PIPELINE SAFETY MANAGEMENT SYSTEM 2012

GILL RANCH STORAGE®

Pipeline Safety Management System 2012

Sound Management and Practical Guidance Enhances Worker Safety, Communications, Teamwork and Ultimately Public Protection, Environmental Stewardship and Profitability.

Gill Ranch Storage

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RECORD OF CHANGE			
DATE	Program	Record of Change, Amendment or Review	Reviewed and Approved
The record of change for this program is maintained in the 'Pipeline Compliance Plan Data Book." Refer to that data book for a record of change for this program.			

1. Introduction

Gill Ranch Storage, LLC (GRS) is the operator of the Gill Ranch Storage Project (Gill Ranch). GRS owns a 75% undivided interest in Gill Ranch and PG&E owns a 25% undivided interest. Except for the 115 kV power line, which is owned and operated by PG&E, GRS is the operator of Gill Ranch pursuant to an Operator Agreement between GRS and PG&E.

Gill Ranch is located in Madera and Fresno Counties, and is comprised of an underground natural gas storage field, a compressor station for injecting and withdrawing gas from the storage field and associated dehydration and control facilities, an approximately 27-mile, 30-inch natural gas pipeline connecting the Gill Ranch to Pacific Gas and Electric Company's (PG&E) Line 401, 10- to 16-inch gathering and distribution pipelines that transport gas between injection and withdrawal wells and the central compressor site, an electric substation located at the compressor station, and a 9-mile 115 kV power line connecting the substation to PG&E's Dairyland-Mendota 115 kV power line to serve the compressors and other facilities. The California Public Utilities Commission (CPUC or Commission) issued a certificate of public convenience and necessity for the Gill Ranch in 2009 (Decision No. 09-10-035).

Gill Ranch was designed and constructed to meet the highest safety and environmental protection standards. GRS' operation and maintenance practices were developed and implemented to assure the safe and reliable storage and transportation of natural gas. GRS fully embraces the need for sound engineering and construction practices, effective integrity management programs, qualified personnel, safe operations, protection of the public and environment and effective emergency management capabilities.

The GRS Executive Management Team believes that the development of a single pipeline safety management system is the most effective way to assure that all company- and regulatory-required safety, health and environmental protection requirements are fully defined and integrated into GRS' business and operational decisions and practices. Furthermore, GRS believes that through such a program, it is able to reinforce a proactive corporate safety culture dedicated to worker protection, public safety and protection of the environment.

Based on these beliefs, the GRS Executive Management Team has developed this Pipeline Safety Management System (PSMS) to serve as the principle program for providing a disciplined, proactive framework for managing the operations, maintenance and integrity at Gill Ranch.

2. Pipeline Safety Management System Goals and Expectations

The goal of the PSMS is to (1) operate and maintain Gill Ranch in a safe and reliable manner, by assuring compliance with the applicable laws and regulations, and CPUC and United States Department of Transportation (DOT) Pipeline and Hazardous Materials Safety Administration (PHMSA) requirements, and (2) increase the safety and reliability of the Gill Ranch pipeline systems by reducing and/or eliminating accidents, incidents, explosions, fires, and other dangerous conditions.

GRS expectation is that the full implementation of the PSMS will further its ability to:

1. Assure the health and safety of Gill Ranch personnel, contractors, visitors and the public;
2. Maintain a well qualified workforce;
3. Apply sound pipeline and facility design and construction principles;
4. Utilize effective and timely operations and maintenance practices, programs and procedures;
5. Assure the safety and reliability of Gill Ranch natural gas storage and pipeline systems;
6. Conduct "scheduled" and "for cause" integrity assessments;
7. Be prepared to respond to and recover from emergencies;
8. Protect the environment; and
9. Evaluate our operating risks and implement improvements and protective measures as needed.

In order to achieve these goals, GRS has developed the PSMS safety performance metrics that will be used to evaluate the effectiveness of the PSMS, and identify and evaluate "Real and Potential Pipeline Safety Threats" which will in turn allow GRS to implement the appropriate improvements and/or corrective actions.

3. Corporate Culture and Senior Management

The culture of an organization is derived from management's actions, attitudes and examples. Only by walking the talk can an organization develop, communicate, implement and sustain a proactive safety culture. GRS management recognizes that a strong safety culture is the only effective way to minimize and/or prevent accidents and/or incidents.

The GRS Executive Management Team fully embraces its responsibility to provide and maintain a safe workplace that results in the safety and health of our personnel and contractors, public protection and protection of the environment.

The GRS Executive Management Team also believes that they are responsible for the creation, implementation and maintenance of the GRS corporate safety culture by:

1. Actively supporting and participating in the development, implementation and sustainability of a safe workplace and protection of the public and the environment by clearly defining:
    - how to communicate safety sensitive information,
    - how to implement and maintain its operations and maintenance program,
    - how to implement and maintain its safety, health and environmental protection policies,
    - how to implement other safety sensitive programs and procedures throughout the organization.
2. Creating the environment where the workforce has the opportunity to participate in the development and implementation of the PSMS.
3. Communicating the expectation that all personnel execute their job responsibilities in a safe, healthy and environmentally responsible manner by following the established operations and maintenance, safety, health, and environmental, policies, programs and procedures.
4. Communicating the Corporate goal of "No Accidents and/or Incidents."
5. Communicating that all accidents and incidents are preventable and that an accident/incident free workplace is of the highest priority.

GRS management believes that the best way to assure the sustainability of this safety culture is through the establishment and use of the PSMS. It is through the development and implementation of PSMS that GRS can fully integrate its safety, health and environmental management practices into its business and operational management systems.

Based on these beliefs, the GRS Executive Management Team has established a "Pipeline Safety Management Team" for the purpose of developing, implementing and managing the PSMS.

4. Pipeline Safety Management Team

4(A). Responsibility

The Pipeline Safety Management Team (PSMT) was organized and charged with developing, implementing and maintaining an effective, straight forward pipeline safety management system that supports a qualified workforce in the identification, evaluation and mitigation of pipeline operating hazards ("threats").

The PSMT is responsible for ensuring that workload and technical capability needs of each facility has been evaluated and that the facility is properly staffed and trained to safety operate the pipeline system in accordance with the provisions of the Pipeline Safety Management System Plan.

4(B). Organizational Structure

Our PSMS has been designed to be as organizationally flat as possible while involving key personnel from the executive level to technical specialists and operations personnel.

The GRS Executive Management Team has undertaken a leadership role in the development of this PSMS. The GRS President is responsible for assigning key personnel to the PSMT (except for the GRS operations representative who is elected by their peers). The GRS President leads the team and assumes the responsibility for assuring the development, implementation and management of the PSMS.

Collectively, the team has eight (8) functional areas of expertise (Knowledge, Skill, and Ability) that represents a cross-section of the company and includes:

Executive Management	
Engineering (Design and Construction)	Transportation Integrity Management
Operations and Maintenance	Regulatory Compliance
Worker Protection (Health and Safety)	Environmental Compliance & Stewardship
Public Safety (Health and Safety)	

4(C). GRS Operations Representative

GRS operations personnel shall elect one member from its ranks to serve a one-year term on the PSMT. Each year, the outgoing GRS operations representative and the incoming GRS operations representative shall begin the transition one month prior to the PSMS Annual Review Meeting. This transition of responsibilities shall conclude at the end of the PSMS Annual Review Meeting.

4(D). Stakeholder Participation

Stakeholders will be invited to participate in the PSMS Annual Review Meeting. During this review, both regulatory agencies and other stakeholders will be provided an opportunity to participate in the team's annual pipeline safety review process. The visiting members of the annual review will be recruited from Stakeholders such as the CPUC, local public officials (including Emergency Managers, Law Enforcement,

and Fire Departments) and other pipeline stakeholders. Stakeholder participation in ongoing PSMS activities is encouraged and shall be made available on an as needed basis; including outside of the Annual Review Meeting process as appropriate.

4(E). Allocation of Resources

The PSMT shall be responsible for allocating the necessary resources to assure the development, implementation and maintenance of the PSMS and its elements. The PSMT shall prepare and submit to the GRS Executive Management Team any resource needs that cannot be met by the PSMT. The GRS Executive Management Team shall review these requests and provide a timely response to the PSMT.

4(F). Communications with the CPUC and other regulatory agencies

All outside communications (such as with the CPUC, stakeholders, *etc*.) regarding the PSMS shall be with the GRS superintendent or a designated member of the PSMT.

5. Employee / Workforce Responsibilities

All GRS Personnel shall commit to actively participate in the PSMS by:

- Supporting GRS' corporate safety culture by working to identify real and potential hazards for the purpose of mitigating or eliminating accidents and/or incidents.
- Notifying management when they observe or perceive a breach of the GRS operations and maintenance, health, safety and/or environmental procedures.
- Recognizing their rights to notify regulatory agencies of safety and/or health hazards. This includes federal and State of California agencies including but not limited to Cal/OSHA, Cal/EPA, and the CPUC.

A sample Employee / Worker Acknowledgment and Commitment Form that each employee will be required to review and sign is has been included in this program for reference. See Appendix B, **Employee / Workforce Acknowledgement and Commitment**

6. PSMS Plan Availability and Feedback

The PSMS plan shall be available at the GRS corporate and field offices for review and comment. GRS Personnel, contractors and stakeholders are encouraged to become familiar with and involved in the PSMS. Each worker is encouraged to review the PSMS and communicate with and provide feedback to their supervisor and the PSMT regarding ways to make the workplace and the Gill Ranch pipeline system safer. As noted in12(G), Records Management, GRS will maintain a log of comments and suggestions received from its workforce, including the disposition of the comment or suggestion and a summary of the rationale for the disposition.

Contractor observations and feedback are also welcome and expected. Contractors often provide and/or conduct very specialized services which make their insight invaluable in GRS' continuous efforts to improve the safety and reliability of the Gill Ranch pipeline systems. Stakeholders may provide additional insight as to how well we communicate and participate in the public awareness and safety process. Their input is very important as we identify ways in which we can better communicate and assure public safety and environmental stewardship.

Inquiries and/or requests to review the PSMS shall be made to the PSMT Team Leader. These requests shall be processed in accordance with the GRS corporate policy for providing safety sensitive information and with applicable federal and California laws and regulations.

7. Implementation of Safety Improvements and/or Corrective Actions

The implementation of pipeline safety improvements and/or corrective actions shall be in accordance with all applicable laws, regulations and company requirements. Typically these improvements and/or corrective actions shall be completed based on the nature and severity of the identified pipeline safety threat(s).

GRS responses to all regulatory recommendations and/or requirements submitted to GRS by a regulatory agency (*e.g.* CPUC) should be documented by correspondence with the regulatory agency.

8. Pipeline Safety Management System Development Process

The development of the PSMS is based on a comprehensive safety philosophy that focuses on effective and timely observations, evaluations and measurements of historical as well as recent operations for the purpose of identifying and implementing safety improvements and/or corrective actions. It is the goal of the PSMT to develop and implement this program in such a way as to assure compliance with all applicable pipeline safety laws and regulations.

The PSMT shall take the following actions in the development and implementation of the PSMS:

1. Conduct the first PSMT meeting of GRS Operations personnel assigned and/or elected to the PSMT. This meeting will define member roles and responsibilities, review the PSMS elements and risk metrics and the proposed annual calendar. Non-company guests, visitors and team membership will be discussed in this meeting.
2. Consolidate each of the existing pipeline safety and reliability policies, programs and procedures into the PSMS making the PSMS the primary safety program for all current and future pipeline safety efforts. The components include the Pipeline Operations and Maintenance Plan (PL Compliance Plan, Notification and Reporting, Emergency Response Plan, Accident and Incident Investigation, Management of Change, Operator Qualification, Public Awareness, Pipeline Security, Inspection and Testing, Hydrostatic Pressure Testing, and Control Room Management), Transportation Integrity Management Plan, Earthquake Plan, GRS Anti-Drug and Alcohol Program, GRS Health and Safety Plan and the GRS Environmental Program.
3. Review lessons learned, historical pipeline accidents and/or incidents, including the San Bruno incident, and taking into consideration the findings of the National Transportation Safety Board (NTSB) and the jurisdictional agencies' findings and recommendations.
4. Using the PSMS Risk Metrics, conduct a baseline assessment of each policy, program and/or procedure that is included in the PSMS. This assessment shall evaluate each program's effectiveness in meeting both corporate and regulatory compliance requirements to operate all company pipeline assets in a safe, healthy and environmentally responsible manner. The goal of this review shall be to eliminate redundancy, improve communications and identify program improvements and/or corrective actions.
5. Update the PSMS Key Performance Indicators, Risk Metrics and PSMS Risk Metrics Summary based on the lessons learned from the PSMS baseline assessment.
6. Establish the PSMS goals and objectives for the next year or as needed to satisfy any Gill Ranch specific safety goals and/or objectives.
7. Schedule and hold the first PSMS meeting with the PSMT and Stakeholders for the purpose of reviewing the PSMS and the current goals and objectives.
8. Report to the GRS Executive Management Team on the status and progress of the PSMT in fully implementing the PSMS.

9. Pipeline Safety Management System Implementation Plan

The implementation of the PSMS is the responsibility of the PSMT and shall be in accordance with the following timeline:

9(A). Phase 1

1. Submit the PSMS to the CPUC by June 29, 2012.
2. Work with the CPUC (as requested) during the CPUC'S safety plan review process. This process is scheduled for completion by the CPUC by December 31, 2012, at which time the PSMS shall be approved and accepted, modified or rejected. The PSMT shall either implement the plan as identified herein or comply with the CPUC instructions as appropriate.
3. The PSMT shall continue to perform its duties in accordance with the PSMS pending the CPUC's review, approval, acceptance, modification or rejection.
4. The PSMT shall make the necessary changes in accordance with the CPUC's requirements/decision.
5. The PSMT shall continue the implementation process as defined herein; with adjustments to the process based on the CPUC's requirements/decision.
6. The PSMT may modify the PSMS from time to time based on need (e.g. lessons learned, revised or new procedures, etc.).
7. Adjustments to this schedule or the PSMS shall be made based on the work, findings and recommendations of the PSMT and approval of the GRS Executive Management Team.

9(B). Phase 2

1. A baseline assessment of the PSMS shall be conducted using the PSMS Risk Metrics.
2. The results of the baseline assessment shall be reviewed by the PSMT with safety system improvements and/or corrective actions being made as needed.
3. Conduct an annual review of the PSMS with additional reviews and meetings scheduled as needed to assure plan implementation and compliance. The PSMT will schedule and hold its first annual PSMS review. The PSMT, executive management, personnel and stakeholders will be invited to participate in each annual review as defined in the PSMS. The meeting will provide the opportunity for suggestions and/or questions to be submitted to the PSMT. These requests will be reviewed and addressed based on the findings of the PSMT. The individual(s) or group(s) making such requests and/or suggestions shall receive written notification of any further actions taken regarding their requests and/or suggestions.
4. All improvements and/or corrective actions shall be assigned to a responsible party and tracked to assure full implementation in accordance with GRS Management of Change Procedures.
5. The PSMT shall remain active in the PSMS through their normal job responsibilities. Based on the need, special study or Gill Ranch groups may be commissioned to address a specific pipeline safety improvement or threat.

6. The PSMT shall provide a semi-annual report to the GRS Executive Management Team. This report shall include the disposition of all recommended safety improvements, corrective actions, audits, accidents, near misses, *etc.*

10.Pipeline Safety Management System

10(A). Pipeline Safety Management System Organizational Structure

The PSMS is organized into nine (9) functional groups that have been designed to identify and minimize hazards and systemic risks in order to minimize accidents, explosions, fires, and other dangerous conditions, and protect the public and the gas corporation workforce. Each functional group is dedicated to a specific pipeline safety element consisting of existing policies, programs and procedures that have been developed from industry best practices, regulatory guidance and requirements, operating experience, worker protection and public safety needs. These polices, programs and procedures include performance measurements, regulatory audits, checklists and/or forms as needed.

The PSMS identifies and recognizes these policies, programs and procedures as the primary sources to be used in the implementation of the PSMS.

In order to measure the effectiveness of the PSMS, each of the functional groups will have a set of metrics, based on pipeline safety Key Performance Indicators (KPI) (included as Appendix E hereto), which will be used to measure the effectiveness of the PSMS and identify improvements and/or corrective actions as needed. The use of the KPIs will allow for the uniform and consistent trending and evaluation of all identified "pipeline safety threats" by PSMS functional group. The nine (9) PSMS functional groups are:

1. Management corporate culture, commitment and support
2. Worker Protection
3. Public Safety
4. Environmental Protection
5. System Reliability
    a. Engineering
    b. Operations and Maintenance
    c. Transportation Integrity Management
6. Inspections and Audits
7. Emergency Management and Response
8. Accident and Incident Investigation
9. Notification and Reporting

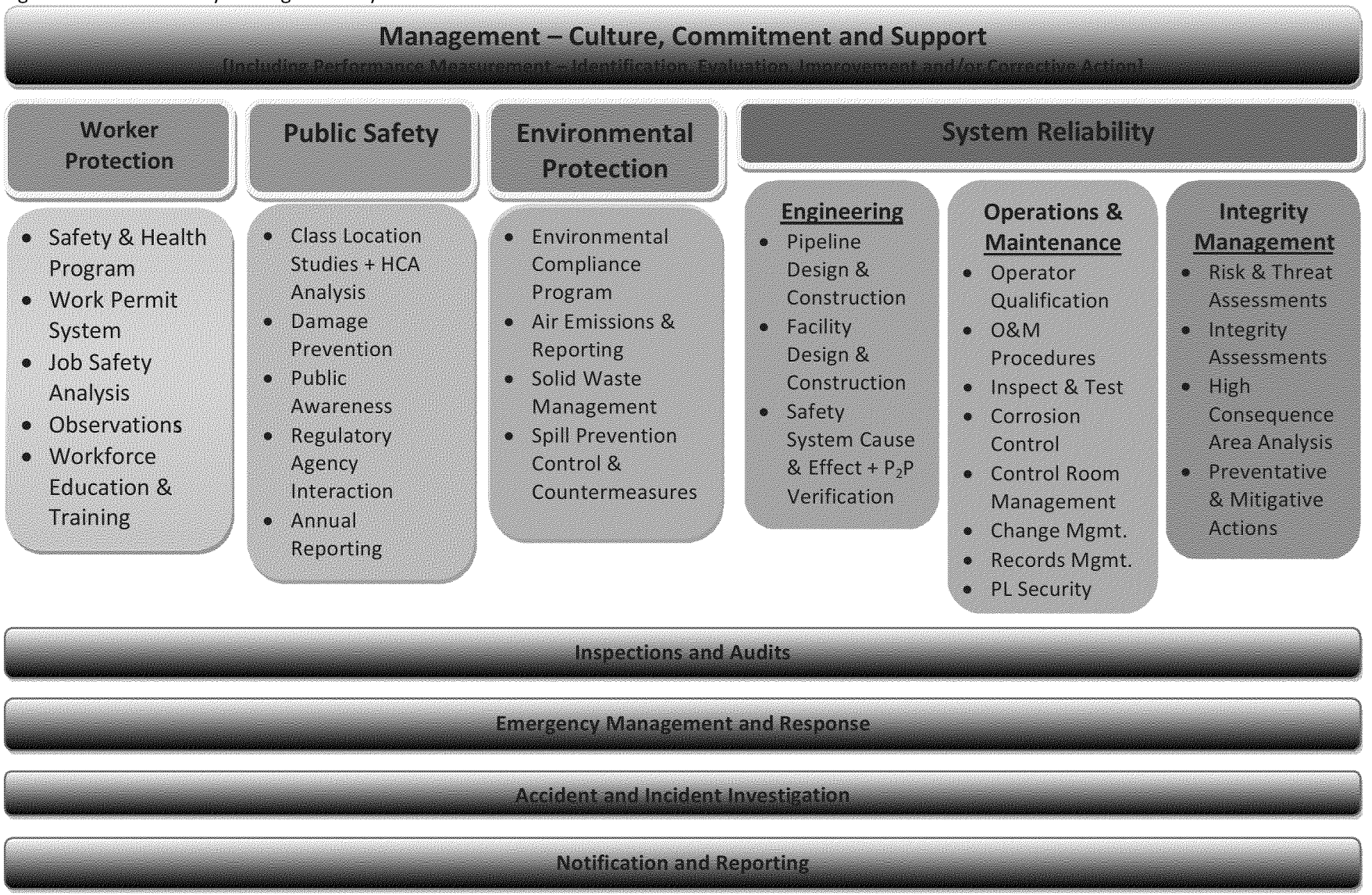
Figure 1 provides a graphical representation of the PSMS functional groups as viewed from the GRS business and operations organizational model.

