

**Sixth Quarter Verification Report  
Investigation of  
Peoples Gas Pipeline Safety Program**

**Presented to the:**

**Illinois Commerce Commission**

**By:**



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## I. Introduction and Summary

During 2007 and 2008, Liberty conducted an investigation of the pipeline safety program of Peoples Gas Company (“Peoples Gas” or “PGL”). On August 14, 2008, Liberty issued its final report, which contained 66 recommendations for improvement of the pipeline safety program. Phase 2 of Liberty’s work involves verification and monitoring of Peoples Gas’ implementation of those recommendations. In October 2008, Peoples Gas issued a draft implementation plan for each recommendation. Liberty provided comments on that plan; the Illinois Commerce Commission (ICC) Staff and Liberty met with Peoples Gas in November 2008 to discuss the plan. In late January 2009, Peoples Gas provided a new implementation plan that addressed those comments and discussions. That implementation plan is included as Appendix A to this report.

Each quarter (three-month period) for two years, Liberty will issue an updated status of its verification work. This is the sixth of these reports, roughly covering the period from December 2008 through May 2010.

This report contains two main sections:

- I. This introduction and a table that provides a summary of the status of Liberty’s verification work on each recommendation.
- II. A summary of the verification work on each recommendation

The following table lists each of the 66 recommendations and addresses the following questions for each recommendation:

- Has Liberty commenced verification work?
- Has Peoples Gas taken the actions in its implementation plan? Did it take those actions on time? (A blank cell in for this question means that it is too early to determine whether Peoples Gas has taken all of the actions stated in its implementation plan. Liberty does not indicate a “Yes” in this column until the company completes all of its commitment actions.)
- Is Liberty’s verification work complete?

Rec. #	Recommendation	Verification Started?	Peoples Gas’ Actions?	Verification Complete?
<b>Overall Observations</b>				
I-1	Improve the management-level organization.	Yes		No
<b>Mains and Services</b>				
II-1	Change replacement-weighting factors to assign a higher priority to vulnerable components and those with greater risks.	Yes	Yes	Yes
II-2	Improve the coupon-sampling program.	Yes	Yes	Yes
II-3	Evaluate cast iron replacement policies and increase replacement rates in the North district.	Yes	Yes	Yes

Rec. #	Recommendation	Verification Started?	Peoples Gas' Actions?	Verification Complete?
II-4	Implement a systematic replacement program of vulnerable service lines.	Yes	Yes	Yes
<b>Excavation Damage Prevention</b>				
II-5	Designate a manager with overall responsibility for the excavation damage-prevention program.	Yes	Yes	Yes
II-6	Work with DIGGER to develop and maintain a complete list of excavation contractors.	Yes	Yes	Yes
II-7	Work with DIGGER to develop a program to screen out bogus emergency-locate requests.	Yes	Yes	Yes
II-8	Upgrade the training program for locators.	Yes		No
II-9	Develop and implement a communications and training protocol for the City of Chicago municipal workers and private contractors.	Yes	Yes	Yes
II-10	Develop and implement a procedure for monitoring directional boring activities.	Yes	Yes	Yes
II-11	Develop and implement criteria and a procedure for conducting inspections of excavating sites.	Yes	Yes	Yes
II-12	Develop and implement a procedure for sealing exposed cast iron joints that are subject to pressures of 25 psig or less.	Yes	Yes	Yes
II-13	Review and implement Common Ground Alliance (CGA) best practices not in place.	Yes		No
II-14	Develop and implement a root-cause analysis program.	Yes	Yes	Yes
II-15	Develop a system for tracking performance metrics for the damage prevention program.	Yes	Yes	Yes
<b>Corrosion Control</b>				
II-16	Bring experience and stability to the corrosion control organization.	Yes	Yes	Yes
II-17	Improve the accuracy of corrosion control readings.	Yes	Yes	No

Rec. #	Recommendation	Verification Started?	Peoples Gas' Actions?	Verification Complete?
II-18	Improve the methods and timeliness of corrective actions.	Yes	Yes	No
II-19	Evaluate atmospheric corrosion inspection practices.	Yes	Yes	No
II-20	Test casings to ensure electrical isolation from the carrier pipe.	Yes	Yes	No
II-21	Improve organizational communications.	Yes	Yes	Yes
II-22	Improve corrosion control training.	Yes	Yes	Yes
II-23	Improve corrosion control record keeping.	Yes	Yes	Yes
II-24	Improve pipe storage practices.	Yes	Yes	No
II-25	Demonstrate implementation of best practices.	Yes	Yes	No
<b>Pressures, Valves, Regulators, and Odorization</b>				
III-1	Determine the resources necessary to ensure all annual valve inspections are accomplished within scheduled timeframes.	Yes	Yes	Yes
III-2	Develop a means to track and report histories of valve inspections to identify valves that cause continual problems, and to focus the inspections and maintenance on those problems.	Yes		No
III-3	Resolve interface problems with the chartless recorders.	Yes	Yes	Yes
III-4	Analyze the gas system to determine sampling sites that will ensure proper concentrations of odorant reaches all parts of the system.	Yes	Yes	Yes
III-5	Develop a schedule and verify that personnel who perform "sniff" tests possess normal olfactory senses.	Yes	Yes	Yes
III-6	Conduct adequate training for Gas Operations Section (GOS) on valves and regulators.	Yes	Yes	Yes
III-7	Re-evaluate the odorant sampling and documentation paper system and convert it to an electronic format.	Yes		No

Rec. #	Recommendation	Verification Started?	Peoples Gas' Actions?	Verification Complete?
<b>Emergency Response</b>				
III-8	Increase the frequency of employee emergency-plan training.	Yes	Yes	No
III-9	Perform joint training with outside responders	Yes	Yes	Yes
III-10	Perform realistic drills with outside responders	Yes	Yes	Yes
III-11	Increased training for outside first responders	Yes	Yes	No
III-12	Provide map access for service section personnel	Yes	Yes	Yes
<b>Leak Management</b>				
III-13	Evaluate business district boundaries.	Yes	Yes	No
III-14	Improve leak response times.	Yes	Yes	Yes
III-15	Improve Inside Safety Inspection procedures and training.	Yes	Yes	Yes
III-16	Improve leak management practices.	Yes	Yes	Yes
III-17	Reduce the year-end leak backlog.	Yes		No
III-18	Implement practical testing of leak investigation personnel.	Yes	Yes	Yes
<b>Construction</b>				
IV-1	Develop specific and comprehensive job descriptions.	Yes	Yes	Yes
IV-2	Review and formalize contractor requirements documents.	Yes		No
IV-3	Develop detailed construction inspection checklists for construction inspectors.	Yes	Yes	Yes
IV-4	Re-evaluate and justify the number of contractor construction projects assigned to its Construction Technicians.	Yes	Yes	Yes
IV-5	Require contracting crews to cut out and destructively test the first fusion joint of each day's work.	Yes	Yes	Yes
IV-6	Develop a means to determine the qualifications of individuals performing covered tasks on job sites.	Yes	Yes	Yes
IV-7	Conduct audits of contractor crews as required.	Yes		No

Rec. #	Recommendation	Verification Started?	Peoples Gas' Actions?	Verification Complete?
<b>Operator Qualifications</b>				
V-1	Review and improve the curricula of all training classes.	Yes		No
V-2	Review and reduce non-training job duties of instructors.	Yes	Yes	Yes
V-3	Revise the testing methods for evaluations of qualifications to perform covered tasks.	Yes		No
V-4	Ensure that all contractors have acceptable Operator Qualification Plans.	Yes		No
V-5	Analyze crew-leader retest failures.	Yes	Yes	Yes
V-6	Modify requalification interval practices.	Yes	Yes	Yes
V-7	Address the new Pipeline and Hazardous Materials Safety Administration (PHMSA) training requirements.	Yes		No
<b>Quality Assurance and Quality Control</b>				
V-8	Improve the Quality Assurance / Quality Control (QA/QC) Program.	Yes	No	No
<b>Programs, Maps, and Records</b>				
V-9	Provide the means for, and require that, General Supervisors spend more time in the field on job sites with their crews.	Yes	Yes	No
V-10	Upgrade the legacy computer systems as planned.	Yes		No
V-11	Develop a structured process for long term planning.	Yes	Yes	Yes
V-12	Develop and implement a procedure for up-rating low-pressure mains.	Yes	Yes	Yes
V-13	Review industry committee participation.	Yes	Yes	Yes
V-14	Establish the combined Integrys successor to the Peoples Materials Standards Committee (MSC).	Yes	Yes	Yes
<b>Performance Measures</b>				
VI-1	Implement a modern and effective performance measures program.	Yes	Yes	Yes

## II. Recommendation Verification Summary

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## Recommendation

I-1

### **Improve the management-level organization.**

Liberty recommended that Peoples Gas have one manager for each of the functions listed below. These managers would have matrix responsibility for that function for all three divisions, and would report to the Vice President on that function.

- Damage Prevention
- Corrosion Control
- Leak Management
- Operator Qualification and Training
- Quality Assurance and Performance Monitoring

Liberty recommended that Peoples Gas implement this recommendation within one year of the date of Liberty's final report.

## Background

During its audit study of Peoples Gas' code compliance activities, Liberty found Peoples Gas did not exhibit strong performance in any of the areas examined. Liberty concluded that Peoples Gas was particularly weak in corrosion control, excavation damage prevention, and performance monitoring and measurement. Liberty attributed organizational and staffing issues at the root of these weaknesses.

Liberty found that the Vice President, Field Operations, was responsible for field operations and construction, including most safety-code requirements, except for engineering and some support functions. However, there was no senior management level ownership and responsibility for some important functional areas below the level of Vice President leading to fragmented decision-making, and a lack of ownership of the entire program or individual aspects of it.

Liberty recommended that Peoples Gas assign specific management-level ownership and responsibility for damage prevention, corrosion control, leak management, operator qualifications and training, and quality assurance and performance monitoring. The programs would perform better, focusing on key activity objectives with either an individual responsible for each of the programs or an individual having matrix responsibility for a program that reports to the Vice President, Field Operations, directly on the performance of an individual program.

## Peoples Gas' Implementation Plan

Peoples Gas indicated that it adopted Liberty's recommendation in part as described by the items listed below.

- Damage Prevention – Peoples Gas indicated that it would hire a manager of System Integrity who will have primary focus and responsibility for damage prevention. The Company agreed that centralizing damage prevention and assigning a manager/leader of System Integrity made good sense.
- Corrosion Control – Peoples Gas said that it assigned a manager to this function.
- Leak Management – Peoples Gas said that it would keep this organization as is, believing leak management is best handled through district shop management.

- Operator Qualification and Training – Peoples Gas indicated that it has separate management of Operator Qualification and Training under review. The Technical Training and Standards group will address operator qualification and training issues.
- Quality Assurance and Performance Monitoring – The Compliance Monitoring Group (CMG) will be taking on the responsibility for Quality Assurance under the existing CMG leadership. Peoples Gas will assign performance management to CMG under its current leadership.

### Verification Discussion and Conclusions

In January 2009, Peoples Gas advised that:<sup>1</sup>

- It has met its commitment for assigning a manager of the corrosion function. Liberty will review this assignment during its work on other corrosion control recommendations.
- Operator Qualification and Training (OQ and T), and Quality Assurance and Performance Monitoring (QA and PM), have individual manager ownership.
- Peoples Gas has not yet filled the position on Integrity Manager, whose duties would include damage prevention.
- It has identified key performance indicators for improving its damage prevention performance and for reducing pending leaks.

