservoir Engineering	Gas Storage Reservoir Engineer, Associate	[REDACTED]	09/2024	Yes
Gas Reservoir Engineering	Manager, Gas Engineering & Design	[REDACTED]	09/2024	Yes
Gas Reservoir Engineering	Gas Storage Reservoir Engineer, Senior	[REDACTED]	09/2024	Yes

4. Electronic Document Routing System (EDRS) Reviewers and Approvers

Approvers: [REDACTED]

EDRS Routing Number: 2024-50772

5. Cost Information

NA

6. Schedule Information

Effective Date: Same as publication date

7. Work-in-Progress Direction

NA



Gas Guidance Document Analysis (GDA)

Underground Gas Storage Asset Management Plan

GP-1108, Rev. 11

8. Review Frequency

☒ No Change to Review Frequency

9. Cancellations

NA

10. Manuals

☒ No Change to Manuals



Gas Guidance Document Analysis (GDA)

Underground Gas Storage Asset Management Plan

GP-1108, Rev. 11

11. Document Properties

Functional Area

<input type="checkbox"/> CNG-LNG	<input type="checkbox"/> Compression and Processing	<input type="checkbox"/> Customer Connected Equipment	<input type="checkbox"/> Distribution Mains
<input type="checkbox"/> Distribution Services	<input type="checkbox"/> Measurement and Control	<input checked="" type="checkbox"/> Storage	<input type="checkbox"/> Transmission Pipe

Target Audiences

<input checked="" type="checkbox"/> Asset Strategy	<input checked="" type="checkbox"/> Facility Integrity Management	<input type="checkbox"/> Leak Repair	<input checked="" type="checkbox"/> R&D and Innovation
<input type="checkbox"/> Associate Distribution Engineers	<input type="checkbox"/> GPOM (I&R)	<input type="checkbox"/> Leak Survey	<input type="checkbox"/> Records and Information Management
<input type="checkbox"/> Compliance and Risk	<input type="checkbox"/> Gas Control Strategy and Support	<input type="checkbox"/> Locate and Mark	<input type="checkbox"/> Regulatory Compliance
<input type="checkbox"/> Contract Management	<input type="checkbox"/> Gas Distribution Control Center	<input type="checkbox"/> Mapping (Transmission and Distribution)	<input checked="" type="checkbox"/> Risk Management
<input type="checkbox"/> Corrosion Mechanics	<input type="checkbox"/> Gas Emergency Preparedness	<input type="checkbox"/> Metering Plant	<input type="checkbox"/> Service Planning
<input type="checkbox"/> Corrosion Services	<input type="checkbox"/> Gas Operations Leadership	<input type="checkbox"/> Picarro	<input type="checkbox"/> Sourcing
<input type="checkbox"/> Data Quality	<input type="checkbox"/> Gas Service Representatives	<input type="checkbox"/> Pipeline Engineering	<input type="checkbox"/> Super Gas Ops
<input type="checkbox"/> Dispatch and Scheduling	<input type="checkbox"/> Gas Transmission Control Center	<input type="checkbox"/> Pipeline Safety Enhancement Plan Engineering	<input type="checkbox"/> System Planning
<input type="checkbox"/> Distribution Construction	<input type="checkbox"/> General Construction	<input type="checkbox"/> Program Management (Transmission and Distribution)	<input type="checkbox"/> Technology and Tools
<input type="checkbox"/> Distribution Engineering	<input type="checkbox"/> Hydrotesting	<input type="checkbox"/> Project Management (Transmission and Distribution)	<input type="checkbox"/> Transmission Construction
<input type="checkbox"/> Distribution Integrity Management	<input type="checkbox"/> Investment Planning	<input type="checkbox"/> Qualifications	<input type="checkbox"/> Transmission Engineering
<input type="checkbox"/> Estimating	<input type="checkbox"/> LNG/CNG Operations	<input type="checkbox"/> Quality and Improvement	<input type="checkbox"/> Transmission Integrity Management

Business Processes (GODOCS)