10(B). How to use the Pipeline Safety Management System

The use of the PSMS falls into two (2) broad categories. First, each program element shall be used as the normal, abnormal and emergency operations dictate. That is, each element shall be used by the appropriate personnel in the execution of their respective job responsibilities. Second, the PSMS Risk Metrics (including KPI's) will be used to evaluate the effectiveness of each program element. This safety assessment shall then be used to identify pipeline safety improvements and/or corrective actions.

Furthermore, GRS personnel, management and stakeholders will be able to use this program to better understand pipeline operating risks and take the necessary proactive steps to better protect from and respond to accidents and/or incidents. (See 0 PSMS Functional Groups for a more detailed description of each group.

Figure 1. Process Safety Management System Overview



11.Pipeline Safety Management System Metrics

An essential element of the GRS PSMS is to identify, track and evaluate the effectiveness of the PSMS in identifying and mitigating hazards. As noted above, the PSMS metrics shall use Pipeline Safety Key Performance Indicators (KPIs). These KPIs have been developed for the purpose of:

- Evaluating the safety and reliability of the pipeline system for the purpose of improving safety as well as to prevent a severe accident or incident,
- Evaluating the effectiveness of each of the nine (9) functional groups in the PSMS, and
- Providing a consistent means of measuring key safety processes within an organization.

This process allows for a more accurate measurement of the entire PSMS effectiveness in safeguarding against hazard potentials and future events. By utilizing KPIs that allow for different inputs and/or measurements, we can better measure and evaluate the effectiveness of pipeline safety efforts. This process facilitates defining and implementing appropriate pipeline safety improvements and/or corrective actions.

Furthermore, these metrics provide a uniform process that can be used to identify lessons learned and to ensure this knowledge is clearly communicated within the organization for the purpose of improving overall system reliability and safety. The PSMS KPIs for each of the nine (9) PSMS functional groups has been developed based on five (5) factors:

1. The establishment of clear safety performance expectations across the organization.
2. The ability to confirm compliance with jurisdictional regulatory agency requirements.
3. The ability for management and GRS Personnel to track and evaluate their contributions to the safety and reliability of their pipeline assets using both historical safety performance and recent observations and performance measurements.
4. The need to weight a performance score (as needed) based on the frequency and/or severity of a threat or accident/incident.
5. The need to track completed and incomplete items.

These KPIs consist of both "leading" and "lagging" indicators. This analysis allows the use of historical information and safety performance in conjunction with real-time observations and measurements to:

- Identify and evaluate the effectiveness of the pipeline safety program, and
- Identify the need for improvements and prevent the reoccurrence of an event within a pipeline system or from occurring at another pipeline system.

"Leading" Indicators are a forward looking set of indicators that are used to evaluate the performance of key work processes, operating practices and/or safety measures. These indicators have been selected based on their ability to provide an indication of potential problems or to identify the deterioration of safety systems and to implement safeguards, improvements and/or corrective actions prior to an accident or incident.

"Lagging" Indicators are a retrospective set of indicators that are based on incidents that meet a defined threshold of severity. These indicators have been selected to describe events that have already occurred and may indicate potential recurring problems and/or hazards. It is important to recognize that "lagging" indicators will be aligned with the "Threats" of ASME B31.8S-2004

for the purpose of modeling the loss history of a pipeline system as compared to the DOT incident history. This data alignment will help assure that the pipeline system specific loss history is better aligned with an industry standard for future risk identification and management.

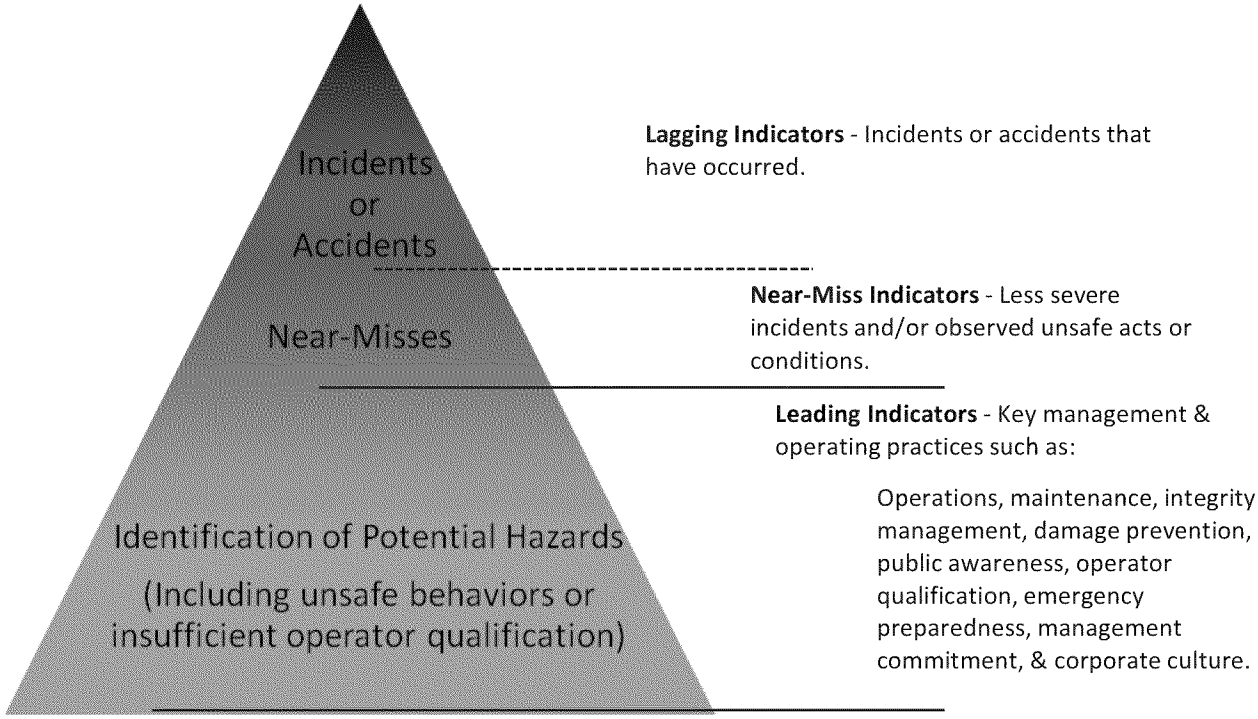
"Near Miss" Indicators are a "Lagging Indicator" subset that is based on less severe incidents or unsafe acts and/or conditions which defeated one or more layers of safety protection. These indicators are generally considered to be good indicators of conditions which could ultimately lead to an abnormal operating condition, a more severe incident and/or an emergency condition.

The key purposes of the PSMS metrics are the assessment of the safety systems effectiveness, the identification of a hazard or hazard potential and implementing safety improvements, safeguards and/or corrective actions, thereby eliminating and/or mitigating events and improving the safety of Gill Ranch pipeline assets.

KPIs will be selected for the purpose of evaluating the company's management commitment and support, corporate culture, effectiveness of accident and incident investigations, ability to respond to and recover from emergencies in a timely and effective manner, system reliability (engineering, operations, maintenance, and transportation integrity management), environmental protection, public safety and worker protection. These KPIs shall be aligned with the "22 Threats" identified in ASME B31.8S-2004 for the purpose of using the data gathered from the PSMS in any future pipeline safety risk assessment and/or modeling.

The hierarchy of the lagging and leading indicators provides a means to identify, track, measure and improve upon the overall safety of the pipeline system. The "Safety Pyramid", illustrated in Figure 2, depicts the level of risk from lowest (yellow) to highest (red).

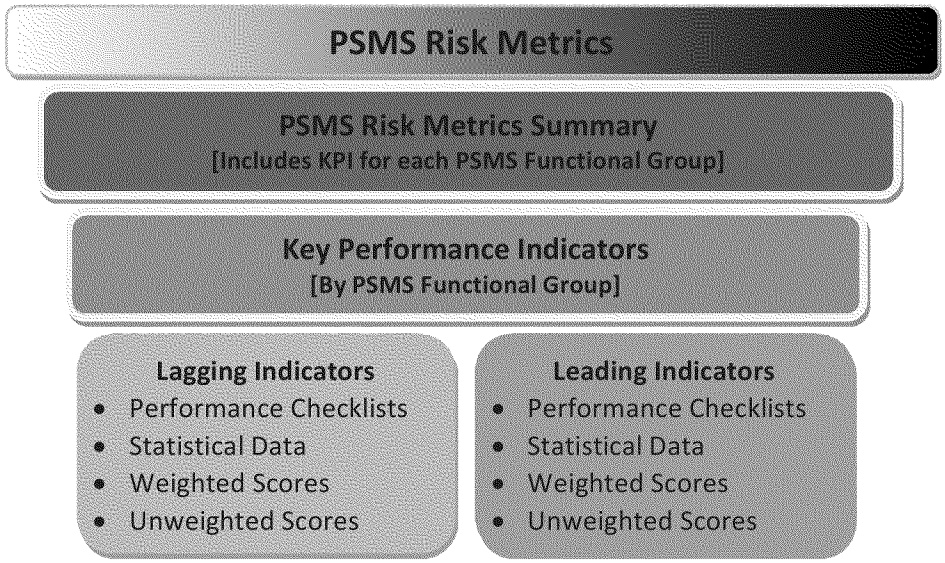
Figure 2. Pipeline Safety Management System Metrics



11(A). Risk Metrics and Key Performance Indicators

The use of Risk Metrics requires that we remember two (2) principles of risk evaluation and improvement. First, we cannot improve what we do not measure. Second, data "correlation" does not imply "causation." The PSMS Risk Metrics consist of a PSMS Risk Metrics summary and KPIs by PSMS functional group. Figure 3 is a graphical representation of the PSMS Risk Metrics.

Figure 3. PSMS Risk Metrics



The PSMS Risk Metrics Summary consolidates all performance measurements from each of the nine (9) PSMS functional groups for the purpose of establishing an overall understanding of the effectiveness of the Gill Ranch pipeline safety initiatives. This allows for a comprehensive review of GRS's pipeline safety efforts and their effectiveness. This higher level summary of the KPIs allows GRS to qualify and quantify those performance measurements that best summarize and represent the results of the KPIs of each of the PSMS functional groups.

Table 1 provides an overview of the key performance indicators by PSMS functional group that will be developed, tracked and measured within the PSMS.

Table 1. Pipeline Safety Management System Key Performance Indicators (Leading & Lagging)

PSMS Functional Group	Leading	Lagging
Management - Corporate Culture, Commitment and Support	1. Management leadership 2. Workforce involvement 3. Observations & assessments 4. Implementation of improvements & corrective actions	1. Systemic failure 2. Poor decisions relating to pipeline safety 3. Inappropriate management and workforce financial incentives
Worker Protection	1. Education and training 2. Adherence to safety & health standards 3. Observations of personnel performing their job responsibilities (including covered task procedures) 4. Job safety analysis 5. Inspections and audits 6. Interventions 7. Implementation of improvements and corrective actions 8. Drug and alcohol code compliance (company & regulatory)	1. Near miss 2. Accident 3. Observed performing job responsibilities inappropriately 4. Failure of work permit System 5. Drug & Alcohol compliance exceedance (company & regulatory)
Public Safety	1. Public Awareness (including communications & education) 2. Damage Prevention 3. Class Location Studies 4. High Consequence Area (HCA) determination & implementation of safe guards 5. Regulatory agency interaction 6. National Pipeline Mapping System (NPMS) accuracy of data submissions 7. Pipeline patrols	1. Safety related condition reporting 2. Failure of work permit system 3. Emergency condition 4. Vehicle accident 5. Pipeline breach 6. Environmental release 7. Fire/explosion
Environmental Protection	1. Potential environmental damage resulting from inappropriate operations 2. Potential environmental damage resulting from an identified pipeline integrity threat 3. Identification of a potential permit exceedance 4. Inspections and audits 5. SARA Title III reporting 6. Permit reporting 7. Permit testing	1. Failure of work permit system 2. Environmental release 3. Unanticipated permit exceedance

PSMS Functional Group	Leading	Lagging
System Reliability - Engineering	1. Design & construction specifications are code compliant 2. Construction permits secured & part of Gill Ranch audit process 3. Contractor procedures and qualifications (including welding procedures and welder qualifications) are code compliant 4. Inspector responsibilities and procedures are code compliant 5. Quality assurance program is code compliant 6. Contractor has integrated company design / construction requirements into Gill Ranch audit process	1. Mechanical failure due to faulty design 2. Mechanical failure due to faulty construction 3. Non-compliance condition identified after work is completed
System Reliability - Operations & Maintenance	1. Management Support 2. Effectiveness of Operations 3. Operator Qualification (OQ) 4. Operating Procedures 5. Control Room Management 6. Maintenance (Including Inspection and Testing) 7. Notification & Reporting - Accuracy & Completeness 8. Security (Facility & Pipeline) 9. Contractor OQ & Performance 10. Management of Change	1. Equipment fatigue/failure 2. Failure of work permit system 3. Abnormal Operating Condition 4. Pipeline safety incident 5. Fire 6. Explosion
System Reliability - Integrity Management	1. Risk assessments 2. Risk modeling 3. High Consequence Area (HCA) identification & analysis 4. See Engineering – system reliability 5. Maintenance 6. Corrosion control effectiveness	1. HCA identification and/or analysis failure 2. Pipeline failure/breach 3. Well failure 4. Equipment/system failure 5. Corrosion failure (atmospheric, external & internal)
Inspection and Audits	1. Conduct Internal Audits of Regulatory Compliance Programs 2. Conduct Internal Audits of Company Policies and Procedures	1. Incomplete, Inaccurate or Missing Inspection and/or Test Records 2. Non-compliance condition identified 3. Pipeline Failure 4. Notice of Violations 5. Regulatory Fines or Penalties

PSMS Functional Group	Leading	Lagging
Emergency Management & Response	1. Preparedness assessment 2. Qualifications of Personnel 3. Implementation of improvements and/or corrective actions 4. Training exercises	1. Post-incident review of emergency response will define where and how the investigation results will be used in the metrics.
Accident & Incident Investigation	1. Standardized protocols based on required level of investigation (based on accident/incident severity) 2. Qualifications of Personnel	1. Determination of causation will define where and how the investigation results will be used in the metrics.
Notification and Reporting	1. Annual Report 2. Regulatory Compliance Submissions 3. Performance Reporting	1. Accidents / Incidents 2. Property Damage 3. Spills / Releases 4. Injury to Personnel / Death

12.Pipeline Safety Management System Functional Groups

Each of the nine (9) functional groups are dedicated to a specific pipeline safety element consisting of existing policies, programs and procedures which may contain performance measurements, regulatory audits, checklists and/or forms.

This section of the PSMS is dedicated to providing a summary of the policies, programs and/or procedures that are used in the normal, abnormal and emergency operations of the Gill Ranch pipeline system. This section shall also reference assessment tools such as performance metrics, KPIs, checklists and regulatory audits that will be used to fully implement the PSMS.

Managers and GRS Personnel need to understand how to use these policies, programs and procedures to better understand their job responsibilities along with the pipeline operating risks. Only then can they take the necessary proactive steps to better protect from and respond to accidents and/or incidents.

These PSMS functional groups satisfy the CPUC and PHMSA requirement to demonstrate the safe design, construction, installation, operation and maintenance of Gill Ranch pipelines.

12(A). Management - Corporate Culture, Commitment and Support

Source documents:

1. Pipeline Safety Management System
2. GRS Golden Rules
3. Safety and Health Program Checkup
4. GRS Operations and Maintenance Plan
5. Transportation Integrity Management Plan
6. Emergency Response Plan (including the Earthquake Response Plan)
7. GRS Health and Safety Plan
8. GRS Environmental Plans

The effectiveness of any safety management system begins with management's commitment and requires clearly stated goals and objectives that are realistic, achievable and measurable. GRS understands that our corporate culture will be a direct result of how our workforce (peers) feels about our ability to set the example and provide the necessary resources to meet our objectives in a fair, timely and positive workplace environment. There are many critical components needed to involve, encourage and support our workforce to become proactive in the success of our organization.

For these reasons the PSMT has developed and implemented:

1. A set of "Golden Rules" that focus on the establishment of minimum safety standards that can easily be communicated and reinforced within our organization and with our contractors and suppliers. We believe that these "Golden Rules" clearly communicate our vision for safety and ultimately the corporate safety culture that we have chosen. A copy of the "Golden Rules" is included as Appendix C.

2. A Safety and Health Program Checkup that reviews management's involvement in the establishment and execution of the GRS Safety and Health Program. A copy of the Safety and Health Program Checkup is included as 0 hereto.

KPIs will consider the effectiveness of management in creating the corporate vision; allocating resources and assuring pipeline safety goals and objectives are being met. KPIs will look at management leadership, workforce involvement, performance observations and assessments, historical losses, poor decisions relating to pipeline safety and inappropriate management actions including inappropriate workforce financial incentives.

12(B). Worker Protection

Source Documents:

1. GRS Anti-Drug and Alcohol Program
2. GRS Health and Safety Program
3. GRS Golden Rules
4. GRS Safety and Health Program Checkup
5. Operator Qualification Procedures for DOT "Covered Tasks"

The primary goal of this element is to comply with CalOSHA and to assure the health and safety of our GRS Personnel, contractors and visitors. While the focus is on worker protection, this element is used to support business and operating activities across the company.

Worker protection controls include but are not limited to:

- Near miss and accident reporting;
- Drug and alcohol testing (condition of employment, random and for cause);
- A work permit system;
- The use of Job Safety Analysis (JSA) to better identify, eliminate or manage hazard potentials associated with the execution of a job or task;
- Observing personnel performing jobs and tasks, providing feedback and interventions as needed;
- Conducting workforce education and training to ensure jobs and tasks are performed safely and responsibly;
- Inspections and audits;
- Safety and health education and training;
- Safety meeting; and
- Accident and incident investigations.

KPIs will consider the safety performance of GRS Personnel and contractors. KPIs will look at near miss reports, accident and incident statistics, OSHA 300 log, and the GRS Health and Safety Program Checkup.

12(C). Public Safety

Source Documents:

1. Public Awareness Program
2. Damage Prevention Program
3. Emergency Management and Response Program
4. Class Location Studies
5. High Consequence Area (HCA) Analysis
6. National Pipeline Mapping System (NPMS) data

One of GRS's primary public safety goals is to protect the public from harm as a result of a pipeline system failure.

All of the referenced programs are used to assure that the public is educated to the presence of the GRS pipeline as well as the potential hazards associated with a pipeline release, how to identify and report potential pipeline hazards or releases, and what to do in the event of a pipeline failure.

Collectively, these programs support public education and communication and assures that GRS is prepared for pipeline emergencies; focusing on the protection of GRS personnel, contractors, the public, and the environment. The GRS emergency preparedness initiatives include preparing for an emergency, minimizing or eliminating identified hazard/emergency potentials, and responding to and recovering from pipeline emergencies.

KPIs will consider accident and incident statistics, feedback to the Public Awareness Program, population densities, high consequence areas, pipeline right-of-way conditions and pipeline operating conditions.

12(D). Environmental Protection

Source Documents:

1. Golden Rules
2. Environmental Compliance Manual
3. Spill Prevention, Countermeasures and Containment Plan
4. Subsidence Monitoring Plan
5. Environmental permits

GRS recognizes the potential environmental impact that a pipeline failure and/or release may have on the environment. The GRS environmental management efforts include permitting, volumetric and threshold reporting, waste management, chemical storage, spill prevention, countermeasures and containment, protection of water resources, elimination and/or mitigation of nuisance odors and noise and protection of agribusiness resources and wildlife.

KPIs will consider environmental releases, filings, permits, reporting requirements and permit exceedances, potential environmental damage from inappropriate operations and identified pipeline integrity threats and inspection and audit results.

12(E). System Reliability

The System Reliability of the pipeline system includes Engineering, Operations and Maintenance, and Transportation Integrity Management.