With regard to leak management, Peoples Gas believes the function ties closely to the daily maintenance work for each shop, and therefore it is most effective to keep management of leaks under the direct control of individual district management. Accordingly, during this verification phase of its work, Liberty will evaluate the effectiveness of Peoples Gas' district operations managers in their oversight and development of the means to improve the company's leak management.

Peoples Gas informed Liberty that it held a series of meetings among its managers and union personnel to emphasize how the company may achieve improvements in its leak management practices. Peoples Gas established an annual target of 10 percent reduction in leaks pending at year-end. For the metric pending leaks divided by leaks repaired, Peoples Gas has established a goal of 14 percent for 2009 and 10 percent for 2010. Peoples Gas also stated that the percentage of pending Type 2 leaks is 30, compared with pending Type 3 leaks of 70 percent, and that it has been successful in driving down its leak/mile in emphasizing the reduction of Type 2 leaks. Peoples Gas has implemented a process for addressing venting leaks without repairs that has enabled it to limit the number of these leaks and ensure it makes repairs within 5-10 business days. Peoples Gas has evaluated the leaks cleared with no work performed to ensure leak area locations were clear and to bring heightened attention to these reported leaks. Peoples Gas has also re-evaluated those locations where its personnel made temporary repairs on inside or exposed gas piping to ensure that it accomplished permanent repairs. Through these actions, Peoples Gas believes it is demonstrating improved management of this function.

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<sup>1</sup> Interview #101, January 20, 2009.

Peoples Gas established specific leak goals to improve its leak management performance. One of these is to repair all Type 2 leaks within 12 months. However, if a leak requires a main replacement project, or is an upgrade from a Type 3, the repair may exceed 12 months. Beginning in January 2009, on a weekly basis, the District Shop Managers provide the Vice President of Gas Operations with an explanation and a proposed plan to expedite the repair of all Class 2 leaks that are greater than 12 months old.

Peoples Gas had not implemented schedules for rechecking of completed leaks following repairs to ensure leak areas are clear of leakage. Peoples Gas planned to rely on the new work and asset management system (WAMS) to implement such schedules. However, due to delays in the WAMS implementation, Peoples Gas told Liberty that it would determine whether there were alternative ways to institute a system for the recheck of its recently completed leak repair locations under existing systems.<sup>2</sup> Peoples Gas committed to developing a procedure and reinstitute rechecks after leak repairs beginning April 6, 2009.<sup>3</sup> This would be a paper system; Peoples Gas would also explore the cost and time required to establish the new leak-recheck order type from the vendor of the Navigate system.

Data show improved controls of Peoples Gas' leak management practices.<sup>4</sup> As shown in the table below, Peoples Gas reduced its total pending year-end leaks in 2008 from 819 to 555. It reduced the pending Type 2 leaks from 335 to 172 during 2008.

	Type 1	Type 2	Type 3	Total
Leaks pending, 1/1/2008	3	335	481	819
Received	1466	1292	105	2863
Cleared	1070	1440	617	3127
Re-classified	399	15	414	0
Leaks pending, 12/24/2008	0	172	383	555

During the second quarter of 2009, Liberty has continued its evaluation of the effectiveness of Peoples Gas' district operations managers in their oversight and development of the means to improve the company's leak management. Liberty met with Peoples Gas Vice President of Operations, and two of its District Managers. Peoples Gas identified a number of leak management goals and has committed to improve its oversight of leaks. Leak management goals include:

- A 10 percent reduction in leak backlog at year-end,
- Reduce its pending type 2 leaks to less than 30% with the remainder being the least hazardous type 3 leaks,
- Clear all type 2 leaks within 12 months,

<sup>2</sup> Implementation Plan meeting with Liberty, November 20, 2008.

<sup>3</sup> Response to Data Request #388.

<sup>4</sup> Response to Data Request #306.

- District Managers report weekly to the Vice President of Operations as to why any of its type 2 leaks exceed 12 months,
- District Managers ensure any of its leaks that have been vented and downgraded in hazard without making a repair, have in fact received a repair between 5 and 10 business days,
- Verify leak areas are in fact cleared with a second follow-up recheck, especially those reported to be cleared without a repair,
- Reduce response times to reports of leaks from the public,
- Improve on site leak investigations and repairs, and
- Reduce temporary repairs on aboveground and inside piping leaks.

This year's leak management goals are especially challenging as Peoples Gas stated the 2008-09 winter was colder than normal, the 17<sup>th</sup> coldest on record.<sup>5</sup> The colder conditions resulted in an increased number of new leaks and an increase in leak backlogs. Liberty verified that Peoples Gas has assigned additional operations crews to leak repair activities and is working diligently to reduce the backlog of its leaks pending repairs. Liberty notes that Peoples Gas is making progress in many of its stated leak related goals.

Liberty verified that Peoples Gas has met its commitment to implement a paper system of leak area rechecks by April 6, 2009. Liberty also evaluated the leak management approaches of Peoples Gas' Operations General Supervisors, and leak crews assigned to investigate, pinpoint the location of leaking gas facilities, and make repairs at a number of leaking gas locations in its North District<sup>6</sup>. Liberty noted some increased on site presence and supervision of its leak investigation and repair crews. However, Liberty has a limited number of on site field crew visits available during the audit implementation phase, and will be asking Peoples Gas to identify specific activities it has relieved and re-assigned from its general supervisors that make more time available for its supervisors to spend time with their crews in the field.

As shown in the table below, Peoples Gas maintained its levels of leak repair activities clearing 775 leaks during the colder than normal weather, in spite of an increased number of new leaks (968 versus 693 during 2008) requiring initial investigations and make safe actions.<sup>7</sup> It has managed to hold its backlog of pending leaks at the end of March 2009 to a moderate increase as compared with the previous year. Further audits of Peoples implementation plan will determine if these efforts are continuing to be successful in addressing Liberty's recommendations.

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<sup>5</sup> Interview, May 5, 2009.

<sup>6</sup> Interviews and field observation of leak crews, May 6, 2009.

<sup>7</sup> Response to Data Request #396 (rev).

<b>Status of Leak Indications</b>				
Calendar YTD (01/01/2009 to 04/01/2009)				
Class (Grade)	<u>1</u>	<u>2</u>	<u>3</u>	<u>Total</u>
Pending (as of 01/01/2009)	6	161	397	564
Received	437	516	15	968
Cleared	292	370	113	775
Adjustments	-141	16	125	0
Pending (as of 04/01/2009)	10	323	424	757
Calendar YTD (01/01/2008 to 04/02/2008)				
Class (Grade)	<u>1</u>	<u>2</u>	<u>3</u>	<u>Total</u>
Pending (as of 01/1/2008)	3	328	488	819
Received	371	313	9	693
Cleared	225	419	139	783
Adjustments	-145	43	102	0
Pending (as of 04/02/2008)	4	265	460	729

Liberty verification work on this recommendation is not complete. Liberty plans to:

- Interact with the managers assigned to Operator Qualifications, Training, Quality Assurance, and Performance Monitoring in the course of its verification work on other recommendations.
- Monitor the effectiveness of Peoples Gas' leak management practices in conjunction with the verification work on Recommendations III-16 and III-17. The initial results show improvement in leak management practices.
- Because of the delays in implementing WAMS, review Peoples Gas' efforts to implement a temporary paper process to recheck completed leaks following repairs. Alternatively, review the changes Peoples Gas implemented to the Navigate system. On June 19, 2009, Peoples Gas indicated that it made changes in March 2009 to generate electronically and capture leak recheck inspections after repairs.

During the third quarter of 2009, Liberty continued its evaluation of the effectiveness of Peoples Gas' district operations managers in their oversight and implementation of the means to improve the company's leak management. Liberty met with Peoples Gas' Vice President of Operations, and two of its District Managers to discuss progress and changes in leak management. Liberty also evaluated field locations of leaks to verify leak classifications and to verify that leaks cleared in PGL's Navigate system and on PGL's paper records were in fact free of gas readings.<sup>8</sup> Liberty verified that PGL implemented Navigate changes on March 26, 2009 to generate electronically and capture leak recheck inspections after repairs.

Liberty confirmed that PGL is diligently applying its leak repair crews as well as applying additional crews for leak repairs to address its leak backlog. PGL has continued to shift crews from its Central District to the North District, to work on the increase in the numbers of leaks it has received this past winter. For the year to date period (01/01/2009 to 07/29/2009), PGL received 1945 new type 1, 2, and 3 leaks, while clearing 1709 leaks. During the period

<sup>8</sup> Interviews #131, #134, and #135, and field observation of leak crews, August 5, 6, and 7, 2009.

04/01/2009 to 07/29/2009, PGL managed to increase its leaks cleared ratio from 80 percent to 88 percent of the new leaks occurring on its system, and is endeavoring to meet its goal of reducing its leak backlog at year-end. PGL stated it would like to get to the point where its leaks cleared versus the number of new leaks received is at the 105 percent level.

<b>Status of Leak Indications</b>				
Calendar YTD (01/01/2009 to 07/29/2009)				
Class (Grade)	<u>1</u>	<u>2</u>	<u>3</u>	<u>Total</u>
Pending (as of 01/01/2009)	6	161	397	564
Received	882	1004	59	1945
Cleared	309	758	642	1709
Adjustments	-556	54	610	0
Pending (as of 07/29/2009)	23	321	456	800
Calendar YTD (01/01/2008 to 07/30/2008)				
Class (Grade)	<u>1</u>	<u>2</u>	<u>3</u>	<u>Total</u>
Pending (as of 01/1/2008)	3	334	482	819
Received	833	769	50	1652
Cleared	573	908	371	1852
Adjustments	-263	-4	267	0
Pending (as of 04/02/2008)	0	191	428	619

Liberty continues to be concerned with the level and number of new leaks received on PGL's system especially in the North district as compared with the Central and South districts. PGL has indicated that its cast iron and ductile iron breaks and cracks that occur on its distribution mains are directly proportional to the severity of the winter,<sup>9</sup> comparing breaks and cracks with the number of degree-days in a particular year. To address this, PGL needs to continue with its historical rate of eliminating its cast iron and ductile iron mains. This year due to PGL capital constraints, it appears PGL has reduced its cast iron and ductile iron replacements by two thirds, with limited capital dollars available for discretionary main replacements. This in effect will adversely affect leak levels, leak backlogs, and main breaks and cracks, as leaks will continue to occur with the onset of cold weather. Simply put, less cast iron and ductile iron replacements adversely affect PGL's long-term ability to reduce new leaks. In the meantime, PGL's district managers continue to monitor its leak repair efforts in the following areas.

- PGL managers continue to evaluate those leak locations cleared without work performed to verify the leak indications no longer exist by performing multiple rechecks of the leak areas,
- PGL general supervisors schedule leak location rechecks to verify the safety of reducing leak hazard classifications, especially if those leak locations were reduced in hazard with no repairs performed,
- PGL continues to apply efforts to eliminate leaks that have been pending the longest,
- PGL schedules leak repair crews to repair leak locations on streets the city has scheduled for resurfacing.
- PGL leak repair crews make use of leak sketches depicting the extent of hazardous gas migration during their repair efforts.

<sup>9</sup> Response to Data Request #410.