CONSTRUCTION	ENGINEERING	MAINTENANCE & OPERATIONS	EMERGENCY / ADMIN
<input type="checkbox"/> As-Built	<input type="checkbox"/> Applicant Design Manual	<input type="checkbox"/> Corrosion Control	<input type="checkbox"/> Dispatch and Scheduling
<input type="checkbox"/> Coatings	<input type="checkbox"/> Asset Knowledge Management	<input type="checkbox"/> Damage Prevention (indicate subtype) ¹	<input type="checkbox"/> Emergency Plans
<input type="checkbox"/> Construction Methods	<input type="checkbox"/> Distribution Engineering	<input type="checkbox"/> Field Services (GSRs)	<input type="checkbox"/> Gas Guidance Document Process
<input type="checkbox"/> Environmental and Safety	<input checked="" type="checkbox"/> Engineering for Integrity Management	<input type="checkbox"/> Gas Control and Clearances	<input type="checkbox"/> Gas Operations Quality Management
<input type="checkbox"/> Excavation	<input type="checkbox"/> Engineering Material Specifications	<input type="checkbox"/> Integrity Management (IM)	<input checked="" type="checkbox"/> Gas Safety Excellence
<input type="checkbox"/> Gas Design Standards for Construction	<input type="checkbox"/> Gas Design Standards	<input type="checkbox"/> Leak Survey and Response	<input type="checkbox"/> Operator Qualifications (OQ)
<input type="checkbox"/> Inspection and Operation	<input checked="" type="checkbox"/> Process Safety	<input type="checkbox"/> Major Stations	
<input type="checkbox"/> Plastic	<input type="checkbox"/> System Planning	<input type="checkbox"/> Measurement and Regulation (M&R)	
<input type="checkbox"/> Steel Pressure Control	<input type="checkbox"/> Transmission Engineering	<input type="checkbox"/> Steel Pipeline Maintenance and Repair	
<input type="checkbox"/> Strength Testing and Commissioning		<input type="checkbox"/> Valve Maintenance	
<input type="checkbox"/> Welding and Nondestructive Examination (NDE)			

1. Damage Prevention subtypes: Locate and Mark, Patrolling, Public Awareness



Gas Guidance Document Analysis (GDA)

Gas Data Asset Management Plan

GP-1109, Rev. 7

Document Type	Gas Plan
Workflow	Major Revision

1. What is Changing and Why?

This revision has been reformatted with major changes applied to every section (see Appendix F, “Change Log”). Key changes include:

- All tables and figures have been updated to reflect current data.
- Sections 1–5 and all appendices have been updated to ensure consistency and that asset information is current.
- Added references to Strategic Data Plans.

2. Major New Risks or Changes to Existing Mitigated Risks (such as Process Safety risks)

NA

3. Stakeholders

Table 1. Technical Stakeholder Reviewers (required to be considered)

Department / Work Center	Title (and Role if applicable)	Name (LAN ID) (or reason if NA)	Date Reviewed
Distribution Integrity Management Program (DIMP)	Principal Asset Family, Document Steward		07/07/2024
Standards Engineering	Senior Gas Engineer, Document Coordinator		09/30/2024
Standards Engineering	Supervising Engineer, Lead Engineer		09/27/2024
Gas Data Management and Solutions	Director, Document Approver		07/15/2024
Process Safety Process-safety@pge.com	NA – No changes to step-by-step field instructions		
Quality Management	NA – No associated quality assessments		
Operator Qualification	NA – No associated qualifications		
Technology Solutions	NA – No technology or electronic form changes required (Pronto, SAP)		
Regulatory Compliance GasOpsSPRegulatoryCompliance@pge.com	NA – No governing federal or state pipeline regulations		
PG&E Academy	NA – No associated Academy training		
As-Built Records	NA – Does not affect as-built documents		
Integrity Management (DIMP, FIMP, TIMP)	NA – Does not change the installation, operation, maintenance, or removal process of any portion of an asset; change test requirements for any assets; or change data gathering or forms		



Gas Guidance Document Analysis (GDA)

Gas Data Asset Management Plan

GP-1109, Rev. 7

Table 2. Target Audience Usability Review (stakeholders that may review)

Department / Work Center	Title	Name (LAN ID)	Date Provided	Gave Input?
Gas Safety Excellence	Manager, Program Management		07/02/2024	Yes

4. Electronic Document Routing System (EDRS) Reviewers and Approvers

Approvers:

EDRS Routing Number: 2024-38756

5. Cost Information

NA

6. Schedule Information

Effective Date: 10/01/2024

GP-1109 will be implemented per Appendix G in GP-1100, "Strategic Asset Management Plan (SAMP) - Gas Operations SAMP and AMPs Communication Plan Summary."

7. Work-in-Progress Direction

NA

8. Review Frequency

☒ No Change to Review Frequency

At least once every calendar year, not to exceed 15 months, to the date.