12(F). Engineering

Source Documents:

1. Pipeline design and construction specifications and standards
2. Facility design and construction specifications and standards
3. Design specifications
4. Safety system cause and effect diagrams
5. Pipeline data sheets (material maximum allowable operating pressure (MAOP), specified minimum yield strength (SMYS), potential impact radius (PIR), class location studies)
6. Material specifications
7. Relief valve sizing
8. Pressure test records
9. Non-destructive test records
10. Construction field notes
11. As-built diagrams
12. Control Room Management Program

The engineering program element is one of three PSMS elements within System Reliability. The use of the referenced documents and programs provide the necessary regulatory guidance and data to verify that all pipeline systems are designed, constructed and commissioned in accordance with federal and State of California regulatory requirements.

These programs and data are used to verify pipeline construction materials and procedures, welding procedures, welder qualifications, nondestructive testing requirements, pressure and volumetric ratings of piping and vessels, temperature limitations, pressure test requirements, valve spacing requirements, *etc.*). NOTE: the CPUC requires that all pipelines must have a validated Maximum Allowable Operating Pressure (MAOP) by pipeline/system segment and that the supporting calculations, worksheets, design basis and other supporting documents be on file.

The Design and Construction Program establishes the requirements for meeting or exceeding the minimum standards for the safe design, construction, installation, operation, and maintenance, uprating and derating, repairs and abandonment of natural gas pipelines and facilities as required by PHMSA/CPUC.

Point-to-point verification of safety devices are required by the PHMSA/CPUC Control Room Management Standard. The testing of these safety devices crosses several PSMS functional elements including operations and maintenance, engineering, and transportation integrity management.

KPIs will consider PHMSA audits, design and construction specifications, construction permits, construction procedures and qualifications (*e.g.* welding procedures and welder qualifications, Non-destructive Testing (NDT) records, mechanical failures, *etc.*

12(G). Operations and Maintenance

The expertise (Knowledge, Skill and Ability) of our organization is critical to our ability to make good business and operational decisions. Our success as an organization technically, operationally and commercially depends on the quality of these decisions. Within the operations and maintenance function are multiple programs that are in place for the purpose of assuring that Gill Ranch pipeline systems are operated safely.

KPIs will consider management support, the effectiveness of the operations, operator qualifications, operating procedures, control room management, maintenance (including inspection and testing), equipment fatigue/failure, work permit system effectiveness, abnormal operating conditions, safety incidents and emergency conditions.

Operator Qualification

The Operator Qualification Program defines the approved training and qualification methods for personnel and contractors performing covered tasks on regulated pipelines. The Operator Qualification program was developed in conjunction with the covered task operations and maintenance procedures. The primary objective of this program is to maintain a well-qualified workforce for the purpose of reducing the probability and consequence of incidents caused by human error on our regulated pipelines.

Operations and Maintenance Procedures

GRS has developed written operations and maintenance procedures ("Covered Task Procedures") in accordance with the requirements of the Operator Qualification Program. The purpose of the written procedures is to ensure that company and contract personnel perform "DOT Covered Tasks" safely. These written procedures have been developed on the principles of adult education and include a task description, preceding tasks and/or activities, dangers, cautions and warnings that may be encountered when performing the task, detailed steps for performing the task, abnormal operating and emergency conditions that may be encountered while performing the task and documentation and recordkeeping requirements.

Control Room Management

The Control Room Management Program defines the safety requirements for controllers, control rooms, and supervisory control and data acquisition (SCADA) systems used to remotely monitor and control pipeline operations. The program includes human factors engineering and management solutions for the purpose of enhancing the performance reliability of operator personnel that control pipeline operations. This program is intended to reduce the number and consequences of shortfalls in control room management practices and operator errors when remotely monitoring and controlling pipelines and responding to abnormal and emergency conditions.

Inspection and Testing

The Inspection and Testing Program defines the specific pipeline inspection and test requirements for PHMSA/CPUC natural gas pipelines. These inspections and tests must be performed by a qualified individual or under the direct supervision of a qualified individual. Each inspection and test is time sensitive and must be completed within a specified timeframe based on the pipeline segment's class location. These inspections and tests comply with the CPUC requirement to evaluate its pipeline patrols and leakage survey inspection protocols and determine if their adequacy; implementing additional measures based on the results of the findings.

Corrosion Control

The Corrosion Control Program defines the GRS approach to maintaining the highest standard of corrosion protection; ensuring that all corrosion control procedures and requirements are executed; including but not limited to: preventing and/or mitigating atmospheric, external and internal corrosion on the pipeline system. This program requires atmospheric corrosion assessments, exposed pipe inspections, external corrosion assessments and internal corrosion assessments. Cathodic protection requirements including pipe to soil readings and rectifier readings are also included in this program. The program requires that all corrosion be inspected and evaluated for corrective actions.

Records Management

The Records Management Program defines the recordkeeping and retention requirements for all regulated pipelines through the pipeline's full life cycle – from concept through design and construction, commissioning, operations, maintenance, inspections and testing, deactivation and abandonment. This program identifies what records must be retained as well as the length of time the records must be kept. Additionally, the program complies with the CPUC requirement to maintain a log of comments and suggestions made by its personnel regarding this plan. This log shall include all comments and suggestions and their disposition (including the rationale for the disposition).

Management of Change

The Management of Change Program defines the requirements for identifying potential changes, the process required to accept or decline the change and who is required to participate in the change review process. Additionally, this program also defines how all plans and procedures developed for the PHMSA/CPUC shall be reviewed, accepted and maintained as an official record.

Pipeline Security

The Pipeline Security Program defines the pipeline security policies and procedures. These procedures co-exist with the Department of Homeland Security (DHS) requirements and covers both physical and cyber security measures. The physical security measures satisfy both PHMSA and DHS requirements while the cyber security measures satisfy the DHS requirements. These procedures follow industry-accepted best practices.

12(H).Transportation Integrity Management

The Transportation Integrity Management Program defines the process used in the management of risk associated with the design, construction, operation, inspection, testing, maintenance and abandonment of pipelines. This Program defines the process that is needed to safely identify and mitigate the potential threats associated with pipeline operations.

The Transportation Integrity Management Program (TIMP) is one part of the overall GRS Operations and Maintenance program and is designed to provide increased public assurance in pipeline safety.

The TIMP:

- Includes those sections of ASME/ANSI B31.8S that have been incorporated by reference (49 CFR 192),
- Is used to collect and integrate data from the entire pipeline for the purpose of identifying and evaluating all potential threats to a covered pipeline segment,
- Defines the process used to improve pipeline safety for High Consequence Areas, and
- Includes the inspection methods and integrity assessment frequency.

This program is one of many that are subject to a focused audit by the CPUC. The TIMP is used in conjunction with the GRS Operations and Maintenance Program to assure regulatory compliance, operational safety and public protection.

Key components of this Program include:

- Determination of high consequence areas (HCAs).
- Calculation of the potential impact radius (PIR).
- Conducting a risk assessment to 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.
- Conducting a risk assessment to 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.
- Identifying how leaks and other hazardous conditions or emergency events shall be identified and corrected.
- Designing and conducting integrity assessments in accordance with the PHMSA/CPUC prescribed technical requirements and frequency.
- Establishment of preventative and mitigative actions.

KPIs will consider PHMSA audit protocols, how risk assessments are designed and executed, HCAs, PIRs, material specifications, MAOP, operating history, operations and maintenance practices, mechanical condition of pipelines, corrosion control effectiveness and mechanical equipment and vessels.

12(I). Inspections and Audits

The Inspections and Audits Program is focused on assessing the safety and reliability of the pipeline system through the verification that all pipeline safety, worker protection, public safety and environmental protection regulatory and company requirements have been favorably met. Inspections will be accomplished using previously defined assessment tools while audits shall follow regulatory agency protocols. Both "scheduled" and "for cause" assessments will be conducted in accordance with the provisions of this Program. The primary focus of this element is to evaluate operating risks for the purpose of identifying real and potential threats and implementing appropriate improvements, protective measures and/or corrective actions, as needed.

KPIs include confirmation that these assessments are conducted as prescribed by the PSMT and that all approved recommendations are fully implemented.

12(J). Emergency Management and Response

The Emergency Management and Response Plan, in conjunction with the Earthquake Plan, define mitigation, preparedness, response and recovery actions based on the nature and severity of the emergency. The Plan includes response actions specific to natural and manmade threats such as injury to personnel, fires, explosions, pipeline releases, natural disasters, *etc*. The Plan focuses on response actions and desired outcomes and has been designed to support the GRS Emergency Response Team's management and response initiatives from initial notification to regulatory reporting and working with federal and state agencies under the National Contingency Plan (as required).

KPIs will consider personnel training and ability to respond to an emergency, response timing and effectiveness, frequency and quality of training exercises and drills, and the effectiveness of the Public Awareness and Damage Prevention Programs. The primary focus of this program is to assure that all reasonable efforts are made to effectively and timely respond to an emergency and to assure that protection of life and the environment are top priorities.

12(K). Accident and Incident Investigation

The GRS Accident and Incident Investigation Program define the management process which facilitates identification of the underlying causes of accident and incidents and provides for actions to be taken to mitigate or eliminate future accidents and incidents. The principle focus of Accident and Incident Investigation Program is to identify causal factors. These factors are the events, situations, and conditions that cause accidents and incidents in the work place. The understanding of the causal factor gained from the investigation process can be used to minimize the likelihood or prevent recurrence of future accidents and incidents.

GRS shall utilize this Program based on the accident/incident level as defined in the Program. The severity of the accident or incident shall determine the level of recommended investigation.

KPIs will consider the PSMT's review of its investigation procedures, qualifications of the personnel that are responsible in leading and/or participating in an investigation and reviews of

prior investigations. It is important to note that the determination of causation may define where and how the investigation results will be used in the metrics.

12(L). Notification and Reporting

The Notification and Reporting Program defines:

- The regulatory and company requirements for filing regulatory required reports including but not limited to PHMSA annual reports, NPMS filings and updates, OSHA 300 logs, Tier II reports, *etc.*
- Notifying the appropriate company personnel and regulatory agencies based on the nature and severity of the incident.
- Providing initial and follow-up incident reports as required by the respective regulatory agency.

KPIs will consider the accuracy and timeliness of the reports that have been filed, accuracy and timeliness of regulatory and company required notifications and missed notifications or reports.

Appendix A. Cross-Reference of Public Utilities Code Sections 961 and 963 to Gill Ranch Storage, LLC's Pipeline Safety Management System

TABLE 1

Cross-Reference of Public Utilities Code Sections 961 and 963 to Gill Ranch Storage, LLC's Pipeline Safety Management System

Public Utilities Code Requirement Section 961	PSMS Element[1]
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.	See Definitions in the Gill Ranch Storage, LLC (GRS) Pipeline Safety Management System (PSMS) 2012.
(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.	PSMS GRS Operations and Maintenance Manual GRS Transmission Integrity Management Program Plan (TIMP)
(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.	Acknowledged in PSMS – Section 9
(3) Each gas corporation shall implement its approved plan.	PSMS - Sections 7, 8 & 9
(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).	PSMS - Section 9

Public Utilities Code Requirement Section 961	PSMS Element[1]
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.	PSMS – Sections 1, 2, & 10
(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:	963(b)(3): PSMS Sections 1, 2, 3 & 4
(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.	PSMS – Section 10 & 12(h) GRS Operations and Maintenance Manual GRS TIMP Plan
(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.	PSMS GRS Operations and Maintenance Manual GRS TIMP Plan
(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.	GRS Operations and Maintenance Manual
(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.	GRS Operations and Maintenance Manual – Sections 13 and 11 (principally).

Public Utilities Code Requirement Section 961	PSMS Element[1]
(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.	GRS Operations and Maintenance Manual
(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.	GRS Operations and Maintenance Manual – Sections 2 & 3 Participation in One Call Note: Gill Ranch does not provide natural gas service to consumers and, therefore, disconnection, reconnection and pilot lighting procedures are not applicable. (D.09-10-035.)
(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.	GRS Operations and Maintenance Manual – Sections 8 & 11(L) GRS Covered Task Procedure 8010
(8) Prepare for, or minimize damage from, and respond to, earthquakes and other major events.	GRS Earthquake Response Plan GRS Emergency Response Plan GRS Pipeline Security Program (Section 9 of GRS Operations and Maintenance Manual)
(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.	GRS Operations and Maintenance Manual
(10) Ensure an adequately sized, qualified, and properly trained gas corporation workforce to carry out the plan.	GRS Operator Qualification Program (Section 6 of GRS Operations and Maintenance Manual

Public Utilities Code Requirement Section 961	PSMS Element[1]
(11) Any additional matter that the commission determines should be included in the plan.	Additional requirements shall be included as defined by the CPUC.
(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 industry wide culture of safety that will minimize accidents, explosions, fires, and dangerous conditions for the protection of the public and the gas corporation workforce.	PSMS – Sections 4, 5 & 6
(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.	

Section 963	PSMS Element[1]
(a) For purposes of this section, the following terms have the following meanings:	
(1) "After-meter services" includes, but is not limited to, leak investigation, inspecting customer piping and appliances, carbon monoxide investigation, pilot relighting, and high bill investigation.	
(2) "Basic gas service" includes transmission, storage for reliability of service, and distribution of natural gas, purchasing natural gas on behalf of a customer, revenue cycle services, and after-meter services.	
(3) "Metering services" includes, but is not limited to, gas meter installation, meter maintenance, meter testing, collecting and processing consumption data, and all related services associated with the meter.	
4) "Revenue cycle services" means metering services, billing the customer, collection, and related customer services.	
(b) The Legislature finds and declares all of the following:	
(1) In order to ensure that all core customers of a gas corporation continue to receive safe basic gas service, each existing gas corporation shall continue to provide this essential service.	
(2) A customer shall not be required to pay separate fees for utilizing services that protect public or customer safety.	
(2) 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.	PSMS Sections 1, 2, 3 & 4

Section 963	PSMS Element[1]
(c) (1) The commission shall require each gas corporation to provide bundled basic gas service to all core customers in its service territory unless the customer chooses or contracts to have natural gas purchased and supplied by another entity.	
(3) A gas corporation shall continue to be the exclusive provider of revenue cycle services to all customers in its service territory, except that an entity purchasing and supplying natural gas under the commission's existing core aggregation program may perform billing and collection services for its customers under the same terms as currently authorized by the commission, and except that a supplier of natural gas to noncore customers may perform billing and collection for natural gas supply for its customers.	
(3) The gas corporation shall continue to calculate its charges for services provided by that corporation. If the commission establishes credits to be provided by the gas corporation to core aggregation or noncore customers who obtain billing or collection services from entities other than the gas corporation, the credit shall be equal to the billing and collection services costs actually avoided by the gas corporation.	
(4) The commission shall require the distribution rate to continue to include after-meter services and shall authorize sufficient revenues and employee staffing to provide for prompt provision of these services to the public, consistent with the policy developed and implemented by the gas corporation and approved by the commission pursuant to Section 961.1	

1. These tables list each of the elements of Public Utilities Code sections 961 and 963. Elements that are not applicable to GRS's Pipeline Safety Management System are shaded in gray.

Appendix B. Employee / Workforce Acknowledgement and Commitment

Employee / Workforce Acknowledgement and Commitment

1. **OPERATIONS AND MAINTENANCE:** I fully understand that the Gill Ranch Storage Project includes a regulated pipeline system and that I cannot perform a "DOT Covered Task" unless I am qualified to do so or work under the direct supervision of a qualified operator.

2. **SAFETY, HEALTH AND ENVIRONMETNAL RULES:** I fully understand my responsibility to always perform my job responsibilities in a safe and environmentally responsible manner.

3. **REPORTING UNSAFE CONDTIONS OR ACTIONS:** I understand that I have the:
   a. Responsibility and authority to stop any unsafe act or condition, and to
   b. Immediately report the unsafe act or unsafe condition to my supervisor or management.

4. **REPORTING ACCIDENTS AND NEAR MISSES:** I have been informed that I must immediately report all accidents and near misses to my supervisor or management.

5. **FEDERAL AND STATE NOTIFICATION:** Any employee or worker who perceives a breach of safety requirements may inform the California Public Utilities Commission (CPUC) of the breach, and the Commission will keep the identity of the employee or worker confidential. You may contact the CPUC at:

   California Public Utilities Commission
   c/o Director of the Consumer Protection and Safety Division
   "SAFETY BREACH NOTIFICATION FROM GAS SYSTEM OPERATOR EMPLOYEE/Worker – CONFIDENTIALITY REQUESTED"
   505 Van Ness Avenue
   San Francisco, CA 94102

Employee / Worker Name:_____ Date: _____

Printed Name: _____

Appendix C. Golden Rules

President's Message

The Gill Ranch Storage, LLC (GRS) Executive Management Team has created and maintains a workplace that is safe, healthy and environmentally responsible. We did this by establishing responsible performance expectation of our GRS Personnel, contractors and suppliers. We understand the importance of:

- assuring that we have a qualified workforce,
- creating and maintaining a safe workplace,
- interacting with our stakeholders,
- managing change, and
- responding to and recovering from abnormal operating conditions and/or emergencies.

We have created these "Golden Rules" to communicate the values of our corporate culture to our GRS Personnel, contractors and stakeholders. We believe that these Golden Rules are the cornerstone of conditions of employment or contract with Gill Ranch Storage and must be adhered to at all times.

These Golden Rules apply to everyone including our board of directors, management, GRS Personnel, contractors, suppliers, clients and visitors.

At the core of these Golden Rules is:
"EACH OF US HAS THE RESPONSIBILITY AND AUTHORITY TO ***STOP*** ANY TASK THAT CANNOT BE CARRIED OUT IN A SAFE, HEALTHY AND ENVIRONMENTALLY RESPONSIBLE MANNER. THE JOB OR TASK CANNOT CONTINUE UNTIL THE TASK CAN BE DONE SAFELY WITH ADEQUATE HEALTH AND ENVIRONMENTAL PROTECTION CONTROLS".

1. Know and Execute the Job Fundamentals

1. Provide clear and accurate communications.
2. Be fit for work and unaffected by drugs, alcohol or illness.
3. Only smoke in designated areas.
4. Match your resources to the needs of the job (number of people, equipment and materials).
5. Only perform tasks for which you are trained, qualified (competent) and authorized.
6. Safety reviews are required before the execution of any job or task. These reviews range from conducting a mental review of the task at hand, safety discussion, Job Safety Analysis (JSA) or Job Task Analysis.
7. Assess the risks (*e.g.* JSA) associated with the task and take the appropriate actions to perform the task safely. Always wear and use appropriate personal protective equipment (PPE).
8. Know whether a permit to work is required or not and assure procedures, health, safety and environment (HSE) controls and resources are adequate to perform the job without injury or illness and with the lowest possible adverse impact to the environment.

9. Have the right tools and equipment that are fit for the task at hand. Remove defective or damaged equipment from service.
10. Never take shortcuts. If the task or circumstances in which you are working change, stop what you're doing, reassess the condition and proceed only when it is safe to do so.
11. Be prepared for emergencies by ensuring adequate First Response resources are at hand before beginning any work. Know your rally point(s) and emergency egress and access routes.

2. Response to Any Breach of the GRS Golden Rules

Personnel will be immediately removed from performing their job and/or tasks and will be subject to disciplinary action if they participate in or commit one or more of the following:

- Flagrant violation of one or more of these Golden Rules;
- Demonstration of a clear disregard for GRS health, safety and/or environmental polices, programs and/or procedures;
- Working or driving under the influence of alcohol or drugs;
- Smoking outside of designated areas;
- Refusing to obey any order that results in the creation of an unsafe act or unsafe condition; and/or
- Refusing to obey any order in the event of imminent danger.

3. Pipeline Safety

1. Assure personnel are qualified to perform "covered tasks." If personnel are not qualified, assure they are working under the direct supervision of a qualified individual when performing "covered tasks."
2. Know your system and operating parameters (material specifications, Maximum Allowable Operating Pressure (MAOP), spec. breaks, pressure and/or flow controls, *etc.*) and verify that all checks are completed according to the operating procedures.
3. Monitor your operations and anticipate what can go wrong and the appropriate corrective action(s) that may be required.
4. Know how to recognize and respond to Abnormal Operating Conditions and Emergency Conditions.
5. Conduct all inspections and tests. Report and repair equipment and safety system malfunctions and failures. Correct as soon as practicable. Ensure that the system safety has not been compromised pending repairs and/or other corrective actions.
6. Ensure Integrity Management Program and compliance initiatives are current.
7. Address One-Call tickets as they are received. Do not delay a response to the ticket request.
8. Communicate with stakeholders in accordance with the Public Awareness Program.
9. When investigating incidents, work to determine causation and corrective actions–not blame.
10. You have the responsibility and authority to take any protective actions (including shutting-in and/or blowing down) in response to an abnormal operating condition or a response to an emergency condition.