Liberty verified PGL's leak repair actions, leak classifications and recheck results, by conducting a series of leak location follow-up audits to verify the status and leak hazard classifications.<sup>10</sup>

During the fourth quarter of 2009, Liberty continued its evaluation of the effectiveness of Peoples Gas' district operations managers in improving the company's leak management. Liberty met with Peoples Gas' Vice President of Operations and the South District Manager to discuss progress, changes, and oversight of leak management activities. Liberty also evaluated field locations of leaks to verify leak classifications and to verify that leaks recently cleared in Peoples Gas' Navigate system and on paper records were in fact free of gas readings.<sup>11</sup> Liberty verified that Peoples Gas' management is paying close attention to its leak repair activities. These leak activities include clearing leaks with no repairs, allowing leak locations to remain with vent holes open, applying sketches to help evaluate leak migration patterns for its more difficult leaks, reducing the number of leaks pending repairs, and increasing on site supervision of leak repair activities.

One critical aspect of leak management is to reduce as much as practicable the number of leaks pending repair (backlog) as the company approaches the winter season. This is important as gas migration patterns may worsen and pose a greater hazard when frost caps penetrate the ground. One measure of this is the number of leaks and the degree of hazard of those leaks pending repair. The most hazardous leaks are class 1 and class 2. Contributing to the number of new leaks received and the number of leaks pending repair is the aging infrastructure of Peoples Gas' mains and vulnerable service lines. As Liberty reported under recommendation II-3, Peoples Gas has elected to reduce the number of miles of cast iron and ductile iron mains it will replace this year, and plans to continue this reduced level of cast and ductile iron main retirement/replacement level at 15 miles during calendar year 2010. Peoples Gas has been retiring its aging cast and ductile iron mains at a rate of 45 miles per year in past years. This reduced level of cast and ductile iron main retirements adversely affects new leak levels of leaks received especially in Peoples Gas' North district where it operates the greatest number of miles of vulnerable cast and ductile iron mains. Peoples Gas needs to re-establish a higher rate of cast and ductile iron main replacement to help bring down its leak rate and the number of leaks pending at year-end.

The table below captures the leak activities of Peoples Gas for the period ending November 4, 2009, and compares with a similar period one year ago. As noted in earlier quarterly reports, last winter was one of the colder winters of record. This contributed to the difficulty of working leaks under frost conditions, and affected the aging infrastructure, generating additional leaks. Reducing the number of miles of aging infrastructure Peoples Gas retires during the year aggravates the level of leaks it can expect to experience in the future and reduces the tools Peoples Gas must be able to use to reduce existing leak backlog levels.

Liberty confirmed that Peoples Gas is scheduling its leak repair crews as well as assigning additional crews for leak repairs to address its leak backlog. Peoples Gas has continued to shift crews from its South and Central Districts to the North District to work on the increase in the

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<sup>10</sup> Field observation of leak crews, conducted August 4 and 6, 2009, in North and Central Districts.

<sup>11</sup> Interviews #150, and field observation of leak crews, November 9, 2009.

numbers of leaks it has received this past winter. For the year to date period (01/01/2009 to 11/04/2009), Peoples Gas received 2,849 new type 1, 2, and 3 leaks, while clearing 2,552 leaks. Peoples Gas was unable to meet its plan of clearing 110 percent of new leaks received. Even with assigning additional crews from other work to repair leaks, for the period, Peoples Gas cleared just less than 90 percent of the new leaks occurring on its system. This is an increase from the previous quarter where it managed to clear 88 percent of new leaks received. The number of pending leaks has increased to 861 compared to 549 for the same period one year ago. The North district alone has 597 total leaks pending as compared with the same period one year ago of 420. Of these leaks, 263 of the 597 leaks are the more hazardous class 1 and 2 leaks. This compares with 124 class 1 and class 2 leaks out of 420 leaks pending for the same period in 2008.

Liberty verified that Peoples Gas is applying available crews to work leaks, and is endeavoring to meet its goal of reducing its leak backlog at year-end. However, it is unlikely that Peoples Gas will get to the point where its leaks cleared versus the number of new leaks received is at the 105 percent level at 2009 year-end and reduce its leak backlog compared with the previous year.

Peoples Gas needs to increase the miles of vulnerable main and number of services it replaces during the year for 2010 and continue to increase the number of crews working on and repairing leaks. Liberty will continue to monitor Peoples Gas' progress in managing its assets and working its leaks.

<b>Status of Leak Indications</b>				
Calendar YTD (01/01/2009 to 11/04/2009)				
Class (Grade)	<u>1</u>	<u>2</u>	<u>3</u>	<u>Total</u>
Pending (as of 01/01/2009)	6	161	397	564
Received	1316	1448	85	2849
Cleared	336	1084	1132	2552
Adjustments	-958	-156	1114	0
Pending (as of 11/04/2009)	28	334	499	861
Calendar YTD (01/01/2008 to 11/05/2008)				
Class (Grade)	<u>1</u>	<u>2</u>	<u>3</u>	<u>Total</u>
Pending (as of 01/1/2008)	3	334	482	819
Received	1271	1141	91	2503
Cleared	913	1301	559	2773
Adjustments	-360	-12	372	0
Pending (as of 11/05/2008)	1	162	386	549

**Recommendation**

II-1

**Change replacement-weighting factors to assign a higher priority to vulnerable components and those with greater risks.**

**Background**

One objective of Liberty's investigation was to evaluate Peoples Gas' methods for identifying system components more prone to failure and its programs to replace or phase out these components from system operation. Gas distribution-system operators have implemented component replacement programs in accordance with risk-based analyses and performance measures. Between 1990 and 2002, the industry reduced the mileage of cast iron mains by 21 percent and the mileage of bare, unprotected steel mains by 7 percent. During the same period, the industry reduced the number of bare, unprotected steel services 13 percent.<sup>12</sup> Operators continue to replace specific components based on their own or industry's experience with the material's leak prone history.

The table below describes the materials contained in Peoples Gas' system as of year-end 2006.<sup>13</sup>

<b>Material</b>	<b>Mains (Miles)</b>	<b>Services (No.)</b>
Cast Iron	1,664	71
Ductile Iron	314	382
Cathodically protected Steel	1,208	44,031
Plastic	839	411,608
Coated, unprotected steel		182
Bare Steel		6,735
Copper		19,852
Clear Plastic		24,439
<b>Totals</b>	<b>4,025</b>	<b>507,300</b>

Liberty concluded that the priorities assigned to component replacements do not appropriately consider vulnerability and risks, and that Peoples Gas needed to re-evaluate the values assigned to the various factors in its main evaluation process. It should assign higher values to components with a higher probability and consequence of failure. Examples of those facilities that pose higher risks are cast iron and bare steel mains and services near schools, hospitals, and nursing homes. Peoples Gas should have continuing surveillance programs that include materials evaluation (bare steel, cast iron, plastic, copper, mains, services, regulators) of components more prone to failure (mains, services, tees, above ground components), and determination of leakage and damage incident rates, their vintage, and location. Furthermore, Peoples Gas' evaluation process should ensure that the discretionary portion of its main replacement program and its

<sup>12</sup> The American Gas Foundation January 2005 study entitled "Safety Performance and Integrity of the Natural Gas Distribution Infrastructure" (AGF Study).

<sup>13</sup> Responses to Data Requests #10 and #130.

service line replacement programs take into consideration the consequences should leaks or failures occur on these vulnerable facilities.

Liberty recommended that Peoples Gas change replacement weighting factors to assign a higher priority to vulnerable components and those with greater risks. Peoples Gas' processes should result in elimination of vulnerable facilities that could affect structures such as schools, hospitals, and nursing homes.

### Peoples Gas' Implementation Plan

In its implementation plan, Peoples Gas stated that its infrastructure evaluation approach considers and weighs many factors before making repair/replacement. The majority of these decisions identify components with a higher probability and consequence of failure. Peoples Gas agreed that facilities such as hospitals, schools, and nursing homes require unique considerations, and agreed to analyze its infrastructure adjacent to these types of facilities and adjust the weighting values accordingly. Steps in its plan include:

- Obtain land base data identifying schools, hospitals, and nursing homes from the City of Chicago
- Update Peoples Gas' Geographic Information System (GIS) with land base information
- Determine types and scope of facilities (Cast/Ductile iron) that are adjacent to schools hospitals and nursing homes
- Assess weighting values by January 5, 2009
- Implement changes by March 2, 2009. This schedule is consistent with Liberty's recommended implementation timeline of six months from the date of Liberty's final report.

### Verification Discussion and Conclusions

Liberty reviewed Peoples Gas' approach and progress in implementing this recommendation.<sup>14</sup> Peoples Gas obtained data on the location of higher consequence facilities (HCAs) such as schools, hospitals, and nursing homes, and determined Chicago has 1052 schools, 44 hospitals, and 114 nursing homes.<sup>15</sup> Peoples Gas next determined the proximity and characteristics of its vulnerable infrastructure adjacent (within 80 feet) to these types of facilities.

Vulnerable main segments (from 1 ft. to 5296 ft in length) portions within 80 ft or HCAs		
Miles of main	Material and Operating Pressure	Current replacement plans
116	Cast Iron Low pressure	If UMRI score reaches 5.0
28	Cast Iron Medium pressure	If UMRI score reaches 5.0
23	Ductile Iron Low pressure	If UMRI score reaches 5.0
7	Ductile Iron Medium pressure	Replace within 5 years

Peoples Gas modified its main segment ranking software to accept new weighting factors where its vulnerable main materials are within 80 feet of HCAs.<sup>16</sup> Peoples added a 120 percent safety

<sup>14</sup> Interview #104, January 23, 2009.

<sup>15</sup> Response to DR 309.

<sup>16</sup> Response to Data Request #310.

factor to the UMRI (Gas Main Ranking) of gas main segments adjacent to schools, hospitals, and nursing homes. Peoples Gas schedules a gas main for replacement when the UMRI number reaches 6.0. Peoples Gas will replace a gas main adjacent to a school, hospital, or nursing home within 12 months of reaching a UMRI rating of 5.0. Peoples Gas believes ductile iron main is more susceptible to failure when exposed, especially if weakened or in poor condition. The risk increases when operating at medium pressure, and Peoples Gas plans to replace 7 miles of MPDI near HCAs within 5 years.

Peoples Gas also identified materials susceptible to leakage on 32 vulnerable service lines serving HCAs. It plans to replace these within 3 years.<sup>17</sup>

Vulnerable Service Lines Serving Schools, Hospitals, and Nursing Homes (HCAs)		
# of services	Service material	Plans for replacement
24	Ductile Iron	Replace in 3 years
7	Copper	Replace in 3 years
1	Bare Steel	Replace in 3 years
0	Clear Plastic (CAB)	N/A

Peoples Gas has not identified its clear plastic service lines less than 80 feet in length as higher risk or more susceptible to failure. Liberty discusses this issue under Recommendation II-4 below.

Peoples Gas met the timetable in its implementation plan for this recommendation to date. It has:

- Identified its higher consequence structures such as schools, hospitals, and nursing homes.
- Identified its vulnerable service lines consisting of bare steel, ductile iron, and copper serving HCAs, and plans to replace 32 services within 3 years.

Liberty's verification work on this recommendation is not complete. Peoples Gas has not identified its clear plastic as more vulnerable to failure. Liberty needs to review this issue further before determining whether Peoples Gas' actions meet the recommendation. In June 2009, Peoples Gas stated that it has no clear plastic services serving schools, hospitals, or nursing homes.