9. Cancellations

NA

10. Manuals

☒ No Change to Manuals

11. Document Properties

Functional Area

<input type="checkbox"/> CNG-LNG	<input type="checkbox"/> Compression and Processing	<input type="checkbox"/> Customer Connected Equipment	<input checked="" type="checkbox"/> Distribution Mains
<input checked="" type="checkbox"/> Distribution Services	<input type="checkbox"/> Measurement and Control	<input type="checkbox"/> Storage	<input type="checkbox"/> Transmission Pipe



Gas Guidance Document Analysis (GDA)

Gas Data Asset Management Plan

GP-1109, Rev. 7

Target Audiences

<input checked="" type="checkbox"/> Asset Strategy	<input type="checkbox"/> Facility Integrity Management	<input type="checkbox"/> Leak Repair	<input checked="" type="checkbox"/> R&D and Innovation
<input type="checkbox"/> Associate Distribution Engineers	<input type="checkbox"/> GPOM (I&R)	<input type="checkbox"/> Leak Survey	<input type="checkbox"/> Records and Information Management
<input checked="" type="checkbox"/> Compliance and Risk	<input type="checkbox"/> Gas Control Strategy and Support	<input type="checkbox"/> Locate and Mark	<input type="checkbox"/> Regulatory Compliance
<input type="checkbox"/> Contract Management	<input type="checkbox"/> Gas Distribution Control Center	<input type="checkbox"/> Mapping (Transmission and Distribution)	<input checked="" type="checkbox"/> Risk Management
<input type="checkbox"/> Corrosion Mechanics	<input type="checkbox"/> Gas Emergency Preparedness	<input type="checkbox"/> Metering Plant	<input type="checkbox"/> Service Planning
<input type="checkbox"/> Corrosion Services	<input checked="" type="checkbox"/> Gas Operations Leadership	<input type="checkbox"/> Picarro	<input type="checkbox"/> Sourcing
<input type="checkbox"/> Data Quality	<input type="checkbox"/> Gas Service Representatives	<input type="checkbox"/> Pipeline Engineering	<input type="checkbox"/> Super Gas Ops
<input type="checkbox"/> Dispatch and Scheduling	<input type="checkbox"/> Gas Transmission Control Center	<input type="checkbox"/> Pipeline Safety Enhancement Plan Engineering	<input type="checkbox"/> System Planning
<input type="checkbox"/> Distribution Construction	<input type="checkbox"/> General Construction	<input checked="" type="checkbox"/> Program Management (Transmission and Distribution)	<input type="checkbox"/> Technology and Tools
<input checked="" type="checkbox"/> Distribution Engineering	<input type="checkbox"/> Hydrotesting	<input checked="" type="checkbox"/> Project Management (Transmission and Distribution)	<input type="checkbox"/> Transmission Construction
<input checked="" type="checkbox"/> Distribution Integrity Management	<input checked="" type="checkbox"/> Investment Planning	<input type="checkbox"/> Qualifications	<input type="checkbox"/> Transmission Engineering
<input type="checkbox"/> Estimating	<input type="checkbox"/> LNG/CNG Operations	<input type="checkbox"/> Quality and Improvement	<input type="checkbox"/> Transmission Integrity Management

Business Processes (GODOCS)

CONSTRUCTION	ENGINEERING	MAINTENANCE & OPERATIONS	EMERGENCY / ADMIN
<input type="checkbox"/> As-Built	<input type="checkbox"/> Applicant Design Manual	<input type="checkbox"/> Corrosion Control	<input type="checkbox"/> Dispatch and Scheduling
<input type="checkbox"/> Coatings	<input type="checkbox"/> Asset Knowledge Management	<input type="checkbox"/> Damage Prevention (indicate subtype) ¹	<input type="checkbox"/> Emergency Plans
<input type="checkbox"/> Construction Methods	<input type="checkbox"/> Distribution Engineering	<input type="checkbox"/> Field Services (GSRs)	<input type="checkbox"/> Gas Guidance Document Process
<input type="checkbox"/> Environmental and Safety	<input checked="" type="checkbox"/> Engineering for Integrity Management	<input type="checkbox"/> Gas Control and Clearances	<input type="checkbox"/> Gas Operations Quality Management
<input type="checkbox"/> Excavation	<input type="checkbox"/> Engineering Material Specifications	<input checked="" type="checkbox"/> Integrity Management (IM)	<input checked="" type="checkbox"/> Gas Safety Excellence
<input type="checkbox"/> Gas Design Standards for Construction	<input type="checkbox"/> Gas Design Standards	<input type="checkbox"/> Leak Survey and Response	<input type="checkbox"/> Operator Qualifications (OQ)
<input type="checkbox"/> Inspection and Operation	<input checked="" type="checkbox"/> Process Safety	<input type="checkbox"/> Major Stations	
<input checked="" type="checkbox"/> Plastic	<input type="checkbox"/> System Planning	<input type="checkbox"/> Measurement and Regulation (M&R)	
<input type="checkbox"/> Steel Pressure Control	<input type="checkbox"/> Transmission Engineering	<input checked="" type="checkbox"/> Steel Pipeline Maintenance and Repair	
<input type="checkbox"/> Strength Testing and Commissioning		<input type="checkbox"/> Valve Maintenance	
<input type="checkbox"/> Welding and Nondestructive Examination (NDE)			

1. Damage Prevention subtypes: Locate and Mark, Patrolling, Public Awareness

Document Control

This section contains Pacific Gas and Electric (PG&E) information related to the ownership and maintenance of this document. This document undergoes an annual review and update as needed and in compliance with [EMER-2001S, Company Emergency Operations Plans Standard](#) published in [Guidance Document Library \(GDL\)](#). Emergency Preparedness and Response (EP&R) maintains this Company Emergency Response Plan (CERP).