11. Communicate with and educate your stakeholders; they are your partner in pipeline safety.
12. Assure that your controllers are trained and qualified for normal, abnormal and emergency conditions.
13. Report all incidents and safety related conditions.

4. Environmental Protection

1. Prevent spills. If you spill, clean it up as soon as possible.
2. Manage your waste by:
   a. Reduction, reuse and recycling;
   b. Proper storage, transportation and disposal;
   c. Permit compliance; and
   d. Reporting and recordkeeping.
3. Protect the environment (including wildlife and sensitive areas).
4. Prevent environmental nuisances (dust, noise, smoke, odors, *etc.*).

5. Personal Protective Equipment (PPE)

1. Enter work area(s) with PPE that is operating properly and adequate for the job or task.
2. Only perform the job or task with the proper PPE.
3. Only use a hard hat when its useful life can be verified.
4. Hearing protection is required in designated areas.
5. Safety glasses must be ANSI Z87.1-2003 compliant.
6. Safety harnesses must be inspected prior to use.
7. All PPE should be inspected and maintained in accordance with the manufacturer's instructions.
8. At a minimum, field operations require hard hats, eye and ear protection, safety gloves and safety boots.
9. Specialized PPE such as flame retardant clothing and respirators may be required based on the job, task and/or workplace environment.

6. Permit to Work

1. Work permits are necessary to ensure that the work is being performed safely.
2. Work permits must clearly define the job and/or tasks to be performed, the equipment to be used and the required operator qualifications.
3. A Job Safety Analysis or Job Task Analysis is required with all work permits.
4. Where necessary, additional permits (lock out tag out (LOTO), hot work, confined space entry (CSE), excavation, working at height, *etc.*) must be issued prior to beginning the work by a qualified (certified) individual.
5. Releasing a work area from a permit requires the permit holder and a qualified (competent) company representative to confirm that all permit conditions have been met and that all work is either completed or safeguarded in such a manner as to allow for the release of the permit.

6. Monitoring for known hazards such as hazardous atmospheres, fire/explosion potentials, noise, spills and/or other releases is typically required as part of a permit issuance.
7. New permits must be issued if conditions change, a new shift begins or as other conditions necessitate.

7. Know What to Do in an Emergency

1. Protect yourself first and others if it is safe to do so.
2. Get help.
3. Always give and receive positive communication to avoid misunderstanding.
4. Protect the environment if it is safe to do so (*e.g.* wildlife, livestock, sensitive areas, water resources, *etc.*).
5. Protect property if it is safe to do so (stakeholders and company).
6. Never enter a restricted area unless you have permission, the proper qualifications and PPE.
7. Understand and know how to execute your emergency management and response responsibilities.

8. Operations and Maintenance

1. Always give and receive positive communication to avoid misunderstanding.
2. Never enter a restricted area unless you have permission, the proper qualifications and PPE.
3. Only smoke in designated areas.
4. Assure procedures (including the Health Safety and Environmental (HSE) controls) are adequate for the job.
5. Assure you are qualified to perform the job and that you have adequate resources to perform the job without injury or illness and with the lowest possible adverse impact to the environment.
6. Know how and when to use work permits (*e.g.* General Work Permit, LOTO, hot work, CSE, *etc.*)
7. Stop the job or task if you observe any unsafe act or unsafe condition. Only proceed when it is safe to do so.
8. Do not start up or shut down equipment or facilities without using the appropriate written operating procedure(s).
9. Always report temporarily disabled automated safety systems, incorporating additional safety measures as required.
10. Assure procedures and precautions are adequate for complex operations and/or operations that are performed infrequently.
11. Assure equipment and tools are properly guarded.
12. Know how to recognize and respond to abnormal operating conditions.
13. Know how to recognize and respond to emergency conditions.

9. Energy and Isolation

1. Work permits and LOTO are required.
2. All energy supply (mechanical, electrical, hydraulic, thermal, *etc.*) must be rendered inoperative prior to working on energized systems.
3. The isolation and effectiveness of the LOTO must be verified.
4. All energy must be safely discharged and the equipment purged and vented prior to initiating work.
5. A company representative must be present for the initial equipment entry.

10. Excavation Work

1. All excavation work requires a valid work permit that includes the necessary details (maps, drawings, GPS coordinates, *etc.*) of all underground hazards.
2. Place a One-Call (Call Before You Dig) as required and assure that all underground hazards are located and marked.
3. Protect from ground movement by positioning machinery a set distance from the excavation and stabilizing the trench walls.
4. Where necessary, take the appropriate precautions for working in confined spaces.
5. Stay alert and safeguard against unexpected hazards.

11. Confined Space Entry

1. Only proceed with confined space entry if all other options have been ruled out.
2. An entry plan must be developed and approved prior to entry. The plan must address suffocation, falls, explosions, fires, crushing, drowning, and other identified or potential risks.
3. The entry permit is issued with authorization by a responsible person(s). The permit is communicated to all affected personnel and posted as required.
4. Only enter a confined space after the unit has been isolated, the atmosphere checked and the area deemed safe for the level of PPE to be used.
5. All energy and fluid sources must be defined in the entry plan.
6. All energy and fluid sources must be isolated and their LOTO in place prior to entry.
7. Inert atmospheres must be addressed in the entry plan.
8. Safety attendant must be in place per the entry plan.
9. An emergency response and rescue plan must be in place and tested prior to entry.
10. Rescue personnel that are suitably equipped must be in place per the entry plan.
11. The emergency evacuation plan must be prepared and in place per the entry plan.

12. Working at Heights

1. A fixed platform (verified by a competent person) is used with guard or hand rails or a fall arrest system is used. Only certified workers may work on a mobile elevating work platform (MEWP). Each certified worker must be equipped with a safety harness and be able to safely work under the specific site conditions. The MEWP may not be moved with the outriggers deployed unless a qualified (competent) individual has completed a risk assessment and confirmed it is safe.

2. Load capacities and structural integrity must be confirmed and the appropriate protective devices must be in place and tested prior to working on building or tank roofs.
3. All tools must be attached to an anchor and stored in baskets.
4. Scaffolding must be appropriate to requirements with regular inspections recorded on the inspection tags.
5. Fall arrest equipment must limit free fall to six (6) feet or less.
6. A visual inspection of the fall arrest equipment and system must be completed and any equipment that is damaged or has been activated must be taken out of service.
7. Safety harnesses attached to a proper anchor are required when working at height where there is no collective protective equipment (*e.g.* fixed platform).
8. Personnel erecting, modifying and dismantling scaffolding must be equipped with a double-lanyard harness.

13. Lifting and Mechanical Handling

1. Never take shortcuts.
2. Do not walk or stand under a load.
3. A competent person must determine the appropriate lift method and equipment to be used; ; complete an assessment of the lift, and determine if a lift plan is required.
4. Prior to use, lifting equipment and accessories must be inspected and in good working order.
5. Lifting devices and equipment must have been certified for use within the last 12 months (at a minimum). All installed safety devices must be operational.
6. Loads must not exceed dynamic and/or static capacities of the lifting equipment. The load must be securely slung and properly bundled.
7. The moving load must be controlled at all times.
8. Crane operators, riggers, signalers, and spotters must be qualified.
9. Create a restricted area to restrict access to the lifting area.

14. Vehicle and/or Equipment Operations

1. Obey the speed limit, adjust your driving to conditions and wear your seat belt. Take special precautions when driving conditions are hazardous.
2. Obey traffic regulations both on-site and off-site. Follow the local laws regarding the use of cell phones while driving.
3. Make sure machinery and vehicles are suitable for the intended use, inspected and authorized for use.
4. Drivers must have a valid license for the vehicle driven or machinery operated and the type of product transported.
5. Do not drive when sleepy or tired.
6. Do not transport passengers and goods in the same compartment. Special restrictions apply when a potentially explosive atmosphere may form.
7. Take the appropriate actions to assure that equipment cannot be operated by unauthorized personnel.
8. Be aware of moving vehicles and make sure that drivers see you.
9. If you are a pedestrian, give way and stand clear of mobile equipment.

10. Always obtain positive communication from the operator before you approach mobile equipment.
11. Assure that spotters for equipment operators are able to initiate an emergency response.

15. Working Alone or Remotely

1. Make sure at least one form of communication is available at all times (*i.e.* radio, phone, call-out, *etc.*).
2. Plan ahead and establish a reliable check-in system by which you can call someone at regular intervals. Agree on a tracking method to be used to determine whether you are overdue.
3. Ensure the job or task is safe to perform alone. Never work from heights, in confined spaces, with hazardous substances or with dangerous equipment when working alone. Additionally, be aware that certain medical conditions may increase your risk when working alone and do not work when these risks are present.
4. Know the emergency services available and/or accessible to you when working alone or remotely.
5. When working in remote areas at night, park as close to the work area as possible and in a well lit area.

16. Simultaneous Operations

1. Simultaneous operations often have multiple employers on the worksite; this requires special planning and clear communications of all operational activities that may impact an employer's worksite or job.
2. All simultaneous operations require that all co-activities require the pre-job initiation inspections.
3. All personnel must know their specific roles as well as the potential impacts the collective operations may have on it.
4. All operations must be coordinated with planning and execution meetings held as needed to assure all hazards are communicated, the execution of critical tasks is coordinated and personnel are capable of indentifying and responding to abnormal and emergency conditions.
5. The coordination of jobs and/or tasks require the involvement of coordinators that have the appropriate authority to assure the safe execution of the job and/or task.
6. Job and contractor supervision must be increased.

17. Management of Change

1. All technical and organizational changes require prior authorization in accordance with the company's Management of Change Program. This includes but is not limited to changes to piping, valves, fittings, equipment, safety systems, operating conditions (including pressures, temperatures, flow rates), procedures, materials and/or substances used, personnel (especially those in safety-critical positions) and organizational changes.
2. Risk reviews and/or assessments are required as part of the Management of Change Program. They must be documented and available.

3. All identified hazard mitigation measures must be implemented.
4. Polices, plans and procedures must be updated as needed.
5. Personnel must be given appropriate training based on the nature and complexity of the change.
6. Management of Change Program records must be maintained in accordance with company policy.

Appendix D. Safety and Health Check-up

Safety and Health Program Check-Up

This Safety and Health Program Check-up has been taken from an OSHA e-tool. The purpose of this check-up is to identify how your safety and health program measures up. Upon completion of the survey and getting a score; an organization can get a baseline of how well it is doing is delivering an effective Safety and Health Program to its workforce.

Remember, there are no right or wrong answers; the check-up will only assists in identifying areas where improvements can be made.

1) Management Leadership and Employee Involvement

a) Clear worksite safety and health policy

State clearly a worksite policy on safe and healthful work and working conditions, so that all personnel with responsibility at the site and personnel at other locations with responsibility for the site understand the priority of safety and health protection in relation to other organizational values.

1. ☐ We have a Safety and Health (S&H) policy and all personnel accept, can explain, and fully understand it.
   Points: 4

2. ☐ We have a S&H policy and majority of personnel can explain it.
   Points: 3

3. ☐ We have a S&H policy and some personnel can explain it.
   Points: 2

4. ☐ We have a S&H policy and some personnel can explain it.
   Points: 1

5. ☐ We have a S&H policy and some personnel can explain it.
   Points: 0

b) Clear Goals and Objectives are set and communicated.

Establish and communicate a clear goal for the safety and health program and objectives for meeting that goal, so that all members of the organization understand the results desired and the measures planned for achieving them.

1. ☐ All personnel are involved in developing goals and can explain desired results and how results are measured
   Points: 4

2. ☐ Majority of personnel can explain results and measures for achieving them
   Points: 3

3. ☐ Some personnel can explain results and measures for achieving them
   Points: 2

4. ☐ We have written (or oral, where appropriate) goals and objectives
   Points: 1

5. ☐ We have no safety and health goals and objectives
   Points: 0

c) Management Leadership

Provide visible top management involvement in implementing the program so that all will understand that management's commitment is serious...

1. ☐ All personnel can give examples of management's commitment to safety and health
   Points: 4

2. ☐ Majority of personnel can give examples of management's active commitment to safety and health.
   Points: 3

3. ☐ Some personnel can give examples of management's commitment to safety and health.
   Points: 2

4. ☐ Some evidence exists that top management is committed to safety and health.
   Points: 1

5. ☐ Safety and health is not a top management value or concern.
   Points: 0

d) Management Example

Provide visible top management involvement in implementing the program so that all will understand that management's commitment is serious

1. ☐ All personnel recognize that managers in this company always follow the rules and address the safety behavior of others.
   Points: 4

2. ☐ Managers follow the rules and usually address the safety behavior of others.
   Points: 3

3. ☐ Managers follow the rules and occasionally address the safety behavior of others
   Points: 2

4. ☐ Managers generally follow basic safety and health rules
   Points: 1

5. ☐ Managers do not follow basic safety and health rules
   Points: 0

e) Employee Involvement

Provide for and encourage employee involvement in the structure and operation of the program and in decisions that affect their safety and health so that they will commit their insight and energy to achieving the safety and health program's goal and objectives.

1. ☐ All personnel are involved in developing goals and can explain desired results and how results are measured.
   Points: 4

2. ☐ Majority of personnel feel they have a positive impact on identifying and resolving safety and health issues.
   Points: 3

3. ☐ Some personnel feel that they have a positive impact on safety and health.
   Points: 2

4. ☐ Personnel generally feel that their safety and health input will be considered by supervisors.
   Points: 1

5. ☐ Employee involvement in safety and health issues is not encouraged nor rewarded.
   Points: 0

f) Assigned Safety and Health Responsibilities

Assign and communicate responsibility for all aspects of the program so that managers, supervisors, and personnel in all parts of the organization know what performance is expected of them

1. ☐ All personnel can explain what performance is expected of them.
   Points: 4

2. ☐ Majority of personnel can explain what performance is expected of them.
   Points: 3

3. ☐ Some personnel can explain what performance is expected of them.
   Points: 2

4. ☐ Performance expectations are generally spelled out for all personnel.
   Points: 1

5. ☐ Specific job responsibilities and performance expectations are generally unknown or hard to find.
   Points: 0

g) Authority and Resource for Safety and Health

Assign and communicate responsibility for all aspects of the program so that managers, supervisors, and personnel in all parts of the organization know what performance is expected of them.

1. ☐ All personnel believe they have the necessary authority and resources to meet their responsibilities.
   Points: 4

2. ☐ Majority of personnel believe they have the necessary authority and resources to meet their responsibilities.
   Points: 3

3. ☐ Authority and resources are spelled out for all, but there is often a reluctance to use them.
   Points: 2

4. ☐ Authority and resources exist, but most are controlled by supervisors.
   Points: 1

5. ☐ All authority and resources come from supervision and are not delegated.
   Points: 0

h) Accountability

Hold managers, supervisors, and personnel accountable for meeting their responsibilities so that essential task will be performed.

1. ☐ Personnel are held accountable and all performance is addressed with appropriate consequences.
   Points: 4

2. ☐ Accountability systems are in place, but consequences used tend to be for negative performance only.
   Points: 3

3. ☐ Personnel are generally held accountable, but consequences and rewards do not always follow performance.
   Points: 2

4. ☐ There is some accountability, but it is generally hit or miss.
   Points: 1

5. ☐ There is no effort towards accountability.
   Points: 0

i) Program Review (Quality Assurance)

A review of program operations are held at least annually to evaluate their success in meeting the goal and objectives so that deficiencies can be identified and the program and/or the objectives can be revised when they do not meet the goal of effective safety and health protection.

1. ☐ In addition to a comprehensive review, a process is used which drives continuous correction.
   Points: 4

2. ☐ A comprehensive review is conducted at least annually and drives appropriate program modifications.
   Points: 3

3. ☐ A program review is conducted, but it doesn't drive all necessary program changes.
   Points: 2

4. ☐ Changes in programs are driven by events such as accidents or near misses.
   Points: 1

5. ☐ There is no program review process.
   Points: 0

2) Workplace Analysis

a) Hazard Identification (Expert Survey)

So that all hazards are identified: Conduct comprehensive baseline worksite surveys for safety and health and periodic comprehensive update surveys.

1. ☐ Comprehensive expert surveys are conducted regularly and result in corrective action and updated hazard inventories.
   Points: 4

2. ☐ Comprehensive expert surveys are conducted periodically and drive appropriate corrective action.
   Points: 3

3. ☐ Comprehensive expert surveys are conducted, but corrective actions sometimes lags.
   Points: 2

4. ☐ Expert surveys in response to accidents, complaints, or compliance activity only.
   Points: 1

5. ☐ No comprehensive surveys have been conducted.
   Points: 0

b) Hazard Identification (Change Analysis)

So that all hazards are identified: Analyze planned and new facilities, processes, materials, and equipment.

1. ☐ Every planned or new facility, process, material, or equipment is fully reviewed by a competent team, along with affected workers.
   Points: 4

2. ☐ Every planned or new facility, process, material, or equipment is fully reviewed by a competent team.
   Points: 3

3. ☐ High hazard planned or new facility, process, material or equipment are reviewed.
   Points: 2

4. ☐ Hazard reviews of planned or new facilities, processes, materials, or equipment are problem driven.
   Points: 1

5. ☐ No system for hazard review of planned or new facilities exists.
   Points: 0

c) Hazard Identification (Job and Process Analysis)

So that all hazards are identified: Analyze planned and new facilities, processes, materials, and equipment.

1. ☐ A current hazard analysis exists for all jobs, processes, and material; it is understood by all personnel; and personnel have had input into the analysis for their jobs.
   Points: 4

2. ☐ A current hazard analysis exists for all jobs, processes, and material and it is understood by all personnel.
   Points: 3

3. ☐ A current hazard analysis exists for all jobs, processes, or phases and is understood by many personnel.
   Points: 2

4. ☐ A hazard analysis program exists, but few are aware of it.
   Points: 1

5. ☐ There is no routine hazard analysis system in place.
   Points: 0

d) Hazard Identification (Inspection)

Provide for regular site safety and health inspections, so that new or previously missed hazards and failures in hazard controls are identified.

1. ☐ Personnel and supervisors are trained, conduct routine joint inspections, and all items are corrected.
   Points: 4

2. ☐ Inspections are conducted and all items are corrected; repeat hazards are seldom found.
   Points: 3

3. ☐ Inspections are conducted and most items are corrected, but some hazards are still uncorrected.
   Points: 2

4. ☐ An inspection program exists, but corrective action is not complete; hazards remain uncorrected.
   Points: 1

5. ☐ There is no routine inspection program in place and many hazards can be found.
   Points: 0

e) Hazard Reporting System

So that employee insight and experience in safety and health protection may be utilized and employee concerns may be addressed, provide a reliable system for personnel, without fear of reprisal, to notify management personnel about conditions that appear hazardous and to receive timely and appropriate responses, and encourage personnel to use the system.

1. ☐ A system exists for hazard reporting, personnel feel comfortable using it, and personnel feel comfortable correcting hazards on their own initiative.
   Points: 4

2. ☐ A system exists for hazard reporting and personnel feel comfortable using it.
   Points: 3

3. ☐ A system exists for hazard reporting and personnel feel they can use it, but the system is slow to respond.
   Points: 2

4. ☐ A system exists for hazard reporting but personnel find it unresponsive or are unclear how to use it.
   Points: 1

5. ☐ There is no hazard reporting system and/or personnel are not comfortable reporting hazards.
   Points: 0

f) Accident / Incident Investigation

Provide for investigation of accidents and "near miss" incidents, so that their causes and means for their prevention are identified.

1. ☐ All loss-producing incidents and near-misses are investigated for root cause with effective prevention.
   Points: 4

2. ☐ All OSHA-reportable incidents are investigated and effective prevention is implemented.
   Points: 3

3. ☐ OSHA-reportable incidents are generally investigated; accident cause and/correction may be inadequate.
   Points: 2

4. ☐ Some investigation of incidents takes place, but root cause is seldom identified and correction is spotty.
   Points: 1

5. ☐ Injuries are either not investigated or investigation is limited to report writing required for compliance.
   Points: 0

g) Injury / Illness Analysis

Analyze injury and illness trends over time, so that patterns with common causes can be identified and prevented.