During November 2009, Liberty reviewed statistics of the vulnerable service lines near HCAs that Peoples Gas identified.<sup>18</sup> Liberty noted that of the original 32 vulnerable service lines identified as serving high consequence buildings, Peoples Gas' field investigations reduced the number to 29. Of the 29 service lines scheduled for a 3-year replacement, Peoples Gas has replaced 7 during 2009 through September 30. In addition, Peoples Gas reduced its clear plastic service lines by 1,100 (5 percent), its copper service lines by 930 (5 percent), and its bare steel service lines by 163 (3 percent) during this period. These replacements will have a positive effect on future leak rates.

<sup>17</sup> Response to Data Request #314.

<sup>18</sup> Response to Data Request #457.

During the fifth quarter, Liberty evaluated the status of Peoples Gas' actions in accomplishing the intent of this recommendation. Liberty previously determined that Peoples Gas accomplished the steps it identified in its implementation plan within its identified timeframes. Those steps included the identification of schools, hospitals, and nursing homes, evaluation of its adjacent mains and services supplying those facilities, reducing the threshold value of its ranking index for adjacent main replacements, and implementing those measures including replacement of its vulnerable facilities. In addition, Liberty previously determined that Peoples Gas identified 29 vulnerable service lines<sup>19</sup> as serving high consequence buildings, and scheduled these for a 3-year replacement. (Peoples Gas replaced seven during 2009 through September 30.)

Liberty confirmed that Peoples Gas continues to apply its procedures and processes to identify and replace its more vulnerable mains (those with a main ranking index (UMRI) of 5 and above) adjacent to high consequence buildings.<sup>20</sup> During 2009, Peoples Gas replaced four gas main segments as a direct result of exceeding the 5.0 UMRI rating. In 2009, PGL put an emphasis on replacing Cast/Ductile Iron segments adjacent to high consequence buildings when responding to municipal public improvement projects. The total effect of the program resulted in upgrading facilities adjacent to 13 schools, 3 hospitals, 1 nursing home, and 1 senior housing complex. Furthermore, Peoples Gas currently has four gas main segments on the "UMRI 5.0 and greater" list that it scheduled to replace in 2010.

Because of these actions, Liberty considers this recommendation verified and closed

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<sup>19</sup>Peoples Gas' originally identified 32 service lines. However, field investigations reduced the number to 29.

<sup>20</sup> Response to Data Request #462.

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**Recommendation**

II-2

**Peoples Gas should ensure that:**

- The coupon collection and analysis program continues
- The results of coupon sampling analyses are integrated with pipe condition information reported by its field crews
- The coupon collection is representative of main conditions in all areas of its system
- It incorporates the program's results systematically into the main replacement process.

Liberty found that it was unclear whether the coupon collection was representative of main conditions in all areas of its system. Moreover, it was unclear how Peoples Gas systematically incorporates this information into the main replacement process. Peoples Gas needs to ensure that it continues the coupon collection program and integrates the results with pipe condition information reported by its field crews.

**Background**

Peoples Gas implemented an industry best practice of cast iron pipe coupon sampling. It is to use the results from the coupons samples in Peoples Gas' replacement weighting factors to assign a higher priority to vulnerable components and those with greater risks. However, it was unclear whether Peoples Gas consistently factored the results of the program into its replacement program and whether the coupon collections are representative of main conditions in all areas of its system. As part of its evaluation of the condition of its cast iron pipe, Peoples Gas' field crews collect and process pipe coupons taken from pipe segments around its system using Institute of Gas Technology (IGT) procedures used in a 1978 study of cast iron pipe. The Technical Training Center is responsible for testing the cast iron main coupons in the lab for strength, corrosion activity, condition, graphitization, and wall loss information. They enter this information into a database that provides justification for its main replacement program, and input to GMOS<sup>21</sup> main ranking system for input to the main ranking index (MRI).

**Peoples Gas' Implementation Plan**

In its implementation plan, Peoples Gas indicated that it currently has a procedure in the Operating & Maintenance Plan (Corrosion Control Order 8.137) that specifies when it should obtain a coupon sample. Addressing Liberty's recommendations in the order listed above, Peoples Gas stated that it:

1. plans to continue the coupon analysis program
2. integrates the results of the coupon sampling analysis with pipe condition information reported by field crews
3. believes the coupon collection is representative of all low-pressure mains identified as "poor" in all areas of the distribution system

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<sup>21</sup> Peoples Gas' Gas Main On-line System (GMOS) is the primary database for the distribution system, containing histories for approximately 83,000 segments. Dynamic segmentation identifies a different main segment whenever the following segment factors change: diameter, material, pressure, the "in" street, and year installed. There are associated segment inspection requirements such as corrosion control and leak surveys.

4. incorporates the results of the coupon analysis into its main replacement process

Peoples Gas plans to accomplish the following in support of its coupon-sampling program to validate that coupons were taken (or if main was replaced).

- Peoples Gas will perform an internal review of records to validate adherence to Corrosion Control Order 8.137 regarding coupon sampling by December 15, 2008. This schedule is consistent with Liberty's recommendation to complete the review within six months of the date of Liberty's final report.
- Provide training / communication if procedure is not being followed properly. – March 31, 2009.
- A report of coupons collected for 2009 and beyond will be generated quarterly to demonstrate the program's consistency and effectiveness. – March 31, 2009.
- Revise corrosion order 8.137 to include coupon sampling of medium pressure gas main segments that have been evaluated and identified as "poor" by field personnel. – March 31, 2009.

### Verification Discussion and Conclusions

Liberty audit determined that Peoples Gas evaluated its coupon sampling processes and identified corrective actions to improve the program.<sup>22</sup> Peoples Gas revised corrosion order 8.137; the current date of the order is March 30, 2009. Peoples Gas will have to review the newly implemented or revised procedure with its Distribution department crews during its 2-day crew refresher training during the December/January period, or conduct tailgate meetings during the year. It is unclear whether the coupon collection is representative of main conditions in all areas of its system. Liberty verified that analyses of cast iron main coupons provided to the Technical Training Center were up to date, and tested in the lab for strength, corrosion activity, condition, graphitization, and wall loss information.<sup>23</sup> Peoples Gas used the results in its main ranking index results.

Liberty will verify when training on revised corrosion work order 8.137 is to take place, as well as Peoples Gas' review of its coupon program with its field personnel. Liberty will also review Peoples Gas' sampling program to determine how it gauges the conditions of its mains throughout its distribution system, and continue to ensure that Peoples Gas tests coupons in a timely manner and uses the results in the main replacement index.

During the third quarter of 2009, Liberty verified that Peoples Gas is continuing its analyses of cast iron mains via coupons provided to the Technical Training Center from field crews. Liberty verified that Peoples Gas' followed its analysis procedures and coupon tracking systems and that coupon analyses were up to date and tested in the lab for strength, corrosion activity, condition, graphitization, and wall loss information.<sup>24</sup> Technical Training and Standards personnel entered the analysis results of the coupon and soil samples taken, into the Gas Main Maintenance Detail format and used in its main ranking index results.

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<sup>22</sup> Interview January 23, 2009.

<sup>23</sup> Interview May 5, 2009.

<sup>24</sup> Interview #133, August 5, 2009.

Liberty considers this recommendation verified and closed.

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**Recommendation**

II-3

**Evaluate cast iron main replacement policies and increase replacement rates in the North district.**

Liberty recommended that Peoples Gas document a plan for cast iron main replacements.

**Background**

Liberty concluded that cast iron main replacements in the North District lagged behind the other districts. As part of its cast iron replacement program in recent years, Peoples Gas has replaced less footage in the North district compared with replacement footage for its Central and South districts. As a result, the remaining amount of the most vulnerable 4", 6", and 8" diameter cast iron main remaining in the North district is 40 to 70 percent higher than the other two districts. The North district also has the most reported leaks and the highest percentage of vulnerable materials. Liberty concluded that Peoples Gas should increase the North District cast iron main replacement rate.

**Peoples Gas' Implementation Plan**

Peoples Gas agreed that cast/ductile iron replacement rates in the South and Central district territories has out paced that of the North district territory and said that it would evaluate the cast/ductile iron replacement criteria. For consistency with Liberty's recommendation number II-1, Peoples Gas believes it should upgrade its system criteria considering system integrity and risk rather than primarily on a geographic boundary. Peoples Gas indicated that it would evaluate the cast/ductile iron replacement criteria and modify the GIS project selection program to include new weighting criteria. Peoples Gas proposed to:

1. Identify and assess risks in the gas distribution infrastructure by November 11, 2008.
2. Capture and update the Geographic Information System (GIS) database with the necessary attributes to query and quantify risks by November 11, 2008. This schedule is consistent with Liberty's recommendation to complete a plan for cast iron replacements within three months of Liberty's final report.
3. Assign a weighting value to identified risks by December 1, 2008.
4. Modify the existing GIS project selection program to include new weighting criteria and issue final report by March 2, 2009.

**Verification Discussion and Conclusions**

During 2008, Peoples Gas increased its cast iron and ductile iron (CI – DI) replacements of main in its North District.<sup>25</sup> Peoples Gas stated the North District replaced the highest amount of these materials during 2008. Peoples Gas replaced the following amounts of cast and ductile iron during 2008.<sup>26</sup>

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<sup>25</sup> Interview #104, January 23, 2009.

<sup>26</sup> Response to Data Request # 385.

District	Total CI-DI replaced (feet) - 2008	Total CI-DI replaced (miles) - 2008	Total miles of 10" CI-DI and less replaced
North	95,905	18.18	15.84
South	78,901	14.94	9.27
Central	72,303	13.69	11.06
All Districts	247,109	46.81	34.16

During April 2008, Peoples Gas formed the Gas Distribution System Design Task Group to identify and consolidate processes Peoples Gas uses to evaluate and select gas main construction projects and coordinate its approach with Peoples Gas long-term strategy and plans for upgrading the gas distribution system. The task group is to make recommendations of the most cost effective approach while managing risk and maintaining system integrity. The process is to weigh multiple components and assign greater values to those components with a higher probability of failure.

Peoples Gas described elements of the plan that include:<sup>27</sup>

1. Use the capital optimization program as the evaluation tool for all gas main system improvement projects. Modifications will be made to the tool to assign greater weighting values to components with higher probabilities and consequences of failure. (i.e., replacement of bare steel, clear plastic and copper service pipes and poor performing gas mains)
2. An emphasis on replacing poor performing CI-DI gas mains adjacent to schools, hospitals, and nursing homes (increasing the weight to 120 percent rating factor when the segment is within 80 feet of HCAs.).
3. An emphasis on replacing ductile iron medium pressure mains.
4. An emphasis on upgrading areas aligned with the long-term plan strategy.

Peoples believes the above will address Liberty's recommendations, will cause replacement rates of cast iron and ductile iron mains in the North District to increase, and will increase the rate of elimination of its more vulnerable at risk service lines.

In April 2009, Peoples Gas indicated that it had not established targets for cast iron and ductile iron replacements for 2009.<sup>28</sup> During May 2009, Peoples indicated it would reduce its capital expenditures by up to \$45 million.<sup>29</sup> This will affect the number of miles of cast iron and ductile iron main it will replace during 2009. Peoples Gas estimated it might only replace between 15 and 18 miles this year, down from 46 miles of cast iron and ductile iron main eliminated during 2008. PGL roughly estimates it costs \$1 million dollars per mile of main to install. With its planned capital expenditure reduction during 2009, Peoples Gas indicated it would have to concentrate its main replacements on those mains adversely impacted by public improvement projects, primarily due to interference work, or mains whose integrity would be affected by proposed construction. Peoples Gas indicated funding for discretionary main replacements is not there for 2009.