Change Record

The Change Record table given below is used to record all changes made to the plan. It describes the revisions made, the locations of the revisions, the names of the persons responsible for the revisions, and dates of revisions:

Section	Person Responsible for Revision	Change	Date
Throughout	[REDACTED]	Applied red color to all Operations Section organization charts.	6/17/24
Throughout	Various	Made edits to grammar, syntax, and context (to improve clarity). Moved or renamed sections to improve the flow of information and combine related topics. Updated and added document references, links, and job titles.	ongoing
1.2	[REDACTED]	Updated scope to reference ICS principles and planned events and incidents.	6/18/24
1.5	[REDACTED]	Added content re: PG&E Safety excellence Management System	7/3/24
1.6	[REDACTED]	Updated assumptions to include CERP applicability to planned events and incidents and included a reference to CRR correlation and the Threat and Hazard Identification and Risk Assessment (THIRA). Added clarifying content unifying Lean principles and ICS.	10/8/24
1.6.1	[REDACTED]	Updated assumptions to include CERP applicability to planned events and incidents and included a reference to CRR correlation and the Threat and Hazard Identification and Risk Assessment (THIRA).	6/18/24
1.6.2	[REDACTED]	Added Data Modeling and Planning Strategies	7/2/24
1.6.3	[REDACTED]	Updated the AFN definition.	10/22/24

Company Emergency Response Plan

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Section	Person Responsible for Revision	Change	Date
1.6.5	[REDACTED]	Changed section title from "PG&E's Emergency Response Priorities" to "Risk Identification and Reduction" and updated the content.	10/24/24
1.7	[REDACTED]	Included PG&E's use of SEMS ICS and updated general planning assumptions.	7/2/24
1.8	[REDACTED]	Created a new section to define the CERP work categories.	7/26/24
1.10	[REDACTED]	Added content supporting the regulatory requirements to PG&E for emergency planning, G.O. 112F and 49 CFR § 192.615 and clarifying clause for G.O. 166.	10/24/24
2.4	[REDACTED]	Added references to and introduction and purpose detail from EMER-3003M-Gas Emergency Response Plan .	7/25/24
2.7.3 and 2.7.4	[REDACTED]	Made corrections and explained that the Gas Response Operations team oversees Gas Operation's incident preparedness and response programs.	11/26/2024
2.10	[REDACTED]	Updated IMT content for Electric and created a new subsection for Power Generation.	11/18/24
Figure 3-1	[REDACTED]	Updated and added Incident Management Team under Gas Operations	11/26/2024
3.2.2	[REDACTED]	Additional language added to explain how the EOC may be activated in a notice event (PSPS event) differently than a "no-notice event."	10/24/24
3.3.1	[REDACTED]	Noted potential scaled operations from field to DSR, OEC, and REC levels.	6/17/24
3.3	[REDACTED]	Removed "Incident/Event Plan Integration and Support" subsection. Followed Section 2 in v.9.	6/17/24
3.5.7	[REDACTED]	Detail added explaining how coworkers will administratively address debris in the field.	3/25/24
4.3	[REDACTED]	Added clarification regarding chair of CIMC.	10/24/24
4.4.5	[REDACTED]	Added how the company manages presented donations for disaster victims or their communities.	7/25/24
4.5.3	[REDACTED]	Updated the Contact Service Centers and PG&E Website information.	11/1/2024
5.2.2	[REDACTED]	Moved HAWC content to this location and added new content regarding the Live Incident Dashboard	7/17/24

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Company Emergency Response Plan