1. ☐ Data trends are fully analyzed and displayed, common causes are communicated, management ensures prevention; and personnel are fully aware of trends, causes and means of prevention.
   Points: 4

2. ☐ Data trends are fully analyzed and displayed, common causes are communicated and management ensures prevention.
   Points: 3

3. ☐ Data is centrally collected and analyzed and common causes are communicated to supervisors.
   Points: 2

4. ☐ Data is centrally collected and analyzed but not widely communicated for prevention.
   Points: 1

5. ☐ Little or no effort is made to analyze data for trends, causes and prevention.
   Points: 0

h) Timely and Effective Hazard Control

So that all current and potential hazards, however detected, are corrected or controlled in a timely manner, established procedures for that purpose, using the following measures.

- Engineering techniques where feasible and appropriate;
- Procedures for safe work which are understood and followed by all affected parties, as a result of training, positive reinforcement, correction of unsafe performance, and, if necessary, enforcement through a clearly communicated disciplinary system;
- Provision of personal protective equipment, and
- Administrative controls, such as reducing the duration of exposure.

1. ☐ Hazard controls are fully in place, known to and supported by workforce, with concentration on engineering controls and safe work procedures.
   Points: 4

2. ☐ Hazard controls are fully in place with priority to engineering controls, safe work procedures, administrative controls, and personal protective equipment (in that order).
   Points: 3

3. ☐ Hazard controls are fully in place, but there is some reliance on personal protective equipment.
   Points: 2

4. ☐ Hazard controls are generally in place, but there is heavy reliance on personal protective equipment.
   Points: 1

5. ☐ Hazard control is not complete, effective, and appropriate.
   Points: 0

i) Facility and Equipment Maintenance

Provide for facility and equipment maintenance, so that hazardous breakdown is prevented.

1. ☐ Operators are trained to recognize maintenance needs and perform and order maintenance on schedule.
   Points: 4

2. ☐ An effective preventive maintenance schedule is in place and applicable to all equipment.

   Note: while not fully formalized; actual operating conditions and a review of maintenance practices indicate a solid foundation for a very well documented and effective maintenance program.

   Points: 3

3. ☐ A preventive maintenance schedule is in place and is usually followed except for higher priorities.
   Points: 2

4. ☐ A preventive maintenance schedule is in place but is often allowed to slide.
   Points: 1

5. ☐ There is little or no attention paid to preventive maintenance; break-down maintenance is the rule.
   Points: 0

j) Emergency Planning and Preparation

Plan and prepare for emergencies, and conduct training and drills as needed, so that the response of all parties to emergencies will be "second nature".

1. ☐ There is an effective emergency response plan and personnel know immediately how to respond as a result of effective planning, training, and drills.
   Points: 4

2. ☐ There is an effective emergency response plan and personnel have a good understanding of responsibilities as a result of plans, training, and drills.

   Note: Facility personnel have participated in the review of the plan and have been trained. However, no site deployment or table top exercises have been conducted since the facility has begun operations. Safety reviews and what-if response reviews have been part of the safety and operational meetings.

   Points: 3

3. ☐ There is an effective emergency response plan and team, but other personnel may be uncertain of their responsibilities.
   Points: 2

4. ☐ There is an effective emergency response plan, but training and drills are weak and roles may be unclear.
   Points: 1

5. ☐ Little effort is made to prepare for emergencies.
   Points: 0

k) Emergency Equipment

Plan and prepare for emergencies, and conduct training and drills as needed, so that the response of all parties to emergencies will be "second nature".

1. ☐ Facility is fully equipped for emergencies; all systems and equipment are in place and regularly tested; all personnel know how to use equipment and communicate during emergencies.
   Points: 4

2. ☐ Facility is well equipped for emergencies with appropriate emergency phones and directions; majority of personnel know how to use equipment and communicate during emergencies.

   Note: This rating may be higher once an unannounced exercise is conducted and actual knowledge; skill and abilities are tested and evaluated.

   Points: 3

3. ☐ Emergency phones, directions and equipment are in place, but only emergency teams know what to do.
   Points: 2

4. ☐ Emergency phones, directions and equipment are in place, but personnel show little awareness.
   Points: 1

5. ☐ There is little or no effort made to provide emergency equipment and information.
   Points: 0

l) Medical Program (Health Providers)

[None specific to this indicator. See next indicator.]

1. ☐ Occupational health providers are regularly on-site and fully involved.
   Points: 4

2. ☐ Occupational health providers are involved in hazard assessment and training.
   Points: 3

3. ☐ Occupational health providers are consulted about significant health concerns in addition to accidents.
   Points: 2

4. ☐ Occupational health providers are available, but normally concentrate on personnel who get hurt.

   Note: This is unmeasured as the facility is new and there have been no occupational health issues requiring company provided health providers.

   Points: 1

5. ☐ Occupational health assistance is rarely requested or provided.
   Points: 0

m) Medical Program (Emergency Care)

Establish a medical program, which includes availability of first aid on-site, and of physician and emergency medical care nearby, so that harm will be minimized if any injury or illness does occur.

1. ☐ Personnel fully trained in emergency medicine are always available on-site.
   Points: 4

2. ☐ Personnel with basic first aid skills are always available on-site, all shifts.
   Points: 3

3. ☐ Either on-site or near-by community aid is always available on day shift.
   Points: 2

4. ☐ Personnel with basic first aid skills are usually available, with community assistance nearby.
   Points: 1

5. ☐ Neither on-site nor community aid can be ensured at all times.
   Points: 0

3) Safety and Health Training

a) Personnel Learn Hazard (How to Protect Themselves and Others).

Ensure that all personnel understand the hazards to which they may be exposed and how to prevent harm to themselves and others from exposure to these hazards, so that personnel accept and follow established safety and health protections.

1. ☐ Facility is committed to high quality employee hazard training, ensures all participate, and provides regular updates; in addition, personnel can demonstrate proficiency in, and support of, all areas covered by training.
   Points: 4

2. ☐ Facility is committed to high quality employee hazard training, ensures all participate, and provides regular updates.

   Note: as a new facility there has not been adequate time to measure the effectiveness of regular updates.

   Points: 3

3. ☐ Facility provides legally required training and makes effort to include all personnel.
   Points: 2

4. ☐ Training is provided when the need is apparent; experienced personnel are assumed to know the material.
   Points: 1

5. ☐ Facility depends on experience and informal peer training to meet needs.
   Points: 0

b) Supervisor Learn Responsibilities and Underlying Reasons

So that supervisors will carry out their safety and health responsibilities effectively, ensure that they understand those responsibilities and the reasons for them, including:

- Analyzing the work under their supervision to identify unrecognized potential hazards;
- Maintaining physical protections in their work areas; and
- Reinforcing employee training on the nature of potential hazards in their work and on needed protective measures, through continual performance feedback and, if necessary, through enforcement of safe work practices.

1. ☐ All supervisors assist in worksite hazard analysis, ensure physical protections, reinforce training, enforce discipline and can explain work procedures based on the training provided to them.
   Points: 4

2. ☐ Most supervisors assist in worksite hazard analysis, ensure physical protections, reinforce training, enforce discipline and can explain work procedures based on the training provided to them.
   Points: 3

3. ☐ Supervisors have received basic training, appear to understand and demonstrate importance of worksite hazard analysis, physical protections, training reinforcement, discipline and knowledge of work procedures.
   Points: 2

4. ☐ Supervisors make responsible efforts to meet safety and health responsibilities, but have limited training.
   Points: 1

5. ☐ There is no formal effort to train supervisors in safety and health responsibilities.
   Points: 0

c) Mangers Learn Safety and Health Program Management

Ensure that managers understand their safety and health responsibilities, as described under "Management Commitment and Employee Involvement", so that the managers will effectively carry out those responsibilities.

1. ☐ All managers have received formal training in safety and health management responsibilities.
   Points: 4

2. ☐ All managers follow, and can explain, their roles in safety and health program management.
   Points: 3

3. ☐ Managers generally show a good understanding of their safety and health roles and usually model them.
   Points: 2

4. ☐ Managers are generally able to describe their safety and health roles, but often have trouble modeling them.
   Points: 1

5. ☐ Managers generally show little understanding of their safety and health management responsibilities.
   Points: 0

Appendix E. Key Performance Indicators

Performance Metrics

The effectiveness of any safety management system begins with management's commitment and requires clearly stated goals and objectives that are realistic, achievable and measurable. GRS understands that our Corporate Culture will be a direct result of how our personnel (peers) feel about our ability to set the example and provide the necessary resources to meet our objectives in a fair, timely and positive workplace environment. There are many critical components needed to involve, encourage and support our personnel to become proactive stakeholders in the success of our organization.

Key Performance Indicators (KPIs) will focus on the effectiveness of executive management in creating the corporate vision, allocating resources and assuring pipeline safety goals and objectives are being met. These KPIs identify, track and measure the GRS overall commitment to safe pipeline operations, worker protection, public safety and environmental stewardship. These KPIs identify and measure:

- Management leadership and Commitment
- The effectiveness communicating goals and objectives
- The effectiveness of the GRS Pipeline Safety Operations and Maintenance Program(s) (CPUC)
- The effectiveness of GRS Worker Protection Programs (Cal/OSHA)
- The effectiveness of GRS Environmental Protection Programs (Cal/EPA)
- The effectiveness of the GRS Pipeline Safety Management System
- The number of performance reviews completed
- How safety related objectives that defined, implemented and their effectiveness.
- The percentage of safety related objectives that are met and not met
- Employee involvement

1) Scoring Matrix

a) Total Score

	Key Performance Indicator Functional Group	Score	Reference
1.	Management corporate culture, commitment and support		
2.	Worker Protection		
3.	Public Safety		
4.	Environmental Protection		
5.	System Reliability		
5.a.	Engineering		
5.b.	Operations & Maintenance		
5.c.	Integrity Management		
6.	Inspections & Audits		
7.	Emer. Mgmt. & Response		
8.	Accident & Incident Investigation		
9.	Notification & Reporting		

4) Key Performance Indicator Functional Groups

This section of KPIs includes performance based Qualitative and Quantities performance indicators that have been developed for each of the nine (9) functional groups of the Pipeline Safety Management System. These KPIs are used annually, and as needed for updates, repairs, modifications or management of change verification to assure regulatory compliance and measure the effectiveness of the PSMS program

a) Management corporate culture, commitment and support

1.	Culture	Score
1	Annually (or as needed), the GRS executive management team communicates the corporate vision, goals and expectations that support a culture of minimizing and/or eliminating accidents, explosions, fires, and dangerous conditions for the protection of the public and the gas corporation workforce.	
2	A suggestion box is located at the GRS facility for the purpose of receiving anonymous pipeline safety improvement suggestions and the suggestions are taken into consideration by the PSMS Team.	
3	Annually (or as needed) the GRS executive management team communicates with all GRS personnel the importance of actively embracing the GRS safety culture and contributing to maintaining a safe work environment.	
4	Have any systematic failures been identified and have corrective actions been implemented to avoid such failures in the future?	
5	Has management participated in all accident / incident investigations and have those investigations provided the necessary insight to assure that the proper measures are being taken to avoid accidents/incidents from hazard / hazard potentials:	
6	Has management reviewed its incentive program to assure that the program supports effective operations and maintenance activities; rather than maintenance avoidance?	
7	Has management reviewed safety critical decisions to assure adequate resources were available to make a well informed decision? If not, has this been corrected?	

2.	Commitment and Support	Comments
1	Annually, the GRS executive management team ensures that the facility has evaluated its workload and technical capability needs and that the facility is properly staffed and trained to safety operate the pipeline system in accordance with the provisions of the Safety Plan.	
2	Annually, the GRS executive management team ensures Employee Participation in the development and implementation of safety related policies, programs and plans.	
3	Annually, the GRS executive management team conducts a Safety and Health Program Check-up for worker safety.	
4	Annually, the GRS executive management team reviews the work of the PSMS Team with specific attention being paid to full regulatory compliance with the CPUC, Cal/EPA, Cal/OSHA and other jurisdictional agencies; including a review of the results, recommendations, improvements and corrective actions of the PSMS Team.	
5	Annually, the PSMT team commissions and reviews the results of an internal independent PHMSA Form 1, Standard Gas Transportation Inspection audit; implementing improvements and/or corrective actions as needed.	
6	Upon the completion of pipeline construction activities the PSMT team reviews the results of an internal independent PHMSA Form 5, Gas Pipeline and Compressor Station Construction audit; implementing improvements and/or corrective actions as needed.	
7	Upon completion of Gas Storage Field Construction / Development activities the PSMT reviews the results of an internal independent PHMSA Form 12, Gas Storage Field Review audit; implementing improvements / corrective actions as needed.	

2.	Commitment and Support	Comments
8	The PSMT team investigates all reportable and/or recordable accidents.	
9	The PSMT team reviews and approves corrective actions based on the results of all reportable and/or recordable accident investigations and PHMSA Form 11, Pipeline Failure Investigation Reports.	
10	Annually, the PSMT team reviews the results of the PHMSA Form 13, PHMSA Pipeline Drug and Alcohol Questions; implementing improvements and/or corrective actions as needed.	
11	Annually, the PSMT team reviews the results of an internal independent review of PHMSA Form 13, PHMSA Pipeline Drug and Alcohol Questions; implementing improvements and/or corrective actions as needed.	
12	Annually, the PSMT team reviews the results of an internal independent review of PHMSA Form 14, Operator Qualification Inspection Form; implementing improvements and/or corrective actions as needed.	
13	Annually, the PSMT team reviews the results of an internal independent review of PHMSA Form 15, Operator Qualification Field Inspection Protocol Form; implementing improvements and/or corrective actions as needed.	
14	Annually, the PSMT team reviews the results of an internal independent review of PHMSA Form 16, Gas IMP Field Verification Inspection; implementing improvements and/or corrective actions as needed.	
15	Annually, the PSMT team reviews the results of an internal independent review of PHMSA Form 17, Supplemental SCC Questionnaire Gas Transmission or Liquid Pipeline; implementing improvements and/or corrective actions as needed.	

2.	Commitment and Support	Comments
16	Annually, the PSMT team reviews the results of an internal independent review of PHMSA Form 21, Public Awareness Program Effectiveness Inspection Form; implementing improvements and/or corrective actions as needed.	
17	Are reviews conducted as needed to confirm that contractor procedures and qualifications (including welder procedures and welder qualifications) are code compliant?	

b) Worker Protection

1.	Personnel	#	Calculated Rate or Comments
1	Are personnel trained in core safety and health program requirements?		
2	Number of GRS Personnel trained in core safety and health program requirements?		
3	# of GRS Personnel Performing Pipeline engineering and/or construction functions.		
4	# of GRS Personnel Performing Pipeline Safety Covered Tasks.		
5	# of GRS Contractors Performing Pipeline engineering and/or construction functions.		
6	# of GRS Contract personnel Performing Pipeline Safety Covered Tasks.		
7	Are periodic observations / evaluations conducted where personnel are observed performing their job responsibilities (See OQ Covered Tasks)?		
8	Do personnel conduct Job Safety Analysis?		
9	Have all recommendations from personnel been reviewed and has a response been provided to the individual making the recommendation?		
10	Are personnel trained and understand the GRS policy on the use of prescription drugs at work?		

1.	Personnel	#	Calculated Rate or Comments
11	Have personnel been informed of the GRS anti-drug and contraband policy?		
12	Are near misses, accidents and incidents investigated?		

2.	Hours Worked / Lost	RT	OT	Calculated Rate or Comments
1	Total Hours Worked (All GRS Personnel)			**Total Hours Worked (Employee + Contractors)**
2	Total Hours Worked (All GRS Contractors)			= ( ) + (
3	Total Hours Lost Work			Total Hours Lost Work: _____
4	# of Lost Time Cases			**Lost Time Case Rate** (# of cases per 100 full-time personnel) $= \frac{\text{\# of Lost Time Cases}}{\text{Total Hours Worked (Employee + Contrac}}$

3.	Incidents	RT	OT	Calculated Rate or Comments
1	Total # of Deaths			**Total:**
2	Total Death Case Rate			**Total Death Case Rate** (# of deaths per 100 full-time personnel) $= \frac{\text{Total \# of Deaths}}{\text{Total Hours Worked (Employee + Contrac}}$
3	Total # of Injuries			**Total:**
4	Total Injury Case Rate			**Total Injury Case Rate** (# of injuries per 100 full-time personnel) $= \frac{\text{Total \# of Injuries}}{\text{Total Hours Worked (Employee + Contrac}}$
5	Total # of all Illnesses			Total # of Illnesses = # Skin Disorders + # Respiratory Conditions + # Poisonings + # Hearing Losses + # All Other Illnesses
6	# of Skin Disorder			**Total:**
7	# of Respiratory Condition			**Total:**
8	# of Poisoning			**Total:**
9	# of Hearing Loss			**Total:**
10	# of All Other Illnesses			**Total:**

3.	Incidents	RT	OT	Calculated Rate or Comments
11	Total Illnesses Case Rate			**Total Illness Case Rate** (# of illnesses per 100 full-time personnel) $= \frac{\text{Total \# of Illnesses}}{\text{Total Hours Worked (Employee + Contrac}}$
12	Total Case Incident Rate			**Total Case Incident Rate** (# of incidents per 100 full-time personnel) = Total Injury Case Rate + Total Illness Case Rate + Total Death Case Rate
13	Total # of Near-Misses Case Rate			**Total Near-Miss Case Rate** (# of near-misses per 100 full-time personnel) $= \frac{\text{Total \# of Near Misses}}{\text{Total Hours Worked (Employee + Contrac}}$

4.	Treatments	#	Calculated Rate or Comments
1	First Aid		
2	Emergency Room		
3	In-Patient Hospitalization		
4	Total % of Injuries / Illnesses Receiving Treatment		**% of Injuries / Illness Receiving Treatment** $= \frac{\quad}{\#\quad +\quad \#}$

5.	DART Rates (Days Away, Restrictions & Transfers)	#	Calculated Rate or Comments
1	Total # of Injuries Involving Days Away from Work		
2	Total # of Injuries Involving Days Restricted Work Activity, and/or Job Transfer		
3	Total DART Injury Case Rate		**Total DART Injury Case Rate** $= \frac{\text{Total \# of DART Injuries}}{\text{Total Hours Worked (Employee + Contrac}}$
4	Total # of Illnesses Involving Days Away from Work		
5	Total # of Illnesses Involving Restricted Work Activity, and/or Job Transfer		

5.	DART Rates (Days Away, Restrictions & Transfers)	#	Calculated Rate or Comments
6	Total DART Illness Case Rate		**Total DART Illness Case Rate** $= \frac{\text{Total \# of DART Illnesses}}{\text{Total Hours Worked (Employee + Contrac}}$
7	Total DART Rate (Days Away from Work, Restricted Work Activity, and/or Job Transfer)		**Total DART Case Incident Rate** = Total DART Injury Case Rate + Total DART Illness Case Rate

c) Public Safety

1.	One Calls	#	Calculated Rate or Comments
1	Total # of One Calls		
2	Total # of Excavations w/o One Call		
3	% of Excavations made without One Calls made prior to excavation activities		**% of One Calls Not Made:** $= \frac{\text{\# of Excavations with One Calls}}{\text{Total \# of Excavations}}\ 100$

2.	Excavations	#	Calculated Rate or Comments
1	Total # of Excavations		
2	# of Excavations Resulting in Injury / Illness		
3	% of Excavations made resulting in Injury / Illness		**% Excavations resulting in Injury/Illness** $= \frac{\text{\# of Excavations resulting in Injury/Illness}}{\text{Total \# of Excavations}}$
4	# of Excavations Resulting in Property Damage		
5	% of Excavations made resulting in Property Damage		**% Excavations resulting in Property Damage** $= \frac{\text{\# of Excavations Resulting in Property Dama}}{\text{Total \# of Excavations}}$
6	# of Excavations Resulting in Environmental Damage		
7	% of Excavations made resulting in Environmental Damage		**% Excavations resulting in Environmental Damage** $= \frac{\text{\# of Excavations Resulting in Environmental}}{\text{Total \# of Excavations}}$

3.	Stakeholder Complaints	#	Calculated Rate or Comments
1	# of Complaints filed by Public		
2	% of Stakeholder Complaints from Stakeholders		**% Stakeholder Complaints** $= \frac{\text{\# of Stakeholder Complaints}}{\text{Total \# of Stakeholders}}\ 100$