<sup>27</sup> Response to Data Request #313.

<sup>28</sup> Response to Data Request #385.

<sup>29</sup> Interview, May 5, 2009.

As stated in its evaluation of Peoples Gas' implementation of Recommendation I-1, Liberty is concerned with the level and number of new leaks received on Peoples Gas' system especially in the North district as compared with the Central and South districts. Peoples Gas indicated that its cast iron and ductile iron breaks and cracks that occur on its distribution mains are directly proportional to the severity of the winter,<sup>30</sup> comparing breaks and cracks with the number of degree-days in a particular year. To address this, PGL needs to continue with its historical rate of eliminating its cast iron and ductile iron mains. For 2009, due to Peoples Gas' capital constraints, it appears Peoples Gas reduced its cast iron and ductile iron replacements by two thirds, with limited capital dollars available for discretionary main replacements. This will adversely affect leak levels, leak backlogs, and main breaks and cracks, as leaks will continue to occur with the onset of cold weather. Simply put, fewer miles of cast iron and ductile iron eliminated adversely affects PGL's long-term ability to reduce new leaks. As of July 1, 2009, the North District had only retired 5.5 miles of cast/ductile iron mains for 2009. Previous interviews indicated that this year, Peoples Gas would only be able to eliminate between 15-18 miles on its entire system this year.

During November 2009, Liberty evaluated Peoples Gas' cast and ductile iron main retirements in each of its districts.<sup>31</sup> Prior to 2008, Peoples Gas' main retirement practices resulted in eliminating fewer miles of its most vulnerable 4", 6", and 8" diameter main cast and ductile in the North district compared with similar mileage for its Central and South districts. This resulted in 40 to 70 percent higher levels of vulnerable, smaller diameter (4" thru 8") cast and ductile iron remaining in the North district, and in higher leak rates in the North district. An additional threat to safety comes from Peoples Gas' medium pressure (22 psig) ductile iron mains. Of the 80 miles of primarily 6", 8", and 12" diameter ductile iron mains, 70 are in lengths greater than 250 feet. To help address this threat, Peoples Gas assigned higher priorities to these main segments for retirement.

Liberty determined that during 2009 through October 1, 2009, Peoples Gas retired 17 miles of cast and ductile iron mains compared with its historical target of 45 miles per year. Of these 17 miles, 13 were of the more vulnerable diameters of cast and ductile iron. Peoples Gas retired 7.38 miles or 43 percent of the 17.29 miles in the North district. The concentration of effort in the North district is good. The total amount of cast and ductile iron main retired in 2009 to date is poor compared with the previous year. This low level of cast and ductile iron main retirement will continue adversely affecting leak rates in the future and continue to limit Peoples Gas' ability to reduce its year-end backlog of leaks prior to the onset of winter conditions. Peoples Gas must increase its level of cast and ductile iron replacements back to least the levels of 2008 to favorably affect leak rates on its system, and continue to concentrate its retirements in the North district.

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<sup>30</sup> Response to Data Request #410.

<sup>31</sup> Response to Data Request #454.

District	Total CI-DI retired (miles) – Jan - Sept 30, 2009	Total CI-DI retired (miles) - 2008	Total miles of 10" CI-DI and less retired 2009 thru 10-1-2009	Total miles of 10" CI-DI and less retired 2008
North	7.38	18.18	6.30	15.84
South	4.55	14.94	4.12	9.27
Central	5.36	13.69	2.76	11.06
All Districts	17.29	46.81	13.18	34.16

During the fifth quarter, Liberty continued its evaluation of Peoples Gas' approach to increase its cast/ductile iron replacement rates in the North District as compared with the Central and South Districts. Liberty determined that Peoples Gas believes a consistent approach in applying the tools it uses in evaluating candidate mains for replacements will result in Peoples Gas replacing more of its vulnerable mains in the North District. Those tools include applying a main ranking index "UMRI greater than 6," "UMRI greater than 5 adjacent to high consequence buildings," and applying its "Capital Optimization Program" in the evaluation process. Peoples Gas has applied a greater focus on consistent application of these tools the past two years. Even though fewer miles of vulnerable main have been retired during 2009, the table below indicates that Peoples Gas eliminated and retired a higher percentage of vulnerable cast and ductile iron mains in the North District as compared with the other districts.

District	Total CI-DI retired (miles) – 2009	Total CI-DI retired (miles) - 2008	Total miles of 10" CI-DI and 2009	Total miles of 10" CI-DI and less retired 2008
North	10.06	18.18	8.84	15.84
South	6.29	14.94	5.70	9.27
Central	5.58	13.69	2.95	11.06
All Districts	21.93	46.81	17.49	34.16

During the sixth quarter, Liberty continued to monitor Peoples Gas' cast and ductile iron replacements. Peoples Gas expects to replace 10-15 miles during 2010, only retiring or replacing those segments of its system it must due to high maintenance or interference with other construction projects.<sup>32</sup> During 2011, Peoples Gas plans to retire 100 miles of cast/ductile iron main. On average, at past annual levels of retirements, for every 3 miles of cast/ductile iron main retired, 4 miles of new plastic main has been installed due to the practical and economical approach of replacing old main with new main on both sides of the street.

Peoples Gas is in the early stages of implementing what it currently calls its System Modernization. Peoples Gas currently has approximately 1,850 miles of these relatively vulnerable materials and as part of the Illinois Commerce Commission's order in case number 09-0167, Peoples Gas has to replace its cast and ductile iron gas pipe by the year 2030 (a 20-year replacement program). This is a tremendous undertaking and will require a high level of communication, coordination, and cooperation not only within Peoples Gas (and Integrys) but

<sup>32</sup> Interview 165, May 3, 2010.

also with the greater Chicago community. Peoples Gas/Integrus is in contractual relationship with Jacobs Engineering to help manage the oversight of the cast/ductile iron retirement program, and held a joint kick-off meeting April 20-25, 2010. Peoples Gas, with assistance from Jacobs Engineering, is developing a master plan document that will address the various aspects of this system improvement program including:

- Customer focus and impacts, communications with neighborhoods to help understand why the construction is needed,
- Community Relations,
- Operations issues, construction inspection, service work both in the street and in customer premises, live gas tie-in work activities,
- Construction crews, involving primarily contracting crews, and logistical support needs,
- Engineering, ensuring work is prioritized to address high maintenance areas of the distribution system, capital optimization program (Bang for the buck), supply needs and header mains, district pressure regulator/vault reductions,
- Accounting
- Rates.

Regarding priorities for replacements, and how this system improvement program will affect the need to retire cast and ductile iron mains in the North District, Peoples Gas is identifying and ranking zone areas it intends to address earlier in the program. Peoples Gas explained that many of the mains with higher maintenance issues, with higher leak rates, vulnerable service lines, and vulnerable mains installed prior to 1920, are located within the North District and will be assigned higher replacement priorities. Liberty expects that the work to implement the 20-year system modernization program will accomplish the intent of this recommendation. The details of the plan being developed by Peoples Gas with assistance from Jacobs Engineering will need to be reviewed and monitored by the Safety staff of the ICC as it becomes available. During its remaining verification work, Liberty will be available to assist the Safety staff.

Liberty considers this recommendation verified and closed.

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**Recommendation**

II-4

**Implement a systematic replacement program of vulnerable service lines.**

Liberty recommended that Peoples Gas document a well-defined plan for the systematic replacement of vulnerable service lines. Peoples Gas needs to implement a replacement program to target the more vulnerable services lines that pose the highest threat to the public.

**Background**

Liberty found that Peoples Gas did not have a well-defined evaluation and replacement program for its at-risk service line components.

Liberty asked how Peoples Gas integrates the need to replace its higher risk service lines with main segments that it is evaluating for replacement.<sup>33</sup> Possible factors associated with vulnerable service lines include age, un-sleeved and located beneath a habitable structure, geography, and material (bare steel, copper inserts, clear plastic, cast iron, ductile iron). However, Peoples Gas indicated that its current method is to replace CAB<sup>34</sup> and bare steel services in conjunction with its Distribution System upgrade program rather than approach their replacements with separate replacement programs. Peoples Gas considers several factors when determining a project's value. The number of CAB and bare steel services in the project area is one of the factors considered.<sup>35</sup> The highest priority would involve high consequence leaks, water in the LP system, and ICC requests. Peoples Gas has 51,208 of these vulnerable lines. At the current replacement rates, it will take approximately 28 years to eliminate the threats from gas facilities closest to habitable structures and some service lines will be more than 77 years old at replacement.

Peoples Gas should assign higher values to components with a higher probability and consequence of failure and should ensure that the discretionary portion of its main replacement program and its service line replacement programs take into consideration the consequences should leaks or failures occur on these vulnerable facilities.

**Peoples Gas' Implementation Plan**

Peoples Gas stated that it currently has a process in place to identify and target vulnerable service lines. Typically, Peoples Gas replaces these services in conjunction with Low-to-Medium Pressure conversion projects. Peoples Gas plans to review the failure rates of vulnerable service pipes and modify the weighting factor as appropriate. Peoples Gas also agreed to perform a study to identify service pipes that pose the highest threat to the public and document a plan for their replacement. The plan indicates it will:

1. Perform a number of database queries to validate statistics on replacement and failure rates of CI/DI, copper, bare steel, and CAB services by November 10, 2008.

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<sup>33</sup> Response to Data Request #153.

<sup>34</sup> CAB is cellulose acetate butyrate service lines, a material that has shown poor performance in the industry.

<sup>35</sup> Response to Data Request #156.

2. Perform a number of Geographic Information System (GIS) queries to identify geographic location of service pipes with higher probability and consequence of failure by November 17, 2008.
3. Analyze data and develop a plan by December 1, 2008.
4. Document a plan for systematic replacement of the more vulnerable service lines that pose the highest threat to the public by March 3, 2009. This schedule is consistent with Liberty's recommendation that Peoples Gas document a replacement plan within six months of the date of Liberty's final report.

Peoples Gas also stated that it has an effective program in place to renew vulnerable service pipes when upgrading an area to medium pressure. It based the program on risk avoidance; the program shows that:

- All medium pressure CAB services have been eliminated
- Only 115 CAB services are longer than 80 feet (CAB is susceptible to shrinkage)
- Of the 1,240 schools, hospitals, and nursing homes, there are only 32 identified as having vulnerable services (none are CAB)
- 92 percent of services Liberty has identified as vulnerable serve residential customers
- Only 5 percent of services Liberty has identified as vulnerable are medium pressure.

### Verification Discussion and Conclusions

Liberty determined that Peoples Gas had identified the numbers and failure rates of its vulnerable service line materials as shown in the table below.<sup>36</sup> Peoples Gas analyzed its leak rates for its services. It believes that it should emphasize replacements of its bare steel services and then copper service lines.