Section	Person Responsible for Revision	Change	Date
5.2.2.1	[REDACTED]	Added EMER-3002M-Electric Annex LID content and clarified PSIP information.	7/17/24
5.2.3	[REDACTED]	Added SIPT APBD reporting content consistent with EMER-3002M-Electric Annex.	3/25/24
5.3.5.1	[REDACTED]	Rewrote the section to align with the PSPS Standard and Annex (Minimum Fire Potential Conditions).	10/24/24
5.5.1	[REDACTED]	Updated DASH content to include reference to 60–90-minute report period and magnitude 5.0 or greater events.	7/30/24
5.5.2	[REDACTED]	Added DSO SOPP model output content.	4/9/24
5.5.5	[REDACTED]	Added OPW model information.	7/10/24
6	[REDACTED]	Created a new section, “After-Action Reporting” addressing hotwashes and AARs.	7/2/24
7.2	[REDACTED]	Updated the definition of Operational Areas	11/13/2024
7.4.3	[REDACTED]	Deleted reference to ‘EOC Support’ position. Section reference is to v.9 CERP outline	5/29/24
8.1	[REDACTED]	Added new subsection “EOC Response and Operations Team”.	7/2/24
8.2.1	[REDACTED]	Added PSPS OIC subsection. FA rewrote the paragraph to align with the PSPS Annex’s Section 3.2.1, Officer-in-Charge (OIC).	6/17/24
8.2.4	[REDACTED]	This section has been updated to relate to PG&E’s use of the safety officer.	10/18/24
8.3.5	[REDACTED]	Updates to Veg Management Branch content by FA.	10/22/24
8.5.6	[REDACTED]	Updated Technical Specialist header to reflect PSC direct report relationship and move the content to the end of the section.	5/29/24
8.5.6	[REDACTED]	New unit description content. Removed Technical Specialists from Documentation Unit as they report directly to PSC now reflected in 7.5.6. Also, deleted “DMS/OMT” from “IT Tech Specialist” bullet.	5/29/24
8.5.6	[REDACTED]	FA changed title to “PSPS Technical Lead” to “PSPS Scoping Specialist” to better align with their systems.	10/24/24

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Section	Person Responsible for Revision	Change	Date
8.6	[REDACTED]	Made multiple moves to properly organize the units that comprise the branches within Logistics.	10/23/24
8.7	[REDACTED]	Added content to reflect positions that comprise the EOC F&A Section.	10/15/24
8.7.1	[REDACTED]	Added content to build out the functions of the HR Unit.	11/30/24
9.3	[REDACTED]	Updated the subsection. Added reference to 3005S Emergency Field Site Request and Approval Standard and removed the duplicate information.	10/23/24
9.4	[REDACTED]	Added references to EMER-4010S Mobile Command Vehicle Standard and TRAN-3040M MCV Management and Deployment and removed the duplicate information.	10/31/24
9.5	[REDACTED]	Created a new Customer Support Unit section.	10/24/24
9.6	[REDACTED]	Added new content for the HERD units	11/6/2024
9.3	[REDACTED]	Added content to refine the discussion around Operational Areas and the five levels of SEMS.	10/22/24
9.4.2.1	[REDACTED]	Moved Cal OES content to this location and added section CUEA.	7/12/24
9.6.9	[REDACTED]	Added section Bureau of Land Management.	7/31/24
10.1	[REDACTED]	Reorganized and rewrote industry content to better seat CUEA context to other utilities.	11/4/24
10.5	[REDACTED]	Moved Stafford Act content to FEMA since that is the implementing agency and simplified opening paragraph to a general introduction to federal support and coordination.	11/15/2024
Appendix F	[REDACTED]	Removed table of EOC forms.	7/30/24
Table 2-1	[REDACTED]	Added People element.	10/10/24
Table 5-1	[REDACTED]	Updated PSPS weather impact considerations.	10/24/24
Table 8-1	[REDACTED]	Deleted table line denoting officers.	10/22/24
Table 9-1	[REDACTED]	Updated ITCC section of table, revising first and last bullet in ITCC section.	11/05/2024
Table 11-1	[REDACTED]	Made changes to the units to align to current PG&E practice.	10/21/24
Figure 5-4	[REDACTED]	Changed 20–30-minute arrow to 60-90 minutes.	7/31/24

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Company Emergency Response Plan

Section	Person Responsible for Revision	Change	Date
Figure 8-6		Revised Logistics Org Chart to reflect ICS style of org charts	11/12/24

Revision Log

Document Number	Title
NA	NA

Reference Documents

Document Number	Title
EMER-01	Emergency Preparedness and Response Policy
EMER-2001S	Company Emergency Response Plans Standard
EMER-2003S	EOC Activation After-Action Report (AAR) Process Standard
EMER-2004S	EOC Documentation Standard
EMER-2502M	Integrated Preparedness Plan (IPP)
EMER-3001M-Att01	Cal OES Regional Contacts
EMER-3001M-Att02	County Government Contacts
EMER-3005S	PG&E's Emergency Field Site Request and Approval Standard
EMER-3105M	Wildfire Annex
EMER-3106M-01	Access and Functional Needs (AFN) Plan
EMER-4002S	Public Safety Specialist Standard
EMER-4010S	Mobile Command Vehicle Standard
EMER-4501S	Electric Incident Management Team Standard
EMER-4510S	Operations Emergency Center (OEC) Activation Requirements,
SAFE-5000M	PG&E Safety Excellence Management System Manual
RISK-5001S	Enterprise and Operational Risk Management Standard
RISK-5001P-01	Enterprise and Operational Risk Management Procedure
RISK-5001P-02	Maintaining the Corporate Risk Register
EMER-6010S	Gas Emergency Response Plan Training, Exercise, and Evaluation
EMER-7001S	Enhanced Customer and Community Support During All Hazards Standard
EMER-7001P-02	CSU Ford Transit Operating Procedure
EMER-7001P-03	All Hazards Life Agent Outbound Call Procedure