4.	Stakeholder Awareness (Public Awareness)	#	Calculated Rate or Comments
1	# of Public Meetings Held With Stakeholders		
2	# of Public Awareness Annual Mailers Sent		
3	Total # of Responses Received		
4	% of Stakeholders Providing Feedback through Public Awareness Mailings		**% of Stakeholders Providing Feedback through Public Awareness Mailings** $= \frac{\text{Total \# of Responses Received}}{\text{\# of Public Awareness Annual Mailers Sent}}$

5.	Public Mailing Question	Yes	No	No Response	Calculated Rate or Comments
1	# of Responses Received that can recognize a PL leak				
2	% of Stakeholder Responses Received				**% of Stakeholder Responses Received** $= \frac{\text{\#} \quad " \quad "}{\text{Total \# of Responses Received}}$
3	# of Responses Received that know what to do if a leak is suspected				
4	% of Stakeholder that know what to do if a leak is suspected				**% of Stakeholder that know what to do if a leak is suspected =** $= \frac{\text{\# Stakeholders that know}}{\text{Total \# of Responses Received}}$
5	# of Responses Received that know what to do in case of a leak				
6	% of Stakeholders that know what to do in case of a leak				**% of Stakeholder that know what to do if a leak is suspected =** $= \frac{\text{\# Stakeholders that know}}{\text{Total \# of Responses Received}}$
7	# of Responses Received that knows who to call before digging				

5.	Public Mailing Question	Yes	No	No Response	Calculated Rate or Comments
8	% of Stakeholders that knows who to call before digging				**% of Stakeholder that know who to call before digging =** $= \frac{\text{\# Stakeholders that know}}{\text{Total \# of Responses Received}}$
9	# of Responses Received that are aware of a GRS PL in the area prior to receiving the mailing				
10	% of Stakeholders that are aware of a GRS PL in the area prior to receiving the mailing				**% of Stakeholder that are aware of a GRS PL in the area prior to receiving the mailing =** $= \frac{\text{\# Stakeholders that know}}{\text{Total \# of Responses Received}}$
11	# of Responses Received that are aware of the need to call before you dig				
12	% of Stakeholders that are aware of the need to call before you dig				**% of Stakeholder that are aware of the need to call before digging =** $= \frac{\text{\# Stakeholders that know}}{\text{Total \# of Responses Received}}$

d) Environmental Protection

1.	Environmental Protection	#	Calculated Rate or Comments
1	# of Permit Violations		
2	# of Permit Exceedances		
3	Have and potential permit exceedances been identified and corrected?		
4	Was the SARA Title III, Tier II report filed on time?		
5	# of Regulatory Violations		
6	# of Public Complaints		
7	# of Reportable Quantity Releases		
8	# of Releases Resulting in Fire or Explosion		
9	# of Unplanned Minor Releases –Air		
10	# of Unplanned Minor Releases –Ground		
11	# of Unplanned Minor Releases –Water		
12	# of Reportable Releases –Air		
13	% Reportable Air Releases		**% Reportable Air Releases** $= \frac{\#}{\#} 100$
14	# of Reportable Releases – Ground		
15	% Reportable Ground Releases		**% Reportable Ground Releases** $= \frac{\#}{\#} 100$
16	# of Reportable Releases – Water		
17	% Reportable Water Releases		**% Reportable Water Releases** $= \frac{\#}{\#} 100$

1.	Environmental Protection	#	Calculated Rate or Comments
18	Total # of All Reportable Releases		
19	Total # of All Reportable Releases that resulted in an Off-site Release		
20	% of Off-site Reportable Releases		**% of Off-site Reportable Releases** $= \frac{\#}{\#} 100$

e) Engineering

1.	Engineering	Yes/ No	Comments
1	Has the Pipeline and Hazardous Materials Safety Administration (PHMSA) Evaluation Report of Gas Pipeline and Compressor Station Construction been completed?		
2	Are there any potential non-compliance issues resulting from the review?		Note: a corrective action plan (including safeguards) is required if potential non-compliance issues have been identified. Operations must be safeguarded or suspended as needed to assure safe operations while implementing the corrective actions.
3	Are all pipeline records traceable, verifiable and complete?		
4	Has the Maximum Allowable Operating Pressure (MAOP) been validated?		
5	Was the Alternative Method for determining the MAOP used?		
6	Are the minimum California Public Utilities Commission (CPUC) and PHMSA standards for the safe design, construction, installation, operation, and maintenance of gas transmission met?		
7	Is there a design basis for the pipeline?		
8	Does the design basis specify the Engineering Standards and Codes for which it was designed?		
9	Has a valve location plan been developed?		

1.	Engineering	Yes/ No	Comments
10	Are automatic shut-off or remote controlled sectionalized block valves installed on Intrastate Transmission lines that are located in a High Consequence Area (HCA) or traverse an active seismic earthquake fault?		
11	Are all pipelines pressure tested?		
12	Has a comprehensive pressure testing implementation plan been developed prior to conducting a pressure test?		

f) Operations and Maintenance

1.	Operator Qualification	#	Calculated Rate or Comments
1	# of Qualified Operators that have been observed performing "Covered Tasks" (Performance Monitoring)		
2	# of Performance Monitoring Resulting in Retraining		
3	% of Performance Monitoring Resulting in Retraining		**% of Performance Monitoring Resulting in Retraining** $= \frac{\#}{\#} \quad 100$
4	# of Performance Monitoring Resulting in Disqualification		
5	% of Performance Monitoring Resulting in Disqualification		**% of Performance Monitoring Resulting in Disqualification** $= \frac{\#}{\#} \quad 1$
6	Have any Personnel Performed a Covered Task While Not Under the Direct Observation and Supervision of a Qualified Individual		If "Yes" the PSMT Team shall investigate and remedy in accordance with GRS Policy.

2.	Inspection and Testing	#	Calculated Rate or Comments
1	Total # of Pipeline Patrols & Leakage Surveys Completed		
2	# of Pipeline Patrols Completed		
3	# of Leakage Surveys Completed		
4	Total # of Leaks/Failures Identified		
5	# of Exposed Pipe Identified		
6	# of Repairs/Replacement Made		
7	# of Inspections and Test Out of Compliance		

2.	Inspection and Testing	#	Calculated Rate or Comments
8	# of Inspections and Tests Completed Within Due Date		
9	# of Inspections and Tests Completed Between Due Date and Last Allowable Date		

3.	Abnormal and Emergency Conditions	#	Calculated Rate
1	# of Abnormal Operating Conditions		
2	# of Emergency Conditions		
3	# of Emergencies Responded to Promptly		
4	% of Emergencies Responded to Promptly		**% of Emergencies Responded to Promptly** $= \frac{\#}{\#}$

4.	Control Room Management	#	Calculated Rate or Comments
1	Average # of alarms per shift - Day		Tracked, Documented and Reviewed Monthly.
2	Average # of alarms per shift - Night		Tracked, Documented and Reviewed Monthly.
3	# of points affecting safety that have been taken off scan in the SCADA Host		Tracked, Documented and Reviewed Monthly.
4	# of points affecting safety that have had alarms inhibited		Tracked, Documented and Reviewed Monthly.
5	# of points affecting safety that generated false alarms		Tracked, Documented and Reviewed Monthly.
6	# of points affecting Safety That Have Had Forced or Manual Values for Periods of Time Exceeding that Required for Associated Maintenance or Operating Activities		Tracked, Documented and Reviewed Monthly.

5.	Management of Change	#	Calculated Rate
1	# of changes completed with Management of Change (MOC)		
2	# of changes completed without MOC		
3	% of Changes Completed Without MOC		**% of Changes Completed Without MOC** $= \frac{\#}{\#} 100$

g) Integrity Management

1.	Pipeline System Information	#	Calculated Rate
1	Total Length of Pipeline System (Miles)		
2	Miles of Pipe – Class 1		
3	% of Pipe in Class 1		**% of Pipe in Class 1** $= \frac{\text{Miles of Pipe– Class 1}}{\text{Total Length of Pipeline System (Miles)}} 100$
4	Miles of Pipe – Class 2		
5	% of Pipe in Class 2		**% of Pipe in Class 2** $= \frac{\text{Miles of Pipe– Class 2}}{\text{Total Length of Pipeline System (Miles)}} 100$
6	Miles of Pipe – Class 3		
7	% of Pipe in Class 3		**% of Pipe in Class 3** $= \frac{\text{Miles of Pipe– Class 3}}{\text{Total Length of Pipeline System (Miles)}} 100$
8	Miles of Pipe – Class 4		
9	% of Pipe in Class 4		**% of Pipe in Class 4** $= \frac{\text{Miles of Pipe– Class 4}}{\text{Total Length of Pipeline System (Miles)}} 100$
10	Miles of Pipe - High Consequence Areas (HCA		
11	% of Pipe in High Consequence Area		**% of Pipe in High Consequence Area** $= \frac{\text{Miles of Pipe– HCA}}{\text{Total Length of Pipeline System (Miles)}} 100$
12	Miles of Pipe – Cathodically Protected and Coated		
13	% of Pipe Cathodically Protected and Coated		**% of Pipe Cathodically Protected and Coated** $= \frac{\text{Miles of Pipe– CathodicallyProtected \& Coated}}{\text{Total Length of Pipeline System (Miles)}}$

2.	Integrity Inspections	#	Calculated Rate
1	Miles of Pipe Inspected by Direct Assessment		
2	Miles of Pipe Inspected With In-line Inspection Tool		
3	Miles of Pipe Inspected by Pressure Test		
4	Miles of Pipe Inspected by Other Techniques		
5	Total Miles of Pipe Inspected		**Total Miles of Pipe Inspected** = (+ + +)
6	# of Pressure Test Failures – Ruptures and Leaks		
7	# of Pressure Test Ruptures – Complete Failure of Pipe Wall		
8	# of Pressure Test Leaks – Escape of Test Medium		
9	Total # of Pressure Test Failures, Ruptures and Leaks		**Total # of Pressure Test Failures, Ruptures and Leaks** = # . (& + +)
10	# of Anomalies Identified		
11	# of Anomalies Excavated		
12	% of Anomalies Excavated		**% of Anomalies Excavated** $= \frac{\#}{\#} \quad 100$
13	# of Anomalies Repaired – Immediate Repair Condition		
14	# of Anomalies Repaired – One-Year Condition		
15	# of Anomalies Repaired – Monitored Condition		

2.	Integrity Inspections	#	Calculated Rate
16	# of Anomalies Repaired – Scheduled Condition		
17	Total # of Anomalies Repaired		**Total # of Anomalies Repaired** = # (+ + +

h) Inspection & Audits

1.	Internal Audits	#	Calculated Rate or Comments
1	Total # of All Internal Audit(s)		Includes all Audits (Safety and Health, Environmental, Pipeline Safety, Well Safety, etc.)
2	Total # of All Corrective Actions Resulting from Internal Audit(s)		
3	# of PHMSA Form 1, Standard Gas Transportation Inspection audit		
4	# of Corrective Actions Resulting from PHMSA Form 1 Audit(s)		
5	PHMSA Form 5, Gas Pipeline and Compressor Station Construction audit		
6	# of Corrective Actions Resulting from PHMSA Form 5 Audit(s)		
7	PHMSA Form 12, Gas Storage Field Review audit		
8	# of Corrective Actions Resulting from PHMSA Form 12 Audit(s)		
9	PHMSA Form 11, Pipeline Failure Investigation Reports.		
10	# of Corrective Actions Resulting from PHMSA Form 11 Audit(s)		
11	PHMSA Form 13, PHMSA Pipeline Drug and Alcohol Questions		
12	# of Corrective Actions Resulting from PHMSA Form 13 Audit(s)		
13	PHMSA Form 14, Operator Qualification Inspection Form		
14	# of Corrective Actions Resulting from PHMSA Form 14 Audit(s)		
15	PHMSA Form 15, Operator Qualification Field Inspection Protocol Form		
16	# of Corrective Actions Resulting from PHMSA Form 15 Audit(s)		

1.	Internal Audits	#	Calculated Rate or Comments
17	PHMSA Form 16, Gas IMP Field Verification Inspection		
18	# of Corrective Actions Resulting from PHMSA Form 16 Audit(s)		
19	PHMSA Form 17, Supplemental SCC Questionnaire Gas Transmission or Liquid Pipeline		
20	# of Corrective Actions Resulting from PHMSA Form 17 Audit(s)		
21	PHMSA Form 21, Public Awareness Program Effectiveness Inspection Form		
22	# of Corrective Actions Resulting from PHMSA Form 21 Audit(s)		
23	# of Internal Audit(s) – Health & Safety		
24	# of Corrective Actions Resulting from Internal Health & Safety Audit(s)		
25	# of Internal Audit(s) – Environmental		
26	# of Corrective Actions per Internal Audit - Environmental		

2	PHMSA Regulatory Audits	#	Calculated Rate
1	# of PHMSA Form 1, Standard Gas Transportation Inspection audit		
2	# of Corrective Actions Resulting from PHMSA Form 1 Audit(s)		
3	# of PHMSA Form 1 Corrective Actions per # of PHMSA Form Audits - Standard Inspection Report		**# of PHMSA Form 1 Corrective Actions per # of PHMSA Form 1 Audits - Standard Inspection Report** $= \frac{\#\text{ of PHMSA Form 1 Corrective Actions}}{\#\text{ of PHMSA Form 1 Audits}}$

2	PHMSA Regulatory Audits	#	Calculated Rate
4	Penalties Received ($)		
5	Penalties Received per Regulatory Audit		**Penalties Received per Regulatory Audit** $= \frac{(\$)}{\#\quad \text{PHMSA Form 1 Audits}}$
6	PHMSA Form 5, Gas Pipeline and Compressor Station Construction audit		
7	# of PHMSA Corrective Actions Resulting from PHMSA Form 5 Audit(s)		
8	# of Form 5 Corrective Actions per # of PHMSA Form 5 Audits		**# of PHMSA Form 5 Corrective Actions per # of PHMSA Form 5 Audits** $= \frac{\#\text{ of PHMSA Form 5 Corrective Actions}}{\#\text{ of PHMSA Form 5 Audits}}$
9	Penalties Received ($)		
10	Penalties Received per Regulatory Audit		**Penalties Received per Regulatory Audit** $= \frac{\text{Penalties Received (\$)}}{\#\text{ of PHMSA Form 5 Audits}}$
11	PHMSA Form 11, Pipeline Failure Investigation Reports.		
12	# of Corrective Actions Resulting from PHMSA Form 11 Audit(s)		
13	# of PHMSA Form 11 Corrective Actions per # of PHMSA Form 11 Audits		**# of PHMSA Form 11 Corrective Actions per # of PHMSA Form 11 Audits** $= \frac{\#\text{ of PHMSA Form 11 Corrective Actions}}{\#\text{ of PHMSA Form 11 Audits}}$
14	Penalties Received ($)		
15	Penalties Received per Regulatory Audit		**Penalties Received per Regulatory Audit** $= \frac{\text{Penalties Received (\$)}}{\#\text{ of PHMSA Form 11 Audits}}$

2	PHMSA Regulatory Audits	#	Calculated Rate
16	PHMSA Form 12, Gas Storage Field (GSF) Review audit		
17	# of Corrective Actions Resulting from PHMSA Form 12 Audit(s)		
18	# of PHMSA Form 12 Corrective Actions per # of PHMSA Forms 12 Audits - GSF Review		**# of PHMSA Form 12 Corrective Actions per # of PHMSA Forms 12 Audits - GSF Review** $= \frac{\#\ 12}{\#\ 12}$
19	Penalties Received ($)		
20	Penalties Received per Regulatory Audit		**Penalties Received per Regulatory Audit** $= \frac{(\$)}{\#\ 12}$
21	PHMSA Form 13, PHMSA Pipeline Drug and Alcohol Questions		
22	# of Corrective Actions Resulting from PHMSA Form 13 Audit(s)		
23	# of PHMSA Form 13 Corrective Actions per PHMSA Form 13 Audit - Pipeline Drug & Alcohol Questions		**# of PHMSA Form 13 Corrective Actions per PHMSA Form 13 Audit - Pipeline Drug & Alcohol Questions** $= \frac{\#\ \text{of PHMSA Form 13 Corrective Actions}}{\#\ \text{of PHMSA Form 13 Audits}}$
24	Penalties Received ($)		
25	Penalties Received per Regulatory Audit		**Penalties Received per Regulatory Audit** $= \frac{(\$)}{\#\ 13}$
26	PHMSA Form 14, Operator Qualification Inspection Form		
27	# of Corrective Actions Resulting from PHMSA Form 14 Audit(s)		
28	# of Proposed Notices of Violation per Regulatory Audit - Operator Qualification Inspection		**# of PHMSA Form 14 Corrective Actions per PHMSA Form 14 Audit - Operator Qualification Inspection** $= \frac{\#\ 14}{\#\ 14}$

2	PHMSA Regulatory Audits	#	Calculated Rate
29	Penalties Received ($)		
30	Penalties Received per Regulatory Audit		**Penalties Received per Regulatory Audit** $= \frac{(\$)}{\#\ 14}$
31	PHMSA Form 15, Operator Qualification Field Inspection Protocol Form		
32	# of Corrective Actions Resulting from PHMSA Form 15 Audit(s)		
33	# of PHMSA Form 15 Corrective Actions per PHMSA Form 15 Audits – Operator Qualification Field Inspection Protocol Form		**# of PHMSA Form 15 Corrective Actions per PHMSA Form 15 Audits – Operator Qualification Field Inspection Protocol Form** $= \frac{\#\ 15}{\#\ 15}$
34	Penalties Received ($)		
35	Penalties Received per Regulatory Audit		**Penalties Received per Regulatory Audit** $= \frac{(\$)}{\#\ 15}$
36	PHMSA Form 16, Gas IMP Field Verification Inspection		
37	# of Corrective Actions Resulting from PHMSA Form 16 Audit(s)		
38	# of PHMSA Form 16 Corrective Actions per PHMSA Form 16 Audit - Gas IMP Field Verification		**# of PHMSA Form 16 Corrective Actions per PHMSA Form 16 Audit - Gas IMP Field Verification** $= \frac{\#\ 16}{\#\ 16}$
39	Penalties Received ($)		
40	Penalties Received per Regulatory Audit		**Penalties Received per Regulatory Audit** $= \frac{(\$)}{\#\ 16}$
41	PHMSA Form 17, Supplemental SCC Questionnaire Gas Transmission or Liquid Pipeline		

2	PHMSA Regulatory Audits	#	Calculated Rate
42	# of Corrective Actions Resulting from PHMSA Form 17 Audit(s)		
43	# of PHMSA Form 17 Corrective Actions per PHMSA Form 17 Audits – Supplemental SCC Questionnaire Gas Transmission or Liquid Pipeline		**# of PHMSA Form 17 Corrective Actions per PHMSA Form 17 Audits – Supplemental SCC Questionnaire Gas Transmission or Liquid Pipeline** $= \frac{\#\ 17}{\#\ 17}$
44	Penalties Received ($)		
45	Penalties Received per Regulatory Audit		**Penalties Received per Regulatory Audit** $= \frac{(\$)}{\#\ 17}$
46	PHMSA Form 21, Public Awareness Program Effectiveness Inspection Form		
47	# of Corrective Actions Resulting from PHMSA Form 21 Audit(s)		
48	# of PHMSA Form 21 Corrective Actions per PHMSA Form 21 Audits - Public Awareness Program Effectiveness		**# of PHMSA Form 21 Corrective Actions per PHMSA Form 21 Audits - Public Awareness Program Effectiveness** $= \frac{\#\ 21}{\#\ 21}$
49	Penalties Received ($)		
50	Penalties Received per Regulatory Audit		**Penalties Received per Regulatory Audit** $= \frac{(\$)}{\#\ 21}$
51	Total # of PHMSA Audits		
52	Total # of PHMSA Proposed Notice of Violation		
53	% of Proposed Notice of Violation (NOV) per PHMSA Audit		**% of Proposed Notice of Violation per PHMSA Audit** $= \frac{\text{Total \# of PHMSA Proposed NOV}}{\text{Total \# of PHMSA Audits}}\ 100$
54	Total PHMSA Penalties Received ($)		

2	PHMSA Regulatory Audits	#	Calculated Rate
55	Average $ Penalty Received per PHMSA Audit		**Average $ Penalty Received per PHMSA Audit** $= \frac{\text{Total PHMSA Penalties Received (\$)}}{\text{Total \# of PHMSA Audit(s)}}$