Service material	Leak rate (1994-2007)	Leak rate (1999-2007)	2007 leak rate	# of services
Bare steel	1.86%	1.75%	1.60%	6,500
Clear plastic (CAB)	.47%	.51%	.63%	23,000
Copper (Cu)	.62%	.58%	.52%	19,000
Ductile/cast iron (CI/DI)				750

Peoples Gas has not identified its clear plastic (CAB) service lines less than 80 feet in length as higher risk or more susceptible to failure. PGL has recognized its CAB services as having a vulnerability to shrink and pull out of couplings when their lengths are more than 80 feet, but has not recognized CAB services are also vulnerable to brittle failure. Peoples Gas indicated that it plans to replace all bare steel services in 10 years, approximately 650 per year as it recognizes bare steel services have the highest leak rates.<sup>37</sup> Liberty notes that CAB and copper inserted service lines have leak rates less than bare steel, however, CAB leak rates are worsening, and copper insert leak rates are slightly above that of CAB for the most recent 9-year period.

<sup>36</sup> Response to Data Request #314, and interviews January 23, 2009, May 5, 2009.

<sup>37</sup> Interview, January 23, 2009.

Liberty will continue to monitor Peoples Gas' service line replacements and the leak rates its service materials experience and report on its findings.

During November 2009, Liberty reviewed leak statistics for Peoples Gas' bare steel, sleeved-clear plastic, and copper service lines.<sup>38</sup> For the year 2008, leak rates for bare steel services increased to 1.90 percent of the 6,198 bare steel service population from the prior year's leak rate of 1.60 percent and the previous nine-year average leak rate of 1.75 percent. Leak rates for sleeved clear plastic service lines decreased to 0.43 percent from its prior year's leak rate of 0.63 percent and its nine-year average leak rate of 0.51 percent. Leak rates for copper service lines increased to 0.75 percent from its prior year's leak rate of 0.52 percent and nine-year average of 0.58 percent. Peoples Gas had 22,500 clear plastic and 18,100 copper service lines at year-end 2008. Peoples Gas reduced its clear plastic service lines by 1,100 (5 percent), its copper service lines by 930 (5 percent), and its bare steel service lines by 163 (3 percent) during the 2009 period through September 30. These replacements will have a positive effect on future leak rates. Liberty notes that Peoples Gas has proposed a 10-year replacement program for its bare steel service line population, and does not believe accelerated replacement programs for clear plastic and copper service lines are justified based on leak rates.

During the fifth quarter, Liberty evaluated Peoples Gas programs to address its vulnerable service line materials. As part of this evaluation, Liberty reviewed leak statistics for bare steel, clear plastic, and copper inserted service lines.<sup>39</sup> In calculating leak rates for the year, Liberty is applying values for leak rates based on the number of service lines in service at the beginning of the year.<sup>40</sup> The tables below shows that bare steel service line leak rates are approximately four times as great as clear plastic leak rates and approximately three times as great as that for copper lines.

Service material	Leak rate (1994-2009)	2009 leak rate	# of services at year-end 2009
Bare steel	1.75%	2.03%	6,080
Clear plastic (CAB)	.46%	.52%	22,384
Copper (Cu)	.61%	.65%	17,980
Ductile/cast iron (CI/DI)			433

<sup>38</sup> Response to Data Request #457.

<sup>39</sup> Response to Data Request #466.

<sup>40</sup> This yields a slightly lower value for the leak rate than calculating leak rates by the number of service lines by material existing at year-end. For example for 2009, Peoples Gas' leak rate for bare steel service lines was 2.03% versus 2.07% when dividing the number of services at year-end. The method of calculation is not significant as long as it is understood how that calculation is made and it is applied consistently.

Peoples Gas previously indicated that it plans to replace all bare steel services in 10 years.<sup>41</sup> Regarding its clear plastic and copper service lines, Peoples Gas indicated that leak rates do not support independent systematic replacement.<sup>42</sup>

Because of the Illinois Commerce Commission's (ICC) Order in dockets 09-0166 and 09-0167 regarding a 20-year expedited cast/ductile iron replacement program, Peoples Gas indicated that the accelerated cast/ductile iron main replacement program would provide the flexibility of upgrading entire neighborhoods rather than just the poorest performing gas main segments.<sup>43</sup> Peoples Gas will continue to use the UMRI ratings coupled with the capital optimization program to focus on areas experiencing the majority of leaks and the highest concentration of high consequence buildings. The ICC Order in 09-0167 requires that the entire Peoples Gas cast and ductile iron system be replaced by 2030. As a result, the remaining clear plastic and copper services will be replaced as part of this larger accelerated cast iron main replacement program by 2030.

Even though the age of these vulnerable service lines will continue to increase before they will be removed entirely from the system, the amount of effort involved to eliminate its vulnerable cast and ductile iron mains in 20 years is considerable, and as Peoples Gas stated it will continue to address areas experiencing the majority of leaks. Based on the history of leak rates for clear plastic and copper service lines on Peoples Gas' system, it appears the leak rates are stable, and Liberty would not expect Peoples Gas to experience a significant leak rate increase.

Peoples Gas is addressing the intent of this recommendation and Liberty considers it verified and closed. Liberty will continue to monitor the adequacy and implementation of these programs by seeking further details of Peoples Gas long range planning as part of Recommendation V-11.

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<sup>41</sup> Interview, January 23, 2009.

<sup>42</sup> Response to Data Request #457.

<sup>43</sup> Response to Data Request #464.

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**Recommendation**

II-5

**Designate a manager with overall responsibility for the excavation damage-prevention program.****Background**

Liberty found that no senior level or lower level management person had oversight over or ownership of the excavation-damage prevention program. Peoples Gas operated the program out of each of the three district shops, with no corporate level coordinating or responsible. This contributed to inconsistencies across the three shops, minimal visibility of the program at the corporate level, and a very weak program overall.

Liberty recommended that Peoples Gas designate a senior executive within the company to have overall authority and responsibility for the excavating damage prevention program, including implementing the recommendations described in Liberty's report and ensuring consistency among the districts and the related support services.

**Peoples Gas' Implementation Plan**

In its implementation plan, Peoples Gas accepted the recommendation and indicated that it would create the new System Integrity group on or before March 31, 2009, with responsibilities including excavation damage prevention. The plan said that Peoples Gas would hire a manager of System Integrity by March 31, 2009, and assign staffing for System Integrity by June 30, 2009.

**Verification Discussion and Conclusions**

In April 2009, Peoples Gas said that it had appointed a Manager of System Integrity with responsibility for the Damage Prevention Program, and that he would be selecting his team over the next few months.<sup>44</sup> Liberty noted that this manager had other responsibilities not only with Peoples Gas but also with Integrys Business Support, which involves other utilities, North Shore Gas, Minnesota Energy Resources, Michigan Gas, and Wisconsin Public Service. In an interview, the manager outlined what he thought would be his priority for the program. Peoples Gas would develop and implement a program for meetings with municipal and private excavators to educate and train them about the damage prevention program. A starting point would be participation in the GCDPC (Greater Chicago Damage Prevention Council) and meeting with CDOT (Chicago Department of Transportation) strongly recommending training by Peoples Gas to municipal and private excavators. Efforts in this area resulted in three training sessions in July and August. It appeared to Liberty that although Peoples Gas had good intentions, the efforts were not with any sense of urgency.

Peoples Gas selected the team for the Damage Prevention Program during July and August, failing to meet the target date of June 30, 2009.

In August 2009, Peoples Gas reorganized again and appointed another manager with responsibility for Damage Prevention, Corrosion, and the Distribution Integrity Management

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<sup>44</sup> Response to Data Request # 333.

Program (DIMP) who would report directly to the General Manager for Field Support.<sup>45</sup> Liberty interviewed this manager in November 2009, and discussed his team assignments and plans to continue efforts to work with the city of Chicago to strive for ways to reduce damages, including requiring mandatory training, possible fines, and revoking city permits for flagrant excavators who fail to operate in a safe manner. He has established an ongoing working relationship with DIGGER and is trying to open up a direct communication line with the various city departments. He has an active involvement with GCDPC so that Peoples Gas can bring to their attention safety issues concerning damage prevention.

Liberty is impressed with the enthusiasm, attitude, and vision that this manager has towards reducing damages to underground facilities, establishing a working relationship with all stakeholders, and identifying needed improvements for damage prevention. If these efforts continue, Peoples Gas should achieve progress in damage prevention.

Liberty considers this recommendation verified and closed.

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<sup>45</sup> Response to Data Request # 440.

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**Recommendation**

II-6

**Work with DIGGER to develop and maintain a complete list of excavation contractors.****Background**

Peoples Gas' list of contractors, which it obtains from DIGGER, was not complete. Liberty identified a number of contractors who were on the list of those who had been contacted because they had damaged Peoples Gas' system, but that were not on Peoples Gas' list of active excavators. Peoples Gas needs to work with DIGGER to make sure all active contractors are on a master list for several reasons, including the need to send letters at least annually to remind them of the importance of damage prevention.

Peoples Gas and DIGGER need to work together to develop a system for maintaining and updating a list of active contractors. They should update the list in real time as either party becomes aware of new contractors and other excavators, and Peoples Gas should use it for its annual or more frequent general communications with excavators.

**Peoples Gas' Implementation Plan**

In its implementation plan, Peoples Gas said that CDOT maintains a listing of licensed public way contractors working in the City of Chicago on their CDOT website. CDOT personnel update this website weekly. Peoples Gas will undertake to stay abreast of any CDOT updates to the listing. CDOT personnel were also receptive to communication from Peoples Gas of any unlicensed excavating contractors working in the City of Chicago that Peoples Gas might encounter in the course of business. Peoples Gas indicated that it would:

- Maintain updated list of contractors on regular basis and re-issue Peoples Gas Education letters as required. Communicate with the City of Chicago the names of any contractors working in the City of Chicago discovered by Peoples Gas in the course of business. Target Date: 12/31/2008.
- Revise Distribution Dept. General Order 0.800 Procedure and Policies for the Prevention of Damage to (Underground) Gas Company facilities with new procedure for discovery of unlicensed excavating contractors working in the City of Chicago. Target Date: 3/31/2009.
- Develop training material and provide training to Union and Management personnel. Target Date: 3/31/2009.

**Verification Discussion and Conclusions**

Peoples Gas provided documents that detail how it will maintain a current and complete list of excavating contractors working in the City of Chicago.<sup>46</sup> These documents included a directive that states Peoples Gas' commitment to maintaining a complete list and that assigns responsibilities for maintaining the list and communicating with excavators. The directive indicates that the responsible engineer will use the City of Chicago website, the Illinois Secretary of State website, the NaviGate System listing of excavators sent from the DIGGER office, and Peoples Gas' hit database to create a complete list of excavation contractors working in the city.

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<sup>46</sup> Response to Data Request # 439.

When the engineer identifies new contractors, Peoples Gas will mail to them damage prevention information on digging laws for working in the city and literature explaining their responsibilities for digging safety when working around buried or exposed gas facilities.

Peoples Gas also revised Distribution Department General Order 0.800 Procedure and Policies for the Prevention of Damage to (Underground) Gas Company facilities to reflect where it maintains information on a listing of excavating contractors and relevant training material.<sup>47</sup>

Liberty reviewed these documents and found that Peoples Gas met its commitments. Liberty considers this recommendation verified and closed.

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<sup>47</sup> Responses to Data Requests # 334 and #337.