Document Control

Emergency Preparedness and Response (EP&R) Strategy & Execution maintains the Gas Emergency Response Plan Annex (GERP) to the [Company Emergency Response Plan \(CERP\)](#). This section records the revisions made to the GERP, the responsible persons for its preparation, maintenance, and update, and signature authorities for Plan approval.

Change Record

The following table shows changes made to the plan since the last revision (Version 13.0).

Section	Person Responsible for Revision	Change	Date
Throughout	[REDACTED]	Changed “Gas Emergency Preparedness” to “Emergency Field Operations.”	10/23/24
Throughout	[REDACTED]	Updated references to the Gas Integrity management Earthquake Playbook.	11/4/24
Throughout	[REDACTED]	Removed references to the GERP@pge.com mailbox.	11/29/24
Reference Documents	[REDACTED]	Consistent with EP&R CERP-Annex Master Template, moved subsection 1.3 Plans and Standards content to Reference Document table.	10/14/24
1.2	[REDACTED]	Updated to aligned with CERP subsection 1.2, Scope; removed duplicative NIMS, SEMS and ICS content contained in CERP subsection 5.1, ICS-Based Incident Management.	10/14/24
1.2.1	[REDACTED]	Added new ICS terms and definitions subsection.	11/14/24
1.3	[REDACTED]	Moved consistent with EP&R CERP-Annex Master Template . 3.1 Planning Assumptions to subsection 1.3.	10/14/24

Section	Person Responsible for Revision	Change	Date
1.4		Replaced Division of Oil, Gas, and Geothermal Resources (DOGGR) Regulations with California Code of Regulations, Chapter 4, Subchapter 1, Article 5, § 1726.3.1. Emergency Response Plan; added US DOT Pipeline and Hazardous Materials Safety Administration (PHMSA) 49 CFR Part 192.12 underground natural gas facilities regulation reference.	10/21/24
1.4.2		Spelled out first GEP reference in subsection 1.4.2 and within Appendix A1, Acronym list	10/7/24
1.4.2		Updated to reference EP&R Training and Exercises training role. Also, changed Multi-Year Training and Exercise Program (MYTEP) to Integrated Preparedness Plan (IPP).	10/14/24
1.5.1		Updated content to include timeline outlining Recovery Point Objectives (RPOs) and Recovery Time Objectives (RTOs), along with reference to RPOs and RTOs for the GCC.	11/19/24
1.5.3.1		Added PSEMS content consistent with SAFE-5000M .	11/18/24
2.3.1		Moved role of Emergency Field Operations (formerly Gas Emergency Preparedness) from 1.4 to Section 2, Emergency Organization and Responsibilities.	10/14/24
2.3.1		Updated Wildfire, Emergency & Operations (WEO) EFO EPC ICS Advisor description.	11/5/24
2.3.1.2.1		Noted alignment with EMER-3001M (CERP) , Appendix C, Levels of Emergencies and Action Criteria.	8/23/24
2.5		Added consistent with EMER-3005M (CERP) new “Emergency Sites” subsection; changed “emergency field site” references to “emergency sites.”	10/7/24

Section	Person Responsible for Revision	Change	Date
2.6.2	[REDACTED]	Update subsection to describe three operational conditions: (1) level 1-1 incident led by IC at an ICP, (2) level 3-5 incident with IMT, and (3) EOC Operations Section Gas Operations Branch Director.	11/14/24
3.2	[REDACTED]	Moved NIMS, SEMS, and ICS content to subsection 1.2.	10/14/24
3.2.4.1.1	[REDACTED]	Added reference to Hazard Awareness Warning Center.	11/4/24
3.2.4.1.2	[REDACTED]	Added reference to EMER-3105M and EMER-3108M, CERP Wildfire and Extreme Weather annexes.	10/14/24
3.2.4.12.4	[REDACTED]	Updated gas distribution integrity management content.	11/4/24
3.2.4.13.2	[REDACTED]	Updated Gas Emergency Shutdown Zone (ESZ) content.	11/4/24
5	[REDACTED]	Added Training and Exercise section per EPR CERP-Annex Master Template; moved 1.4.2 GERP Training and Exercise content to subsection 5.1.	10/14/24
5.1.2	[REDACTED]	Changed MYTEP to Integrated Preparedness Plan.	10/14/24
Figure 1-2	[REDACTED]	Added “Gas Incident Levels, Operations and Facilities” graphic aligned with EMER-3001M figure 3-1, PG&E Operational Levels and Emergency Facilities.	11/14/24
Figure 4.2	[REDACTED] [REDACTED]	Updated DASH earthquake scenario to USGS Event ID: 99901673 ShakeMap Version No. 1.	11/19/24
Table 3-1	[REDACTED]	Updated to reflect Well Control Tactical Considerations (WCTC) plan for storage wells.	10/21/24