3.	Regulatory Audits – Cal\OSHA	#	Calculated Rate or Comments
1	# of Regulatory Audits – Cal\OSHA		
2	# of Proposed Notices of Violation		
3	# of Proposed Notices of Violation per Regulatory Audit – Cal\OSHA		**# of Proposed Notices of Violation per Regulatory Audit – CAL\OSHA** $= \frac{\#}{\#\quad\backslash}$
4	Penalties Received ($)		
5	Penalties Received per Regulatory Audit		**Penalties Received per Regulatory Audit** $= \frac{(\$)}{\#\quad\backslash}$

4.	Regulatory Audits – Cal\EPA	#	Calculated Rate or Comments
1	# of Regulatory Audits – Cal\EPA		
2	# of Proposed Notices of Violation		
3	# of Proposed Notices of Violation per Regulatory Audit – Cal\EPA		**# of Proposed Notices of Violation per Regulatory Audit – Cal\EPA** $= \frac{\#}{\#\quad\backslash}$
4	Penalties Received ($)		
5	Penalties Received per Regulatory Audit		**Penalties Received per Regulatory Audit** $= \frac{(\$)}{\#\quad\backslash}$

5.	Regulatory Audits – Cal\EPA	#	Calculated Rate or Comments
1	# of Regulatory Audits – Other Agencies		
2	# of Proposed Notices of Violation		
3	# of Proposed Notices of Violation per Regulatory Audit - Other Agencies		**# of Proposed Notices of Violation per Regulatory Audit - Other Agencies** $= \frac{\#}{\#}$
4	Penalties Received ($)		
5	Penalties Received per Regulatory Audit		**Penalties Received per Regulatory Audit** $= \frac{(\$)}{\#}$

i) Emergency Management and Response

1.	Exercises and Drills	#	Calculated Rate
1	# of Emergency Exercise/Drills		
2	# of GRS Safety Sensitive Personnel Participating in Exercise/Drills		
3	% of GRS Safety Sensitive Personnel Participating in Exercise/Drills		**% of Personnel Participating in Exercise/Drills** $= \frac{\#}{\#}$
4	# of CPUC Participation in Emergency Exercise / Drills		
5	# of County Office of Emergency Preparedness / Homeland Security Participating in Emergency Exercise / Drills		
6	# of Fire Services Participation in Emergency Exercise / Drills		
7	# of Law Enforcement Participation in Emergency Exercise / Drills		
8	# of Other Public Officials Participating in Emergency Exercises/Drills		
9	% of All Public Officials & Regulatory Agencies participating in Emergency Exercises / Drills (based on total number of Emergency Exercise / Drill Participants).		**% of All Public Officials & Regulatory Agencies participating in Emergency Exercises / Drills** $= \frac{\#}{\#}$

2.	Emergency Plans	Yes / No	Calculated Rate
1	Satisfies PHMSA Pipeline Safety Regulatory Requirements		
2	Utilizes the Incident Command System (ICS)		
3	Recognizes the National Incident Management System (NIMS)		
4	Allows for a Unified Command Structure		
5	Defines Roles and Responsibilities for all ICS positions		
6	Includes a Site Specific Safety and Health Plan		
7	Includes an Earthquake Plan.		
8	Includes Plan for Other Major Events that may place personnel, contractors and the public at risk.		
9	Identifies how leaks and other hazardous conditions or emergency events shall be identified and corrected.		
10	Identifies the roles and responsibilities of operators, controllers and their supervisors during an emergency.		
11	Prioritizes the safety of the individual.		
12	Include provisions to notify the appropriate first responders of emergency shutdown and pressure reduction actions.		

2.	Emergency Plans	Yes / No	Calculated Rate
13	Includes specific instruction based on the nature of the emergency (e.g. vehicle accident, natural gas fire, pipeline rupture, etc.)		

3.	Response Team Qualifications	Yes / No	Calculated Rate
1	Are personnel trained to recognize and respond to emergencies?		
2	Are contractor qualifications reviewed annually to confirm their qualifications?		

j) Accident and Incident Investigation

1.	Accidents (by Type)	#	Calculated Rate
1	Total # of Accidents		
2	Total # of Hours Work (GRS Personnel + Contractor)		
3	Accident Rate (accidents per 100 full-time GRS Personnel)		**Accident Rate (accidents per 100 full-time personnel)** $= \frac{\#}{(\quad + \quad)} 200{,}000$
4	# Vehicle Accidents		
5	# Pipeline & Appurtenance Accidents		
6	# Non-Pipeline Accidents		
7	# Stakeholder Property Damage Events		
8	# Stakeholder Injuries		
9	# Stakeholder Illnesses		
10	# Stakeholder Deaths		
11	Accident Rate (by Type; accidents per 100 full-time GRS Personnel)		**Accident Rate (by Type; accidents per 100 full-time Personnel)** $= \frac{\#\quad(\quad)}{(\quad + \quad)} 200{,}000$

2.	Investigations	#	Calculated Rate
1	# of Accidents resulting in an Undetermined Cause		
2	% of Accidents with Undetermined Causes		**% of Accidents with Undetermined Causes** $= \frac{\#}{\#} \quad 100$
3	# of Corrective Actions Implemented		
4	# of Corrective Actions Implemented per Accident		**# of Accidents with Undetermined Causes** $= \frac{\#}{\#} \quad 100$

k) Notification and Reporting

1.	Notification & Reporting	#	Calculated Rate
1	**CPUC/DOT Reportable Incidents**		
2	Regulatory Reports & Filings		
3	PHMSA Annual Report Filed		
4	Annual National Pipeline Mapping System Submission		
5	Annual Operator ID Validation		
6	Semiannual Gas Transmission and Storage Safety Report		
7	**Safety Related Conditions (SRC) for the Year Ending**		Year: _____
8	Reportable SRC		
9	Non-reportable SRC		
10	**Pipeline Incidents**		
11	Death		Note: The total # of incidents may be less than the total of all incidents listed as some incidents may result in more than one of the listed criteria. P D N G L
12	Personal Injury Necessitating in-patient hospitalization		
13	E $50,000.00		
14	U 3,000,000 ft^3		
15	Media Attention (Coverage of the incident)		
16	**CalOSHA Reportable Incidents**		
17	Death		Note: The total # of incidents may be less than the total of all incidents listed as some incidents may result in more than one of the listed criteria.
18	Hospitalization of an individual for more than 24 hours for other than medical observation		
19	Results in the loss of any member of the body (loss of bone)		
20	Results in permanent disfigurement		
21	**Environmental Reportable**		
22	**GRS Internal Reporting**		

1.	Notification & Reporting	#	Calculated Rate
23	Vehicle Accidents		Note: The total # of incidents may be less than the total of all incidents listed as some incidents may result in more than one of the listed criteria.
24	Contractor Incidents		
25	Non-DOT fires / explosions		
26	Third Party Damage to Pipeline		
27	Third Party Damage to non-pipeline assets		
28	Stakeholder Property Damage		
29	**National Terrorism Advisory System (NTAS) Reports**		
30	Physical Security Breach		Note: The total # of incidents may be less than the total of all incidents listed as some incidents may result in more than one of the listed criteria.

Appendix F. Acronyms

Acronym	Definition
ANSI	American Nation Standards Institute
ASME	American Society of Mechanical Engineers
AOC	Abnormal Operating Condition
Cal/OSHA	California Division of Occupational Safety and Health
Cal/EPA	California Environmental Protection Agency
CPUC	California Public Utilities Commission
Class 1	Class 1 Area
Class 2	Class 2 Area
Class 3	Class 3 Area
Class 4	Class 4 Area
CSE	Confined Space Entry
DHS	Department of Homeland Security
DOT	Department of Transportation
EOC	Emergency Operating Condition
EPCRA	Emergency Planning and Community Right to Know
GPS	Global Positioning System
GRS	Gill Ranch Storage
HCA	High Consequence Area
HSE	Health Safety and Environmental
ICS	Incident Command System
ILI	In-line Inspection
JSA	Job Safety Analysis
KPI	Key Performance Indicators
LOTO	Lockout - Tagout
MAOP	Maximum Allowable Operating Pressure
MOC	Management of Change
NDT	Nondestructive Testing
NIMS	National Incident Management System
NOV	Notice of Violation
NPMS	National Pipeline Mapping System

Acronym	Definition
NTAS	National Terrorism Advisory System
NTSB	National Transportation Safety Board
OSHA	Occupational Safety and Health
P_2P	Point to Point
PPE	Personal Protective Equipment
PHMSA	Pipeline and Hazardous Material Safety Administration
PIR	Potential Impact Radius
PL	Pipeline
PPE	Personal Protective Equipment
PSMS	Pipeline Safety Management System
PSMT	Pipeline Safety Management Team
OQ	Operator Qualification
OSHA	Occupational Safety & Health Administration
S&H	Safety and Health
SARA	Superfund Amendments and Reauthorization Act
SCADA	Supervisor Control and Data Acquisition
SMYS	Specified Minimum Yield Strength
SRC	Safety Related Conditions
TIMP	Transportation Integrity Management Program

Appendix G. Definitions

Abnormal Operating Condition [49 CFR 192.803] A condition identified by the company that may:

1. Indicate a malfunction of a component or deviation from normal operations
2. Result in a condition exceeding design limits or hazard(s) to persons, property, or the environment.

Accident - An accident is an unplanned occurrence that results in injury, illness or property damage.

Technically speaking: As used in natural gas pipeline safety regulations, accidents are referred to as incidents. Events or failures related to gas pipelines are considered incidents and are defined in 49CFR 191.3 and may be reportable to the National Response Center.

After-Meter Services – those services that include, but are not limited to, leak investigation, inspecting customer piping and appliances, carbon monoxide investigation, pilot relighting, and high bill investigation.

Alarm – An audible or visible means of indicating that equipment or processes are outside operator-defined, safety-related parameters.

All Other Illnesses – any illness that has not been defined or identified in this document.

Alternate Maximum Allowable Operating Pressure – under certain conditions an operator is allowed to use different factors in calculating the maximum allowable operating pressure; hence "Alternative Maximum Allowable Operating Pressure".

Anomalies - a possible deviation from otherwise sound material in a pipe or weld.

Many pipeline anomalies result during the pipe manufacturing process and don't affect the performance of the pipeline or its ability to function in a safe manner. Other pipeline anomalies are caused by corrosion or damage to the pipe from outside forces like digging equipment. Some of these can be detrimental to the integrity of the pipeline if not repaired.

Basic Gas Service - the transmission, storage for reliability of service, and distribution of natural gas, purchasing natural gas on behalf of a customer, revenue cycle services, and after-meter services.

California Division of Occupational Safety and Health (Cal/OSHA) - The State of California, under an agreement with the Occupational Safety & Health Administration (OSHA), operates an occupational safety and health program in accordance with Section 18 of the Occupational Safety and Health Act of 1970. The Department of Industrial Relations administers the California Occupational Safety and Health Program, commonly referred to as CalOSHA.

Cal/OSHA Reportable Incident – Death, Hospitalization of an individual for more than 24 hours for other than medical observation, Results in the loss of any member of the body (loss of bone), Results in permanent disfigurement.

California Environmental Protection Agency (Cal/EPA) - The California Environmental Protection Agency is charged with developing, implementing and enforcing the states environmental protection laws that ensure clean air, clean water, clean soil, safe pesticides and waste recycling and reduction. Our departments are at the forefront of environmental science, using cutting-edge research to shape the state's environmental laws

California Public Utilities Commission (CPUC) - The CPUC regulates privately owned electric, natural gas, telecommunications, water, railroad, rail transit, and passenger transportation companies. The CPUC serves the public interest by protecting consumers and ensuring the provision of safe, reliable utility service and infrastructure at reasonable rates, with a commitment to environmental enhancement and a healthy California economy. They regulate utility services, stimulate innovation, and promote competitive markets, where possible.

Cathodic Protection – is a method of corrosion prevention in which the pipeline is allowed or made to act as the cathode in an electrochemical corrosion cell. A sacrificial anode having a lower electrolytic potential than the pipe is provided to complete the cell. The same electrolytic action that causes the anode to corrode protects the cathode (the pipeline or other component) from corroding.

Change Analysis – The review of administrative, procedural, operational or mechanical changes to a process, materials or equipment for the purpose of assuring the change does not introduce or pose an unacceptable level of risk to the workforce, environment, public or pipeline system.

Class 1 Area (Class 1) – an offshore area or 10 or fewer buildings intended for human occupancy in a sliding one (1) mile area.

Class 2 Area (Class 2) – a location with more than 10 but fewer than 46 buildings intended for human occupancy in a sliding one (1) mile area.

Class 3 Area (Class 3) – a location containing 46 or more buildings intended for human occupancy in a sliding one (1) mile area or lies with 100 yards of any HCA.

Class 4 Area (Class 4) – buildings that contain four or more stories.

Confined Space Entry – (OSHA) A space that is large enough for an employee to enter fully and perform assigned work, is not designed for continuous occupancy by the employee; and has a limited or restricted means of entry or exit.

Control Room Management - The Control Room Management Program defines the safety requirements for controllers, control rooms, and supervisory control and data acquisition (SCADA) systems used to remotely monitor and control pipeline operations. The program includes human factors engineering and management solutions for the purpose of enhancing the performance reliability of operator personnel that control pipeline operations. This program is intended to reduce the number and consequences of shortfalls in control room management practices and operator errors when remotely monitoring and controlling pipelines and responding to abnormal and emergency conditions.

Corrective Action - Action taken to eliminate the cause of a detected nonconformity or other undesirable situation (*Note: There can be more than one cause for a nonconformity. Corrective action is taken to prevent recurrence whereas preventive action is taken to prevent occurrence.).*

Covered Pipeline Segment – a segment of pipe on a pipeline system that is required to comply with one or more regulatory compliance requirements.

Covered Task (Pipeline Safety) – (49 CFR 192.801) covered task is an activity, identified by the operator, that:

- Is performed on a pipeline facility;
- Is an operations or maintenance task;
- Is performed as a requirement of this part; and
- Affects the operation or integrity of the pipeline

DART Rates – Days Away, Restrictions and Transfers is a mathematical calculation utilized to describe the number of lost days experienced as compared to the number of incidents experienced.

Department of Homeland Security (DHS) - is a cabinet department of the United States federal government, created in response to the September 11 attacks, and with the primary responsibilities of protecting the United States of America and U.S. Territories (including Protectorates) from and responding to terrorist attacks, man-made accidents, and natural disasters.

Department of Transportation (DOT) (PHMSA) – The agency that develops and enforces regulations for the safe, reliable, and environmentally sound operation of the nation's pipeline transportation system and shipments of hazardous materials by land, sea, and air. PHMSA comprises two safety offices, the Office of Pipeline Safety and the Office of Hazardous Materials Safety.

Direct Assessment – a method of assessing the integrity of the pipeline with regards to the corrosion threat. PHMSA recognizes four processes: External Corrosion Direct Assessment (ECDA); Dry Gas Internal Corrosion Direct Assessment (DG-ICDA); Stress Corrosion Cracking Direct Assessment (SCCDA); and Confirmatory Direct Assessment (CDA).

Direct Observation – (1) the physical observation of a work being performed, or (2) A method of inspecting and measuring the pipelines surface conditions at excavations as part of external corrosion direct assessment (ECDA).

Emergency - a situation that poses an immediate risk to health, life, property or environment.

Emergency Condition – [ICS] – An unforeseen combination of circumstances calling for immediate action to prevent or minimize harm to people, damage to the environment or loss to process.

Emergency Drills – the simulation of an emergency event for the purpose of evaluating and critiquing response capabilities of personnel executing emergency response procedures and practices.

Emergency Event- any emergency that can result in deaths or significant injuries to personnel.

Emergency Operating Condition (EOC) – any event that results in the immediate risk to health, life, property or environment such as the detection of gas inside or near a building, fire located near or directly involving a pipeline facility, explosion occurring near or directly involving a pipeline facility, or a natural disaster.

Emergency Planning and Community Right to Know Act - A free-standing law, the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) was commonly known as SARA Title III. Its purpose is to encourage and support emergency planning efforts at the state and local levels and to provide the public and local governments with information concerning potential chemical hazards present in their communities.

Emergency Response Plan – is a plan that has been prepared to provide guidance and outline responsibilities related to emergency management and response to an emergency event involving the facility, pipeline, well, workforce or general public.

Engineering Standards and Codes - technical guidelines (voluntary standards or standards incorporated by reference) that have been developed by industry experts, with knowledge and expertise in a particular field, for the purpose of promoting safety, reliability, productivity and efficiency.

Environmental Damage- damage to the environment. Environmental damage usually requires some level of reporting to federal and / or state jurisdictional agencies.

Event –as an incident, near miss or accident.

Excavations – the removal of dirt from a given site.

Excavators – companies and/or personnel that removes earth from a given site.

Exposed Pipe – pipe that does not have cover resulting in some portion of the pipe being visible or pipe that has been exposed during an excavation.

False Alarms - [PHMSA CRM FAQ E.02] Any alarm that is presented to the controller that did not accurately reflect the actual operational parameter or condition, or an alarm that can mislead a controller to believe a condition exists, but that does not exist.

First Aid – [29 CFR 1904.7(b)(5)(ii)] is defined as performing any combination of the following actions.

Using a non prescription medication at nonprescription strength

Cleaning, flushing, or soaking wounds on the surface of the skin

Using hot or cold therapy

Using any temporary immobilization devices while transporting a victim

Draining fluid from a blister

Removing foreign bodies from the eye using only irrigation or a cotton swab

Using finger guards;

Use of a massage (though physical and chiropractic therapy are defined as medical treatment)

Drinking fluids for relief of heat stress.

First Responder – Emergency service personnel who are expected to respond to an emergency. Note there are many definitions of first responders; check specific regulatory language based on the nature of the emergency.

Forced Values – the manual setting (overriding) of a value in a SCADA system.

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.

Gill Ranch Storage (GRS) Operations Representative – Is a person that the GRS facility operations personnel shall elect to serve a one-year term on the PSMT.

GRS Executive Management Team – The senior level executives of the GRS Project.

Global Positioning System (GPS) – This is a space-based satellite navigation system that provides location and time information in all weather, anywhere on or near the Earth, where there is an unobstructed line of sight to four or more GPS satellites. It is maintained by the United States government and is freely accessible to anyone with a GPS receiver. The GPS program provides critical capabilities to military, civil and commercial users around the world.

Golden Rules - A set of rules that focus on the establishment of minimum safety standards that can easily be communicated and reinforced.

Hazardous Condition - a situation that poses a level of threat to life, health, property, or environment.

Hazard Identification – the process used to identify all the possible situations in the workplace where people may be exposed to injury, illness or disease.

Health Safety and Environment (HSE) – departments and/or areas of responsibility within and organization that focus on the safety, health and welfare of the workforce, stakeholders and/or public as well as protection of the environment.

Hearing Loss – any change in hearing threshold relative to the baseline audiogram of an average of 10dB or more in either ear at 2000, 3000, and 4000 hertz, and the employee's total hearing level is 25 decibels or more above the audiometric zero in the same ear(s).

High Consequence Area (HCA) - [49 CFR 192.903] is defined as an area established by one of the methods described in as follows:

(a) An area defined as—

[Method 1]

A Class 3 location under §192.5; or

- A Class 4 location under §192.5; or
- Any area in a Class 1 or Class 2 location where the potential impact radius is greater than 660 feet (200 meters), and the area within a potential impact circle contains 20 or more buildings intended for human occupancy; or
- Any area in a Class 1 or Class 2 location where the potential impact circle contains an identified site.

[Method 2]

(b) The area within a potential impact circle containing—

20 or more buildings intended for human occupancy, unless the exception in paragraph applies; or

- An identified site.

(c) Where a potential impact circle is calculated under either method (1) or (2) to establish a high consequence area, the length of the high consequence area extends axially along the length of the pipeline from the outermost edge of the first potential impact circle that contains either an identified site or 20 or more buildings intended for human occupancy to the outermost edge of the last contiguous potential impact circle that contains either an identified site or 20 or more buildings intended for human occupancy. (See Figure **Error! Reference source not found.** in Appendix E to 49 CFR Part 192)

(d) If in identifying a high consequence area under paragraph (1)(iii) of this definition or paragraph (2)(i) of this definition, the radius of the potential impact circle is greater than 660 feet (200 meters), the operator may identify a high consequence area based on a prorated number of buildings intended for human occupancy within a distance 660 feet (200 meters) from the centerline of the pipeline until December17, 2006. If an operator chooses this approach, the operator must prorate the number of buildings intended for human occupancy based on the ratio of an area with a radius of 660 feet (200 meters) to the area of the potential impact circle (i.e., the prorated number of buildings intended for human occupancy is equal to [20 × (660 feet [or 200 meters] potential impact radius in feet [or meters]) 2]).