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**Recommendation**

II-7

**Work with DIGGER to develop a program to screen out bogus emergency-locate requests.****Background**

Liberty concluded that DIGGER did not effectively screen out non-emergency locates called in as emergencies. At times, excavators call in jobs as emergency locates in order to get immediate markouts (within 2 hours), as opposed to the standard practice, which takes several days. DIGGER does not screen for bogus emergency calls and, unlike JULIE, has no provision for penalizing excavators who make such calls. This practice interferes with the performance of the program and, in addition to the inefficiencies created, interferes with the normal workload of the locators.

Liberty recommended that Peoples and DIGGER develop a protocol to enable DIGGER to distinguish between bona fide emergency requests and bogus requests, and to institute penalties for excavators who abuse the emergency locate service. Peoples Gas should make every effort to establish the protocol and implement the notifications within three months of the date of Liberty's report and within six months of the date of the report, Peoples Gas should report to the ICC regarding efforts to implement a penalty system for abuses of emergency locate requests.

**Peoples Gas' Implementation Plan**

Peoples Gas identified the following action items to complete for this recommendation:

1. Initial meeting with CDOT (Chicago Department of Transportation) DIGGER personnel
2. Process to communicate with DIGGER personnel, excavating contractors working via emergency locate requests that are not emergencies. Process for communication would be via e-mail/spreadsheet.
3. Revise Distribution Department General Order 0.800 Procedures and Policies for the Prevention of Damage to (Underground) Gas Co. Facilities with new process.
4. Develop training material and provide training for Union and Management personnel to implement new procedure.
5. Work with DIGGER, Greater Chicago Damage Prevention Council (GCDPC), and the ICC staff to develop a process for compliance via penalty and/or education. One potential penalty may be to delay issuing permits to excavators that have a record of bogus locate requests.
6. Process to communicate with DIGGER personnel, excavating contractors working on emergency locate numbers that are not emergencies via enhancement to the Navigate/DIGGER programming. This will require programming changes that will need more in depth analysis.

**Verification Discussion and Conclusions**

Peoples Gas provided the following information relative to items 1 and 2 in its implementation plan:<sup>48</sup>

*PGL looks to this issue as being an educational issue that will require improved communication with DIGGER for resolution. On 12/10/08, at the monthly Greater*

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<sup>48</sup> Response to Data Request #338.

*Chicago Damage Prevention Council Meeting (GCDPC), PGL representatives initiated a discussion regarding the abuse of emergency locate requests. The general discussion at this meeting regarded the screening process that CDOT/DIGGER call center operators use when they take information from excavators who are looking to obtain DIG numbers. PGL representatives said that in the future PGL would be providing the DIGGER Office with examples of false emergency locates in the hopes that the issues can be corrected. PGL also stated that it plans to work with the GCDPC, as well as on its own, to improve this process. The Manager of the CDOT/DIGGER Office attended and appeared to be open minded to future improvements.*

*PGL will be initiating the following steps in the first quarter of 2009 to provide CDOT/DIGGER examples of incorrect emergency locate requests:*

- 1. PGL Locators will be instructed to identify those emergency locate requests that they determine to be not-in-fact emergencies. Locators will then initiate a "Follow-Up" to themselves in the Navigate system and type in comments in the "Remarks" box as to why they believe the particular emergency locate request is in fact not an emergency.*
- 2. Supervisors will then look at these Locator "Follow-Ups" in the Navigate system and save a copy of the locate screen from Navigate in a folder that will be set up for each District Shop.*
- 3. Weekly, the folder for the previous week containing the emergency locates that we consider to be false, will be e-mailed to the CDOT Manager of the DIGGER Office. A summary comment will be authored regarding the types of issues that were discovered in that particular week on the e-mail. The locate screens identify the name of the locate requester and the type of work that had been the planned for each locate.*

*Longer term, PGL will evaluate enhancements to the Navigate software to capture information and statistics in a more automated manner. Any future Navigate enhancements will be subject to a cost/benefit analysis.*

One of the most important issues with bogus emergency locates deals with whether the call center operators have the training required to screen information from excavators who are looking to obtain DIG numbers. Peoples Gas only had a general discussion, which likely was inadequate.

On April 9, 2009, Liberty interviewed Peoples Gas personnel regarding the proper training of DIGGER call center operators. Peoples Gas agreed to gather initial data on emergency bogus tickets and meet with the Manager of DIGGER to discuss safety issues and other implications involved. These include traffic safety when rushing to a scene, personal safety, and leaving an existing work location to respond to an emergency request. Peoples Gas indicated that it would offer training to assist in the understanding of pertinent information needed in taking emergency locates. Peoples Gas will help verify that operators know how to handle an invalid emergency request, including notifying the caller that they will have to wait 48 hours or they will be

violating the law. If conducted properly, this will be a major step in reducing bogus emergency locates.

Liberty also discussed with Peoples Gas the issue of requesting that DIGGER require mandatory training for excavators who damage facilities. Peoples Gas agreed that it could combine this matter with Liberty's recommendation to request that DIGGER require training or delayed permit issuance for excavators who have a record of bogus locate requests. The ICC Staff allowed Peoples Gas an extension of two months (until May 31, 2009) on implementation plan item #5, in order for Peoples Gas to gather the necessary data and meet with DIGGER.

Peoples Gas included the process for identifying bogus emergency-locate requests in Distribution General Order 0.800.<sup>49</sup> Peoples Gas also noted that the new System Integrity Group (SIG) would communicate findings with DIGGER and will:<sup>50</sup>

*set up meetings with the DIGGER office to review the findings. The SIG will endeavor to work with DIGGER to improve screening methods to reduce the risk of bogus emergency locate requests. We will also encourage DIGGER to impose sanctions for those excavators found abusing the system. Sanctions may include requiring greater notice for locate requests (>2 days) or mandatory damage prevention training.*

Peoples Gas should meet with the Manager of DIGGER to discuss in detail how to curtail bogus emergency locates. Liberty will follow-up on this matter and review the outcome of the Peoples Gas-DIGGER meetings.

In an e-mail of May 29, 2009, Peoples Gas provided locate statistics for the year 2008. Over 20 percent of the locate requests were "emergency." The large number of emergency requests (over 20,000 in 2008) has a significant effect on its resources, Peoples Gas needs to prevent or limit bogus emergency requests. Peoples Gas did not track the actual number of bogus requests in 2008.

Peoples Gas covered implementation plan item #4, training, in its Distribution General Order 0.800.<sup>51</sup> Liberty found that this information adequately covers the subject matter.

Peoples Gas scheduled the action for item # 6 in its implementation plan for the end of September 2009.

In response to a request for information about bogus emergency locate requests, Peoples Gas stated,<sup>52</sup>

*As a way to track "not-in-fact" emergencies, PGL locators have been assigning suspect locates to a fictitious locator named "Emergency No" as described in General Order 0.800 since March 2009. A NaviGate report for all follow-up locates assigned to "Emergency No" has been generated and reviewed by a*

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<sup>49</sup> Response to Data Request #334.

<sup>50</sup> Response to Data Request #339.

<sup>51</sup> Responses to Data Requests #334 and #340.

<sup>52</sup> Response to Data Request #418.

*supervisor to further investigate claims of “not-in-fact” emergencies. The report currently provides a means to identify “not-in-fact” emergencies to investigate and report to Digger but does not identify the original locator. This report and process require further improvements to include a locator data field to identify who generated the “Emergency No”.*

The accompanying report showed that during the four-month period from March through June 2009, there were 106 locates assigned to “Emergency No,” and, after investigation, only 27 turned out to be true emergencies.

On August 5, 2009, Liberty interviewed Peoples Gas personnel regarding the three steps noted above and for which Peoples Gas was hopeful would reduce the number of bogus emergency locate requests. This included a detailed discussion of e-mail communications that Peoples Gas sent to CDOT regarding false locate requests.<sup>53</sup> There were numerous e-mails in which, month after month, Peoples Gas had notified the DIGGER office of probable DIGGER violations or inadequate information on the locate requests. Common among these communications were statements such as:

- *this permit did not say anything about directional bore*
- *actual locate request was for a single address, they were working the entire block*
- *permit did not specify boring*
- *contractor directional boring but not on DIGGER as directional boring*
- *more weekend work, not an emergency*
- *this is happening again... we need to take care of this immediately... we are getting this more and more*
- *more from last weekend, have you figured out what is happening?*
- *seems like every weekend we are getting some of these*
- *it appears that this occurs most frequently with water and sewer*
- *here is another one, don't know if you found out anything about the others sent last week*
- *this does not comply with the standard 48-hour notice*

These comments indicate the continued existence of a significant problem. It shows a lack of positive response from the city and the failure of Peoples Gas to take an alternative approach in its communications. The e-mail communication process is apparently ineffective; Peoples Gas should increase the level of communications to whoever at DIGGER is responsible.

One of the most important issues with bogus emergency locates deals with whether the call center operators have the training required to screen information from excavators who are looking to attain locates. PGL did recommend to CDOT that the operators in the DIGGER office be included in some training. However, Peoples Gas has not followed through with a training plan or necessary actions to deal with operators that would be necessary to reduce the number of bogus emergency locates.

Peoples Gas has made some efforts to meet with GCDPC and CDOT to discuss training. There was one training session for the City Water/Sewer crew foreman and engineers on July 29, 2009,

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<sup>53</sup> Response to Data Request #419.

and a training session for two contractors.<sup>54</sup> However, Peoples Gas only appointed a manager for damage prevention in April 2009. The lack of adequate action to address the training issue is likely because this new manager has several other responsibilities and dealing with the city may require constant and special attention.

In addition, Peoples Gas was supposed to work with DIGGER, GCDPC, and the ICC Staff to develop a process for compliance via penalty and education for abuses of emergency locate requests. PGL did bring this issue up to CDOT, and a recommendation resulted involving presenting data to the DIGGER office so that it could take steps to eliminate the problem. Peoples Gas has not expedited or followed up discussions with the city concerning the compliance process. Moreover, Peoples Gas failed to include the ICC Staff.

Damage prevention continues to show very little progress or significant accomplishments over the last year. In August 2009, Peoples Gas assigned yet another manager to be responsible for damage prevention. Peoples Gas assured Liberty that, given time to come up to speed, this new manager would address the issues and get them resolved. Liberty would like to see this new manager develop a relationship with the city to resolve critical issues necessary to reduce damages to PGL's underground facilities.

Peoples Gas is concerned that a recent change to the Illinois Underground Utility Facilities Damage Prevention Act, in its definition of an emergency locate request, could result in Peoples Gas' locators not being able to differentiate valid and bogus locate requests. Peoples Gas should monitor and take appropriate action on this matter.

Peoples Gas provided a copy of SIG Administrative Directive 2.01, dated October 22, 2009, titled "Addressing Unjustified Emergency Locates."<sup>55</sup> It outlines the method of using the Navigate system to obtain data on unjustified emergency locates. Peoples Gas provided copies of many e-mail items showing communication with DIGGER and the City regarding incorrect and questionable locate requests. Peoples Gas demonstrated that it has conducted supervisory investigations of suspect emergencies for the period from July 2009 through February 2010. Peoples Gas stated, and Liberty agrees, that these actions show completion of action item #6 from the implementation plan.

Although it did not meet the target date for action item # 5, Peoples Gas described its progress in working with DIGGER to improve compliance.<sup>56</sup> One potential penalty is to delay issuing permits to excavators that have a record of bogus locate requests. Peoples Gas has been working closely with GCDPC and a few within the DIGGER environment who understand the critical issues necessary to reduce damages to underground facilities and reduce bogus locates. However, most of Peoples Gas' problems have been with City departments, not private contractors. Peoples Gas indicated that it and the DIGGER office have repeatedly informed city sewer and water departments of their continued probable violation of the One-Call law with little to no response to correct the situation. Liberty concluded that Peoples Gas completed its actions but

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<sup>54</sup> Response to Data Request #420.