Revision Log

Document Number	Title
NA	NA

Reference Documents

Document Number	Title
EMER-01	<i>Emergency Preparedness & Response Policy</i>
EMER-1001S	<i>Business Continuity Planning, Training, Exercise, and Improvement Planning Standard</i>
EMER-2001S	<i>Company Emergency Operations Plans Standard</i>
EMER-2001S-F01	<i>Change Request Form</i>
EMER-3001M	<i>Company Emergency Response Plan (CERP)</i>
EMER-3005M	<u>CERP Logistics Annex</u>
EMER-3101M	<i>CERP Earthquake Annex</i>
EMER-3101M-02	<i>Gas Integrity Management Earthquake Playbook</i>
EMER-3102M	<i>CERP Cybersecurity Annex</i>
EMER-4510S	<i>Operations Emergency Center (OEC) Activation Requirements</i>
EMER-6010S	<i>Gas Emergency Response Plan Training</i>
EMER-7001S	<i>Enhanced Customer and Community Support During All Hazards Standard</i>
EMER-7001P-05	<i>All-Hazards Community Resource Center (CRC) Deployment Procedure</i>
TD-4110S	<i>Gas Leak Survey and Detection Program</i>
TD-4412P-07-JA01	<i>Identification of Common Geohazards</i>
TD-4435S	<i>Gas System Curtailment Requirements</i>
TD-4435P-01	<i>Extreme Weather-Related Gas Service Curtailment Procedure</i>
TD-4814S	<i>Gas Transmission Heavy Rainfall Response Standard</i>
TD-4814P-01	<i>Gas Transmission Heavy Rainfall Preparation and Response</i>
TD-5801S	<i>Pipeline Public Awareness Program</i>

Document Number	Title
SAFE-5000M	<i>PG&E Safety Excellence Management System Manual</i>
	<i>PG&E Gas Safety Plan</i>

Document Preparers

Name	Position
[REDACTED]	Emergency Management Supervisor, Emergency Field Operations
[REDACTED]	Emergency Management Specialist, Expert

Document Owner

Name	Position
Joe Forline	Senior Vice President, Gas Operations

Document Reviewers

Gas System Operations (GSO, Gas Technical Document Management, Wildfire, Emergency & Operations (WEO) Emergency Preparedness & Response and Emergency Field Operations.

Name	Position
[REDACTED]	Director, Gas Control
[REDACTED]	EP&R Strategy & Execution, Planning Manager
[REDACTED]	EP&R Strategy & Execution, Training & Exercise Manager
[REDACTED]	Gas Integrity Management Engineer, Expert
[REDACTED]	Electric Emergency Management Specialist, Expert, EFO EMS
[REDACTED]	Director, Gas Transmission Portfolio Management and Engineering
[REDACTED]	Director, EP&R Strategy & Execution
[REDACTED]	Gas Integrity Management Engineer, Principal
[REDACTED]	Gas Integrity Management Engineer, Senior

██████████	Director, Enterprise Information Governance
██████████	Gas System Supervisor, Gas Control Operations
██████████	Manager, Meteorology/Fire Sciences
██████████	Expert Emergency Preparedness Coordinator, Emergency Field Operations
██████████	Strategic Planning, Chief, Gas Facilities & Storage Engineering
██████████	Senior Manager, Emergency Field Operations
██████████	Gas Control Operations Specialist, Senior
██████████	Supervisor, Engineering Standards, Pipeline
██████████	Sr Director, Gas Facilities and Storage
██████████	Sr. Manager, Emergency Management, Public Safety Specialist Program
██████████	Supply Chain Emergency Management Specialist, Principal
██████████	Supervisor Gas Transmission Clearance
██████████	Gas Program Manager, Principal
██████████	Geosciences Consultant, Expert
██████████	Regional Operations Specialist, Principal (Central Valley)
██████████	Supervisor, Emergency Management, Emergency Field Operations (EFO) Emergency Management Specialist (EMS)
██████████	Senior Director, Gas Transmission and Distribution
██████████	Supply Chain Emergency Management Specialist, Principal
██████████	Supervisor, Environmental

Document Approvers

Name	Position
██████████	Senior Director, Gas System Operations & Maintenance
Joe Forline	Senior Vice President, Gas Operations
Angie Gibson	Vice President, Emergency Preparedness & Response

PACIFIC GAS AND ELECTRIC COMPANY
ATTACHMENT 3
CHANGE LOG FOR 2025 GAS SAFETY PLAN

Attachment 3
Change Log for 2025 Gas Safety Plan

This attachment lists notable changes in both the report narrative and the attachments between PG&E's 2024 Gas Safety Plan and 2025 Gas Safety Plan.

