

UTC / PSE
Gas Operations Meeting
 September 17, 2007

Areas of concern:

- Number of and company response to unsafe conditions such as leaks and line breaks.
- Adequacy of company surveillance of its gas system.
- Adequacy of company investments in maintenance of existing plant.
- Willingness to make needed system improvements that benefit safety or existing services.

Questions:

1. Safety indicators

A. Do you measure unsafe conditions, near hits, minor incidents on your system? If so, what data do you collect and what standards do you measure against? Examples of these safety indicators include:

- **Unsafe conditions:** low CP, minor gas leaks;
- **Near hits:** excavation damage, gas leaks at building foundations;
- **Minor incidents:** gas releases, small scale evacuations, incorrect operations;
- **Major incidents:** large scale evacuations, reportable (PHMSA/UTC) incidents, injuries and property damage

Discussion –PSE’s comprehensive Damage Prevention activities focus on the major cause of leaks, third party hits. These activities focus on communication, remediation, and training. They include messaging to contractors regarding gas safety, call before you dig, and proper excavation techniques for digging around gas facilities.

Educational/Training classes are available for other first response organizations, the public and excavators. When appropriate, training has been mandated for excavators who have a track record of consistently poor performance. PSE reports activities associated with our Damage Prevention efforts to the Commission on an annual basis.

PSE also documents its response to each and every emergency or leak. Unusual events are discussed at base safety meetings and debrief meetings are held as appropriate.

PSE does not keep separate records for near hits and data analysis for identification of trends has not been conducted in a formal manner.

B. What level of internal measures causes the company to investigate to determine whether it needs to change practices, change practices or replace existing facilities?

Discussion - In emergency response situations judgment is used by PSE employees in the field. They are on the frontline and have the most exposure to issues that surface. The first step is tailgate meetings. These are held whenever more than one individual

responds to an emergency. Collectively, this group is referred to as the Response Team and it has the authority and responsibility to assess the situation and determine the most appropriate corrective actions regarding that specific field situation.

Secondly, engineering support is made available to field personnel through the Response Planning Engineer (RPE). An RPE is available 24-7 to meet a variety of field support needs and to determine what additional engineering resources are necessary to assist with a particular situation.

For instance, a determination of Repairs versus Replace decisions is made in the field for services or small sections of main. When appropriate, a temporary repair may be made in the field and a notification created to have the specific facility replaced. The Response Team will make this decision with input from the RPE. If the situation proves more complicated and in need of additional engineering resources, the RPE will make this decision and mobilize additional persons necessary to resolve the issue.

For broader, non-emergency response situations, change management decisions are made by the Maintenance Planning Group. They determine and directly influence the safety-related Repair versus Replace decision. This group receives a significant amount of field information which they use to develop broader solutions and prioritize the work that will be performed in the field. Safety is always a key criterion by which all decisions are measured. Finally, the group funds many projects including more field-initiated replacement of district regulators, large meter sets, and mains.

The fourth major influence on change management is the collection of PSE Standards and Field Procedures Manuals. The Manuals document PSE's effort to compile performance standards that adhere to applicable regulations and laws, accepted industry practices, and PSE-specific standards. The Manuals are "living" documents in the sense that they undergo ongoing informal review and an annual formal update to assess, compile, and record appropriate improvements, additions, and changes. Because of the importance PSE places on these materials, Engineering, and Gas Operations have the opportunity to provide their input on required and suggested changes.

2. Knowledge of and continuous surveillance of gas system

A. To what degree do PSE's maps and system records accurately reflect its gas infrastructure? What steps are you taking to improve the accuracy of PSE's gas system records?

B. What steps are you taking to improve the accuracy of PSE's gas system records?

Discussion for A. and B. – *PSE's Maps and Records are a compilation of work performed over many decades and continue to evolve in content and sophistication to meet the changing requirements of the company. PSE believes its maps and system records reasonably meet the needs of the field organization. However, PSE acknowledges that they are not perfect and that there are instances where information is incomplete and needs to be revised and updated. Additionally, because the information has been compiled over many decades, past practices did not require the recording of*

information in the same level of detail that is dictated by our current practices. PSE is working to improve that information in a systematic manner through field input and initiatives to address specific records areas. PSE's Maps and Records have served PSE and its customers well in that regard.

C. Specifically what measures does PSE take to comply with CFR 192.613?

Discussion – *The measures PSE takes to comply with CRF 192.613 are set forth in PSE operating Standards 2725.2700 and 2725.3100. Operating Standard 2725.2700 establishes the requirements for continuing surveillance of PSE's pipelines. This standard applies to all Company and Contract Personnel who perform construction, operation or maintenance activities; observe pipeline facilities; and report unsafe, unsatisfactory or nonstandard conditions. The conditions are reported on a form commonly known as the "Blue Card" (Form 3704). Blue cards are collected by the Maintenance Planning Organization and are used to prioritize maintenance work necessary to correct unsatisfactory pipeline conditions.*

Operating Standard 2725.3100 establishes the requirements for the Patrolling Program on PSE's distribution and transmission systems. The program includes transmission systems patrols, slide areas and mobile home communities.

3. Investment in maintenance of existing plant

A. What is the annual cost of maintenance on PSE's gas system?

Discussion – *The cost of maintenance on PSE's system is the sum of Operating and Maintenance (O&M) expenses and Capital expenditures for main and service replacement, other plant replacements, and plant additions completed under various cathodic protection budgets. The current, historical and anticipated future expenditures are shown in the responses to questions C and D below.*

B. How do you determine whether this is an appropriate amount based on size, condition and age of gas infrastructure?

Discussion – *PSE establishes a budget for Gas O&M expenditures based upon a variety of factors. Regulatory requirements drive the majority of Operating expenditures. The budget also includes PSE's assessment of specific system needs or requirements, staff and resources necessary to adhere to the law and regulations, and additional factors related to specific projects.*

Budgets for maintenance and other unplanned work are determined using data from previous years' expenditures and then making adjustments for anticipated changes in the level of work necessary to maintain the system.