Hot Work – the performance of work that has the potential to cause a fire and/or explosion. A hot work permit is used to evaluate and confirm that the work site and procedures provide adequate protection to perform the work safety.

Immediate Repair Condition – An immediate repair condition is a defect or anomaly in the condition of the pipe for which pipeline safety regulations require immediate action to repair the anomaly. (Reference 49CFR 195.452)

Incident - [49 CFR 191.3] is defined as any of the following events

- An event that involves a release of gas from a pipeline, or of liquefied natural gas, liquefied petroleum gas, refrigerant gas, or gas from an LNG facility, and that results in one or more of the following consequences:
  - A death, or personal injury necessitation in-patient hospitalization or;
  - Estimated property damage of $50,000 or more, including loss to the operator and others, or both, but excluding cost of gas lost;
  - Unintentional estimated gas loss of three million cubic feet or more;
- An event that results in an emergency shutdown of and LNG facility.
- An event that is significant in judgment of the operator, even though it did not meet the criteria of the above definitions.

Incidents requiring notification – [General Order No. 112-E] is defined as:

- Incidents which require DOT notification.
- An event that involves a release of gas from a pipeline or of liquefied natural gas (LNG) or gas from an LNG facility and
  - A death, or personal injury necessitating in-patient hospitalization; or
  - Estimated property damage, including cost of gas lost, of the operator or others, or both, of $50,000 or more.
- An event that results in an emergency shutdown of an LNG facility.
- Incidents which have either attracted public attention or have been given significant news media coverage, that are suspected to involve natural gas, which occur in the vicinity of the operator's facilities; regardless of whether or not the operator's facilities are involved.

Incident (ICS) - For the purpose of this Emergency Response Plan, a minor emergency that can be handled solely by personnel at the facility where the incident occurs to prevent the incident from escalating into an emergency.

Incident (OSHA) - An incident is an unplanned, undesired event that adversely affects completion of a task.

Incident Command System (ICS)(DHS) – The Incident Command System (ICS) is a standardized, on-scene, all-hazards incident management approach that:

- Allows for the integration of facilities, equipment, personnel, procedures, and communications operating within a common organizational structure.
- Enables a coordinated response among various jurisdictions and functional agencies, both public and private.
- Establishes common processes for planning and managing resources.

Inhibited Alarms – alarms that have been suspended or prevented from performing its assigned function.

Injury or illness - [29 CFR 1960.2(l)] is defined as an abnormal condition or disorder.

Injuries include cases such as, but not limited to, the following.

- A cut
- Fracture
- Sprain
- Amputation

Illness includes both acute and chronic illnesses, such as, but not limited to, the following.

- A skin disease
- Respiratory disorder
- Poisoning.

In-line Inspection Tool (ILI) – an inspection device designed to run inside of a pipeline. Often these inspection devices operate while the pipeline remains in service. These devices often referred to as "pigs," measure and record the internal geometry, external or internal corrosion as well as provide pertinent information about pipe characteristics such as wall thickness and other pipe defects. Magnetic flux leakage, ultrasonic, calipers, and geometry are examples of smart tools.

Inspection Due Date – is the date for which the next inspection is to be conducted but is not considered to be the Do Not Exceed Date. These dates can are often established as annual, quarterly, bi-monthly, or monthly.

Integrity Management Program - A documented set of policies, processes, and procedures that are designed to assure minimum mechanical integrity for regulated pipeline systems.

Job Safety Analysis (JSA) – (OSHA) A job hazard analysis is a technique that focuses on job tasks as a way to identify hazards before they occur. It focuses on the relationship between the worker, the task, the tools, and the work environment. Ideally, after you identify uncontrolled hazards, you will take steps to eliminate or reduce them to an acceptable risk level.

Key Performance Indicators (KPI) – a structured set of parameters that have been established for the purpose of measuring and evaluating the safety and reliability of the pipeline system.

Lagging Indicators - are a retrospective set of indicators that are based on incidents that meet a defined threshold of severity. These indicators have been selected to describe events that have already occurred and may indicate potential recurring problems and/or hazards. It is important to recognize that "lagging" indicators will be aligned with the "Threats" of ASME B31.8S-2004 for the purpose of modeling the loss history of a pipeline system as compared to the DOT incident history. This data alignment will help assure that the pipeline system specific loss history is better aligned with an industry standard for future risk identification and management.

Leading Indicators - are a forward looking set of indicators that are used to evaluate the performance of key work processes, operating practices and/or safety measures. These indicators have been selected based on their ability to provide an indication of potential problems or to identify the deterioration of safety systems and to implement safeguards, improvements and/or corrective actions prior to an accident or incident.

Leakage Survey – [O&M Guidance (49 CFR 192 Subpart L&M)] A systematic inspection using gas detection instrument(s) for the purpose of finding leaks on a gas piping system.

Lockout Tagout – (OSHA)

- **Lockout**: The placement of a lockout device on an energy-isolating device, in accordance with an established procedure, ensuring that the energy-isolating device and the equipment being controlled cannot be operated until the lockout device is removed.
- **Tagout:** The placement of a tagout device on an energy-isolating device, in accordance with an established procedure, to indicate that the energy-isolating device and the equipment being controlled may not be operated until the tagout device is removed.

Lost Work – The number of days (consecutive or not) after, but not including, the day of injury or illness during which the employee would have worked but could not do so; that is, could not perform all or any part of his normal assignment during all or any part of the workday or shift, because of the occupational injury or illness.

Management of Change (MOC) – This is used to track all changes to the pipeline system to ensure that the appropriate replacement has been used.

Manual Values – any valve that is operated by hand (manually).

Maximum Allowable Operating Pressure (MAOP) - [49 CFR 192.3] is defined as the maximum pressure at which a pipeline or segment of a pipeline may be operated under this part.

Metering Services - includes, but is not limited to, gas meter installation, meter maintenance, meter testing, collecting and processing consumption data, and all related services associated with the meter.

Minor Release – Any small quantity, non-reportable release to the environment.

Monitored Condition – Conditions that do not have to be scheduled for remediation, but must record and monitored during subsequent risk assessments and integrity assessments for any change. Monitored conditions may be upgraded to a higher condition; thereby requiring remediation.

National Pipeline Mapping System (NPMS) - The National Pipeline Mapping System (NPMS) is a geographic information system (GIS) created by the U.S. Department of Transportation, Pipeline and Hazardous Materials Safety Administration (PHMSA), Office of Pipeline Safety (OPS) in cooperation with other federal and state governmental agencies and the pipeline industry. The NPMS consists of geospatial data, attribute data, public contact information, and metadata pertaining to the interstate and intrastate hazardous liquid trunklines and hazardous liquid low-stress lines as well as gas transmission pipelines, liquefied natural gas (LNG) plants, and hazardous liquid breakout tanks jurisdictional to PHMSA.

National Terrorism Advisory System (NTAS) –The system used by the US Department of Homeland Security to effectively communicate information about terrorist threats by providing timely, detailed information to the public, government agencies, first responders, airports and other transportation hubs, and the private sector. The NTAS replaced the color-coded Homeland Security Advisory System (HSAS).

National Transportation Safety Board (NTSB) - The National Transportation Safety Board (NTSB) is an independent federal agency charged with determining the probable cause of transportation accidents, promoting transportation safety, and assisting victims of transportation accidents and their families.

Near Miss – (OSHA) Near misses describe incidents where no property was damaged and no personal injury sustained, but where, given a slight shift in time or position, damage and/or injury easily could have occurred.

Near Miss Indicators - are a "Lagging Indicator" subset that is based on less severe incidents or unsafe acts and/or conditions which defeated one or more layers of safety protection. These indicators are generally considered to be good indicators of conditions which could ultimately lead to an abnormal operating condition, a more severe incident and/or an emergency condition.

Nondestructive Testing (NDT) - those test methods used to examine an object, material or system without impairing its future usefulness. [O&M Guidance (49 CFR 192 Subpart L&M)] Testing in which the part being tested is not rendered unusable. In pipeline related NDT testing, the pipe, its welds, or even steel components and tanks may need to be evaluated to verify their integrity. Pipeline NDT typically consists of:

- **Radiography (X-rays):** identifies lamination and weld discontinuities.
- **Ultrasonic:** locates lamination in the walls of pipe; determines wall thicknesses.
- **Magnetic particle inspection:** tests for surface cracks in welds and component bodies.
- **Dye penetrant:** locates surface cracks in welds or component bodies.
- **Ammonium persulfate:** identifies hard spots in welds due to arc burns.

Occupational Safety and Health (OSHA) - With the Occupational Safety and Health Act of 1970, Congress created the Occupational Safety and Health Administration (OSHA) to assure safe and healthful working conditions for working men and women by setting and enforcing standards and by providing training, outreach, education and assistance.

One Call - [NPMS] is a system that allows excavators (individuals, professional contractors, and governmental organizations) to make one telephone call to provide notification of their intent to dig (excavate).

One Year Repair Condition [49 CFR 192.993.2] –an operator must remediate any smooth dent located between the 8 o'clock and 4 o'clock positions with a depth greater than 6% of the pipeline diameter and/or a dent with a depth greater than 2% of the pipelines diameter that affects pipe curvature at girth weld or at a longitudinal seam weld.

Operation and Maintenance Procedures – Procedures for the operations and maintenance of regulated pipeline systems. These procurers are developed in accordance with the federal and state pipeline safety regulatory requirements

Operator ID – a federal identification number that is issued to a pipeline operator for the pipeline or pipeline system(s) for which the operator has primary responsibility.

Performance Monitoring – the process of observing and evaluating a worker perform their job duties.

Personal Protective Equipment - Specialized clothing or equipment worn by personnel for protection against health and safety hazards. Personal protective equipment is designed to protect many parts of the body, i.e., eyes, head, face, hands, feet, and ears.

Permit Violations - Any exceedance of a specified permit limit.

PHMSA Form 1 - Standard Gas Transportation Inspection audit

PHMSA Form 5 - Gas Pipeline and Compressor Station Construction audit

PHMSA Form 11 - Pipeline Failure Investigation Reports

PHMSA Form 12 - Gas Storage Field Review audit

PHMSA Form 13 - PHMSA Pipeline Drug and Alcohol Questions

PHMSA Form 14 - Operator Qualification Inspection Form

PHMSA Form 15 - Operator Qualification Field Inspection Protocol Form

PHMSA Form 16 - Gas IMP Field Verification Inspection

PHMSA Form 17 - Supplemental SCC Questionnaire Gas Transmission or Liquid Pipeline

PHMSA Form 21 - Public Awareness Program Effectiveness Inspection Form

Physical Protections - a variety of measures that are used to protect the workforce, public, environment or physical assets from an identified hazard.

Pipeline (PL) - [49 CFR 192.3] [O&M Guidance (49 CFR 192 Subpart L&M)] is defined as all parts of those physical facilities through which gas moves in transportation, including pipe, valves, and other appurtenance attached to pipe, compressor units, metering stations, regulator stations, delivery stations, holders, and fabricated assemblies.

Pipeline Design Basis – the engineering specifications for the design of a pipeline system.

Pipeline Failure – is a sudden release of product from a pipeline. Typically these failures are a result of the integrity of the pipeline being lowered through environmental factors, third party damage, weak welding seems (longitudinally or perpendicularly), or pipeline negligence.

Pipeline Leak – a small unintentional release of product from a pipeline that can result from environmental factors, third party damage, failed welding seems (longitudinally or perpendicularly), or pipeline negligence.

Pipeline Patrol – observation of the pipeline right-of-way for indications of leaks, construction activity, and other factors affecting safety and operation. Methods of patrolling include walking, driving, flying or other appropriate means to traverse the right-of-way.

Pipeline Records –all records associated with the design, construction, operations and / or maintenance of a pipeline system.

Pipeline Safety Management System (PSMS) – a pipeline safety plan designed to assure the safe and reliable operations of a pipeline system.

Pipeline Safety Management System (PSMS) Risk Matrix - The PSMS risk metrics summary consolidates all performance measurements from each of the nine (9) PSMS functional groups for the purpose of establishing an overall understanding of the effectiveness of the company's pipeline safety initiatives. This allows for a comprehensive review of our pipeline safety efforts and its effectiveness. This higher level summary of the KPIs allows us to qualify and quantify those performance measurements that best summarize and represent the results of the KPIs of each of the PSMS functional groups.

Pipeline Safety Management Team (PSMT) - personnel charged with developing, implementing and maintaining an effective, straight forward pipeline safety management system that supports a qualified workforce in the identification, evaluation and mitigation of pipeline operating hazards ("threats"). The PSMT is responsible for ensuring that workload and technical capability needs of each facility has been evaluated and that the facility is properly staffed and trained to safety operate the pipeline system in accordance with the provisions of the Pipeline Safety Management System Plan.

Poisoning – includes disorders evidenced by abnormal concentrations of toxic substances in blood, other tissues, other bodily fluids, or the breath that are caused by the ingestion or absorption of toxic substances into the body.

Potential Impact Radius (PIR) - [49 CFR 192.903] is defined as the radius of a circle within which the potential failure of a pipeline could have significant impact on people or property. PIR is determined by the formula r = 0.69* (square root of ($p*d^2$)), where `r' is the radius of a circular area in feet surrounding the point of failure, `p' is the maximum allowable operating pressure (MAOP) in the pipeline segment in pounds per square inch and `d' is the nominal diameter of the pipeline in inches.

> Note: 0.69 is the factor for natural gas. This number will vary for other gases depending upon their heat of combustion. An operator transporting gas other than natural gas must use section 3.2 of ASME/ANSI B31.8S–2001 (Supplement to ASME B31.8; ibr, see §192.7) to calculate the impact radius formula.

Protective Measures - Any action taken by the operator to protect from an identified hazard or potential hazard.

Public Awareness Program – A federally required program designed to provide the affected public with information about how to recognize, respond to, and report pipeline emergencies.

(DOT) Federal pipeline safety regulations 49 CFR 192.616 require pipeline operators to develop and implement public awareness programs that follow the guidance provided by the American Petroleum Institute (API) Recommended Practice (RP) 1162, "Public Awareness Programs for Pipeline Operators" (incorporated by reference in federal regulations).

Under these regulations, pipeline operators must communicate the importance of using the one-call notification system prior to excavation is to be emphasized for all stakeholders. Emergency officials and local public officials must be provided information about the location of transmission pipelines to enhance emergency response and community growth planning. Affected municipalities, school districts, businesses, and residents must be advised of pipeline

locations. Of particular significance is the requirement that operators must periodically review their programs for effectiveness and enhance the programs as necessary.

Public Complaints – a complaint from any stakeholder or member of the general public, government agencies or representatives.

Qualified Individual (OQ) - means that an individual has been evaluated in accordance with the Operator Qualification requirements and can perform the assigned covered tasks; and recognize and react to abnormal operating conditions.

Recordable Incident – an occupational injury or illness that requires medical treatment more than simple first aid and must be reported.

Regulatory Violations - Any regulatory violation that has been issued regardless of penalty. Violations that were issued and later rescinded are not counted.

Reportable Incident – and event that results in a legal or regulatory requirement to report.

Reportable Release - A release that is regulated by the DOT/PHMSA, Cal/EPA, etc. These releases may or may not be required to be reported but are always required to be recorded.

Respiratory Condition – illnesses associated with breathing hazardous biological agents, chemicals, dust, gases, vapors, or fumes at work.

Restricted Work Activity – Result of a work-related injury or illness, an employer or health care professional keeps, or recommends keeping, an employee from doing the routine functions of his or her job or from working the full workday that the employee would have been schedule to work before the injury or illness occurred.

Revenue Cycle Services - means metering services, billing the customer, collection, and related customer services.

Safety and Health Policy – a workplace guideline meant to protect the well-being of the workforce.

Safety Points - Thresholds, which if achieved or exceeded, will present an indication to the controller that equipment or process are outside of the defined normal parameters

Safety Related Conditions (SRC) – are conditions which exist within 220 yards of any building intended for human occupancy or outdoor place of assembly; or within any distance of a right of way of an active railroad, paved road, street, or highway where:

- A pipeline (other than an LNG facility) operates at a hoop stress of 20 percent or more of its specified minimum yield strength, has general corrosion that has reduced the wall thickness to less than that required for the maximum allowable operating pressure, and has localized corrosion pitting to a degree where leakage might result;
- Unintended movement or abnormal loading by environmental causes, such as an earthquake, landslide, or flood, that impairs the serviceability of a pipeline or the structural integrity or reliability of an LNG facility that contains, controls, or processes gas or LNG;
- Any crack or other material defect that impairs the structural integrity or reliability of an LNG facility that contains, controls, or processes gas or LNG;

- Any material defect or physical damage that impairs the serviceability of a pipeline that operates at a hoop stress of 20 percent or more of its specified minimum yield strength;
- Any malfunction or operating error that causes the pressure of a pipeline or LNG facility that contains or processes gas or LNG to rise above its maximum allowable operating pressure (or working pressure for LNG facilities) plus the build-up allowed for operation of pressure limiting or control devices;
- A leak in a pipeline or LNG facility that contains or processes gas or LNG that constitutes an emergency;
- Inner tank leakage, ineffective insulation, or frost heave that impairs the structural integrity of a LNG storage tank;
- Any safety-related condition that could lead to an imminent hazard and causes (either directly or indirectly by remedial action of the operator), for purposes other than abandonment; a 20 percent or more reduction in operating pressure or shutdown of operation of a pipeline or a LNG facility that contains or processes gas or LNG.

Shift – a work shift (typically 8 or 12 hours).

Specified Minimum Yield Strength (SMYS) - [49 CFR 192.3] is defined as specified minimum yield strength is: (1) for steel pipe manufactured in accordance with a listed specification, the yield strength specified as a minimum in that specification; or (2) for steel pipe manufactured in accordance with an unknown or unlisted specification, the yield strength determined in accordance with 49 CFR 192.107(b).

Stakeholder – This can be defined as the following person who will have an interest in the safe operations of the pipeline system:

- General Public.
- Emergency Officials.
- Local Officials.
- Excavators.
- Property Developers / Owners.
- Pipeline Safety Advocates.
- State Regulators.
- Federal Agencies.
- Industry.

Stewardship - is an ethic that embodies responsible planning and management of resources.

Superfund Amendments and Reauthorization Act (SARA) - Superfund is the name given to the environmental program established to address abandoned hazardous waste sites. It is also the name of the fund established by the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended.

Supervisor Control and Data Acquisition (SCADA) – A SCADA is a pipeline control system designed to gather information such as pipeline pressures and flow rates from remote locations and regularly transmit this information to a central control facility where the data can be monitored and analyzed. Through this same system, the central control facility can often issue commands to the remote sites for actions such as opening and closing valves and starting and stopping pumps.

Survey - A systematic review of processes, programs and/or procedures to determine the level of compliance with predetermined company and regulatory compliance performance expectations and/or standards.

Third Party Damage – An Individual or group not part of the workforce that causes damage or destruction, directly or indirectly, to the pipeline right-of-way or pipeline facility.

Total Death Case Rate – mathematical calculation used to determine the number of personnel per 100 full-time personnel that have resulted in death over a given time frame.

Total Illness Case Rate - mathematical calculation used to determine the number of illness cases per 100 full-time personnel over a given time frame.

Total Injury Case Rate - mathematical calculation used to determine the number of injury cases per 100 full-time personnel over a given time frame.

Unified Command – the authority structure where the role of the incident commander is shared by two or more individuals.

Unplanned Release - A release that was not scheduled and was not part of a planned operations or maintenance activity.

Unusually Sensitive Area - (USA) [USA DWDM] means those definable geographic areas that contain drinking water or ecological resources that by their character are irreplaceable and may be subject to irreparable and irreversible injury or irretrievable loss, if they are exposed to the effects of an accidental hazardous liquids release. The USA definition focuses upon those environmental resources that are potentially at risk of such damage and are essential to the protection of human health and the continued viability of ecological resources. Thus, application of the USA definition, as it is established in this document, specifically identifies drinking water resources that are critical to the uninterrupted delivery of consumable water to public water systems (PWS) and areas critical to the survival and viability of threatened, endangered, and imperiled biological species.