<u>Section No.</u>	<u>Section Title</u>	<u>Change Description</u>
I	Introduction	Updated number of transmission pipeline miles to 5,650. Updated number of distribution pipeline miles to 45,200 miles. Updated to 4.8 million customer meters
I.3	PG&E Safety Excellence Management System	Added Gas Independent Third Party Certification To Industry Standards section to highlight what certifications deliver.
I.5	Workforce Safety	Added Figure 5, Hazardous Energy Wheel
I.6	Rewarding Safety Excellence	Added Regional Safety Recognition, Sibley Award, and Britton Award to the list of safety excellence awards.
II	Safety Culture	Added information on new ergonomic software.
II.2	PG&E Company and Gas Safety Committees	Updated Table 2 to reflect committee meetings added in 2024.
IV.2.a	Gas Storage	Updated storage well count to 105, as well as 16 miles of transmission pipe.
IV.2.c	Transmission Pipe	Updated number of transmission pipeline miles to 5,650.
IV.2.d	Measurement and Control	Updated counts for gas transmission stations, transmission large volumn customer type facilities, distribution district regulator stations and farm taps.
IV.2.e	Distribution Mains and Services	Updated miles of distribution main pipeline, count of service lines, and miles of pipeline that deliver gas from the distribution mains to assets on the Customer Connected Equipment family on the downstream side.
IV.2.f	Customer Connected Equipment	Updated count for gas meters and associated regulators, over-protection devices, shut off values, pipeing, and fittings that connect the gas distribution service to the customer.
IV.2.h	Data	Updated Table 11 to include value improvements between 2023 and 2024.
IV.2.h	Data	Added IRG program compliance to table 14
IV.4	Records and Information Management	Included migration of MAOP / GORR in April, 2024, and GEMT in December, 2024, to CRM.
IV.5.a	Damage Prevention	Modified Table 15 to include Human Performance training.
IV.5.f	Vintage Pipe Replacement	Added a figure for prioritizatin tiers for pipeline replacement.
IV.5.h	Corrosion Control	Added language to acknowledge regulation changes as a result of the PHMSA Mega Rule Part 2 publishing.
IV.5.h	Corrosion Control	Added language to note PG&E's participation in the Association for Material Protection and Performance (AMPP) committee.
IV.7.b	Clearance Operations	Added information on centralized department and figure noting counts of clearances taken in 2024.
IV.7.c	Security	Added information on use of AI as well as noted an audit from the TSA CFSR and CSR.
VII.4	Research Development and Demonstration	Added figure of schematic of the SPADE technology.
VII.5.i	Additional Benchmarking Efforts	Added cross-bore intrusions found to Table 30
IV.7.e.ii	Company Emergency Response Plan	Attachment 3 to this Plan contains the Company Emergency Response Plan change log for 2023.
IV.7.e.iii	Gas Emergency Response Plan	Attachment 3 to this Plan contains the Gas Emergency Response Plan change log for 2023.
VI.4	Supportive Controls	Added Figure 65 depicting Compliance Supportive Controls.
VII.1.a	Electric and Gas Performance and Process Improvement Team (E&G PPI)	This section highlights the establishment of 15 Lean Model Standard Yards across the service territory.
VII.2	Quality Management	Updated Table 31 to include the Valve Maintenance program.

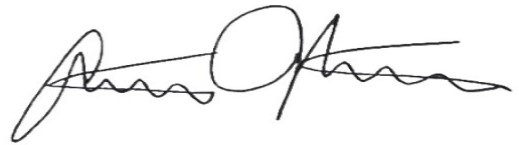
VERIFICATION

We, the undersigned, state:

We are officers of PACIFIC GAS AND ELECTRIC COMPANY, a California corporation, and are authorized to make this verification for and on behalf of said corporation, and we make this verification for that reason. We have read the foregoing 2025 Gas Safety Plan, and are informed and believe the matters therein are true and, on that ground, we allege that the matters stated therein are true.

We declare under penalty of perjury under the laws of the state of California that the foregoing is true and correct.

Executed at San Ramon, California, on March 14, 2025.



Austin Hastings
VICE PRESIDENT
GAS ENGINEERING
PACIFIC GAS AND ELECTRIC COMPANY



Joseph Forline
SENIOR VICE PRESIDENT
GAS OPERATIONS
PACIFIC GAS AND ELECTRIC COMPANY