Budgets for capital projects are budget based on the type of activity and analysis of related information. For example,

- *Project funding (i.e., service replacements) is based on a combination of trending expenditures and specific unit identification.*

- *Project funding (i.e., district regulator replacements) is based on a prioritized list of specific projects. The projects are prioritized within PSE's planning process.*
- *Other project funding (i.e., Bare Steel Replacement) is budget based on a target level of completion. A commitment has been made to meet a deadline and an appropriate percentage is budgeted for completion in any given year.*

Gas Operations personnel have direct input into the planning process. Individuals and groups have the opportunity to identify specific projects or to propose changes to departmental budget requirements. "Project teams" also meet at appropriate time intervals to discuss progress and budget implications as the current year progresses. In some cases, specific reports are generated on a monthly basis to effectively manage the progress of certain projects and to provide project visibility.

C. Please provide a year-by-year summary of the last five years gas maintenance / replacement budgets.

O&M and Capital - EXPENDITURES

Category	Year					
	2002	2003	2004	2005	2006	2007 *
O&M	\$25	\$27	\$28	\$34	\$39	\$42
Capital	\$16	\$20	\$22	\$27	\$39	\$41
Total Reliability	\$41	\$47	\$50	\$61	\$78	\$84

* Budget

D. How far into the future does PSE budget for maintenance/replacement of gas facilities? Please provide forecasted maintenance/replacement budgets for as many years into the future as these are available.

O&M and Capital - 5 YEAR PLAN

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Discussion - Detailed budgets are developed on an annual basis. For instance, PSE is presently developing the budget for 2008. In order to support planning efforts across the organization, PSE also maintains a long range plan that provides an estimate of construction and maintenance workload and associated spending for the next five years. The plan is updated annually to make sure that the cost and workload estimates are based on the most current information. Due to the dynamics of the customers we serve,

and other factors which can impact our long-range plan, we expect the longer-term view to change during subsequent updates.

- E. Provide us with an annual ratio of PSE expenditures on gas system maintenance vs. new construction over the previous five years.

Category	Year					
	2002	2003	2004	2005	2006	2007 *
Reliability (Capital and O&M in million \$)	\$41	\$47	\$50	\$61	\$78	\$84
NCC and Increase Capacity (in million \$)	\$83	\$83	\$110	\$84	\$119	\$106
Annual ratio	0.5	0.6	0.5	0.7	0.7	0.8

Discussion - Attached is the table showing the annual ratio of PSE expenditures on gas system maintenance versus new construction over the time period 2002-2006. It should be noted that some projects funded under new construction or that are capacity driven eliminate aging infrastructure and improve system reliability.

- F. What is the annual cost per 1,000 services for leak detection, monitoring and repair over the previous five years?

Year	Total Leak Work/ 1000 Services
2002	\$ 551
2003	\$ 649
2004	\$ 682
2005	\$ 728
2006	\$ 1,045
5-yr Ave	\$ 730.97

4. Willingness to make needed improvements that benefit safety

- A. List specific-safety related improvements to your gas system over the previous five years that have not been the result of either a regulator finding or customer complaint.

Discussion – When operating a gas distribution, the idea of safety permeates nearly every aspect of the work performed by company and contract personnel. At PSE, Safety starts with employee personal safety. Over the last two years, PSE has seen a dramatic improvement in its safety statistics for Gas Operations. At each base, there is an active safety committee, base safety meetings are held monthly, all of Gas Operations comes together for an annual Safety Days training and tailgate meetings are held before starting any job requiring two or more people.

Damage Prevention is another area where safety is the key driver. Over forty formal gas and electric safety classes are given by PSE to other first response organizations and if general public presentations are included, the number climbs to over 250. PSE has developed and uses two presentations developed specifically for excavators. One presentation is for a more formal classroom setting and the other can be loaded up on one of the Public Improvement Inspector's laptop for showing out in the field. Both of these presentations give a very powerful safety and awareness message to an audience that as a group causes the greatest amount of damage and therefore exposure to risk.

- *PSE budgets for the replacement of district regulators, large meter sets, mains, and services, each of which was not mandated by the regulators or regulations.*
- *PSE has invested in two additional emergency response trucks. Now, each base has a dedicated response vehicle which will improve the overall response to emergencies.*
- *PSE replaced the entire gas distribution system in the Spiritridge neighborhood as a preventive step.*
- *PSE installs excess flow valves on new construction and replacement services.*
- *PSE, as a practice, works with other entities doing construction in the right of way to coordinate activities. As part of that coordination, PSE takes the opportunity to replace or lower main as appropriate. A list of projects that have been constructed as part of this practice can be identified, but sufficient time must be given for a review of our capital project records.*
- *On an average day, PSE personnel respond to over seventy gas line breaks and odor calls. Our average response time is 38 minutes.*
- *On the majority of our customer service calls, the technician provides a safety message to the customer. We will now be able to document that through our Mobile Workforce System. For Gas First Response, the initial implementation was completed on September 10, 2007. We anticipate that as we use and become more familiar with the system we will identify changes that should be considered.*

PSE is committed to operating a safe and efficient gas distribution system for the sake of its customers, the community and its employees.