<sup>55</sup> Response to Data Request #483.

<sup>56</sup> Interview #172, May 17, 2010.

should continue its efforts to bring the City departments to the same level of compliance as others.

Therefore, Liberty considers this recommendation verified and closed.

Liberty will continue to keep this recommendation open for additional verification work.

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**Recommendation**

II-8

**Upgrade the training program for locators.****Background**

Liberty concluded that Peoples Gas' training for its locators did not meet minimum requirements. Peoples Gas required its locators to have taken basic Operator Apprentice training as well as two days of classroom and on-the-job training before the initial locate. In contrast, NULCA's (National Utility Locating Contractors Association's) training program takes approximately two weeks to complete. Liberty's comparison between Peoples Gas' training materials and classroom sessions and NULCA's training standards demonstrated that Peoples Gas does not meet PHMSA (Pipeline and Hazardous Materials Safety Administration) minimum requirements or industry best practices.

Liberty recommended that Peoples Gas upgrade the training program for locators. As a group, Peoples Gas' locators needed more and better training. Liberty stated that Peoples Gas should design and implement the improved training program within six months of the date of the final report and all locators should receive the new training within one year of the date of the report.

**Peoples Gas' Implementation Plan**

Peoples Gas stated that it would complete the following action items:

- Review NULCA program and identify gaps between it and Peoples Gas' training program.
- Review Common Ground Alliance (CGA) best practices and identify gaps between it and Peoples Gas' training program.
- Design revisions to its program and develop training materials.
- Train instructors.
- Conduct new training for locators: 5/1/09 through 9/30/09.
- Measure the effectiveness of training using root cause analysis and evaluations from QA/QC audits.

**Verification Discussion and Conclusions**

Liberty reviewed Peoples Gas' comparison of NULCA<sup>57</sup> training standards to its own training materials.<sup>58</sup> The company reviewed each NULCA "units of competence," which includes an explanation of the unit, elements of competence, and performance criteria. For each of these "units," Peoples Gas developed a response or recommendations for any deficiencies or clarifications that it might need. The review is complete, but Liberty will spend additional time to verify actual changes or additions in training materials, company procedures, and classroom presentations. An example of a change in company procedures is General Order 0.800- Section C, which states "A sufficient number of locate marks shall be made over mains and services to assure that the excavator can readily determine the locations of company facilities throughout the

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<sup>57</sup> National Utility Locating Contractors Association.

<sup>58</sup> Response to Data Request #341.

area of construction.” The training manager indicated that Peoples Gas would probably require a minimum of ten feet between locate marks over facilities. If this is the case, Peoples Gas will have to revise General Order 0.800 to reflect this policy change.

Peoples Gas also provided the results of its review of the CGA practices and the identification of gaps with Peoples Gas’ training.<sup>59</sup> Peoples Gas did an outstanding job in developing these comparisons, which clearly identify areas for the adoption of best practices. In particular, the spreadsheets for gaps CGA and Peoples Gas’ practices is thorough and includes the gap description, corrective actions, and any follow-up that it might need. The following is an example of part of the company’s findings:

OVERALL SUMMARY - Phase I		
All Gaps	Total Number	51
	Percentage (Gaps to Best Practices)	62%
Remediation Effort	Minor	24
	Moderate	25
	Significant	3
Gap Consequence	Minor	36
	Moderate	10
	Significant	6

		CROSS SECTIONAL SUMMARY			
		Effort			Priority
		Minor	Moderate	Significant	
Consequence	Significant	0	5	1	1st Priority
	Moderate	1	8	1	2nd Priority
	Minor	23	12	1	3rd Priority

With regard to training instructors (action item #4), Peoples Gas sent four TTS (Technical Training and Standards) staff personnel last November for locating training at Staking University in Illinois. Basic locating concepts as well as problem solving techniques that could assist with difficult locating processes were part of the program. The instruction used several instruments to perform specific locating techniques including comparing peak versus null response, triangulation, and depth validation techniques. Instructors who attended this training thought it was a valuable experience and would welcome future training opportunities.

<sup>59</sup> Response to Data Request #342.

Peoples Gas scheduled action items #3 through #6 to be complete after April 1, 2009, and Liberty will monitor these items later in the verification phase.

Peoples Gas provided information regarding its attempt to “measure the effectiveness of the locator training using root cause analysis and evaluations from QA/QC audits.”<sup>60</sup> An April 16, 2010, memorandum said that TTS implemented the “Kirkpatrick Model for Evaluating Effectiveness of Training Programs” to evaluate the effectiveness of its Locator Training Program. This evaluation model consists of a four-level approach in assessing a training program’s effectiveness. The first level showed that students responded favorably to improved training. The second level involves a pre-test and post-test. Peoples Gas could not yet implement this level but pointed out that most of the students who failed an initial test, passed the re-test. Supervisors commented favorably on the quality of locator work as a measure of the third level. Peoples Gas could not complete level four because it said 2008 data on mis-locates were not conducive to comparison with 2009 data.

Liberty and the ICC Staff met with Peoples Gas to review its efforts to evaluate locator training.<sup>61</sup> Liberty suggests that Peoples Gas consider the possible use of a checklist form to document supervisors’ evaluations, the use of more recent CMG audit results rather than waiting for complete 2010 data, and the number of Operator Apprentices or new hires as locators. In addition, the group discussed the flow of data on mis-marks so that appropriate remedial action could occur. In a later communication,<sup>62</sup> Peoples Gas indicated that it would update SIG (System Integrity) Administrative Directive 5.00 to address issues discussed. Liberty will keep its verification work open on this recommendation to review locator assignments and Peoples Gas’ measurement of the effectiveness of locator training.

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<sup>60</sup> Response to Data Request #484.

<sup>61</sup> Interview #175, May 19, 2010.

<sup>62</sup> May 31, 2010.

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**Recommendation**

II-9

**Develop and implement a communications and training protocol for the City of Chicago municipal workers and private contractors.**

**Background**

Liberty concluded that Peoples Gas' communications with and training for excavators was deficient. For the period January 2006 through September 2007, Peoples Gas' underground facilities were damaged in 1,452 incidents. Of that number, 632 incidents (44 percent) were excavations about which the one-call system was not notified. Liberty concluded that Peoples Gas' communications to excavators regarding excavation damage prevention have not been effective.

Municipal workers caused 564, or 39 percent of the 1,452 incidents in the period referenced above. The last documented training of City of Chicago employees was in April 2004. Liberty concluded that the training provided to City of Chicago employees regarding excavation damage prevention was woefully inadequate.

Liberty recommended that Peoples Gas develop and implement a program for meetings with municipal and private excavators to educate and train them about the damage prevention program. Excavators should be required to attend such meetings.

**Peoples Gas' Implementation Plan**

Peoples Gas stated they would comply with Liberty's recommendation by completing the following action items:

1. Prepare a letter to GCDPC (Greater Chicago Damage Prevention Council) strongly recommending training by TTS to municipal and private excavators
2. Schedule training sessions from responses from GCDPC members
3. Conduct training January 2009 through May 29, 2009. This is consistent with Liberty's recommendation that the training should be complete by May 2009.

**Verification Discussion and Conclusions**

Peoples Gas issued a letter to GCDPC recommending training for municipal and private excavators.<sup>63</sup> TTS scheduled training every Friday through the month of April on damage prevention for the city of Chicago.<sup>64</sup> Peoples Gas' TTS manager was uncertain who would be conducting the training for the city and indicated that there had been no response from GCDPC members for any training.

During the week of April 6, 2009, Liberty confirmed that Peoples Gas is not meeting the intent of this recommendation. The only effort made regarding the training of municipal workers and private contractors was sending a letter to the GCDPC letting them know Peoples Gas could conduct some training. There has been no response from members of GCDPC and consequently

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<sup>63</sup> Response to Data Request #301 and #346.

<sup>64</sup> Response to Data Request #347.

no training given. Peoples Gas agreed to remove the training from the calendar until it actually schedules training. Peoples Gas appointed a manager for Damage Prevention on April 10, 2009. He indicated that he would contact City department heads about training. Liberty will follow-up on this matter and other issues of training contractors in the future.

In a May 27, 2009, telephone meeting with the new Manager of System Integrity (damage prevention), Peoples Gas confirmed that no actual training had been conducted. The manager indicated that he met with the head of Chicago Department of Transportation to present Peoples Gas' training materials, and hopes that this will lead to training of personnel in various city departments.

On August 5, 2009, Liberty interviewed Peoples Gas personnel regarding implementing training protocol for the city of Chicago municipal workers and private contractors. Peoples Gas had discussions with GCDPC and CDOT concerning training for municipal workers and private contractors.<sup>65</sup> However, Peoples Gas documented only the following damage prevention training for this year as a result of their efforts:

1. *Training for City Water/Sewer Crew Foreman and Engineers was held on July 29. Training for Benchmark was held July 30*
2. *Training for GroundHog is scheduled for August 18.*

Peoples Gas has not conducted the damage prevention training of excavators that is necessary to have a meaningful effect. Peoples Gas' actions to promote excavator training have not been effective. This is partly because Peoples Gas did not assign in a timely manner a manager who would be accountable for damage prevention and then replacing this manager three months later. Peoples Gas is almost a construction season behind in actions it should have taken at the end of 2008.

Although Peoples Gas made a recommendation to GCDPC that excavators causing damage should be required to attend training, there were only two excavators that eventually had any training. (There are over 300 eligible for training.<sup>66</sup>) All excavators causing damage should be required to attend training. The recommendation made to GCDPC concerning mandatory training was insufficient and ineffective. It did not address all excavators and did not produce results.

Liberty found that Peoples Gas had not met the clear intent of this recommendation. Liberty will continue to monitor any progress in this area.

On November 9, 2009, Liberty interviewed Peoples Gas' personnel regarding progress towards implementing training protocols for city municipal workers and private contractors. The new (first week of August 2009) Manager of System Integrity has tried to have discussions and meetings with GCDPC and CDOT concerning this training. These efforts have not been effective apparently because the city of Chicago controls and operates DIGGER and there is no penalty or

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<sup>65</sup> Response to Data Request #420.

<sup>66</sup> Response to Data Request #335.

policy provisions regarding training for any excavator (private or municipal) who violates guidelines or damages underground facilities.

Peoples Gas has reached out to private contractors offering them damage prevention training similar to that offered to the various city departments, but has received the same general lack of response. The contractors have little incentive to dedicate their peoples' time to attend training. Without enforcement especially a provision for mandatory training for any excavator who damages underground facilities there is no incentive for an excavator to commit time for employees to attend training offered by Peoples Gas.

Excavation damage poses by far the single greatest threat to Peoples Gas' distribution system reliability and integrity, making excavation-damage prevention the most significant opportunity for distribution-pipeline safety improvements. States that have a comprehensive and effective damage prevention program have enforcement of damage-prevention laws and regulations and civil penalties for violations. An Illinois or Chicago enforcement policy would result in a substantially lower probability of excavation damage to Peoples Gas' pipeline facilities and thus a lower risk of serious accidents.

Mandatory training is an effective alternative or supplement to civil penalties and, as an enforcement tool, promotes compliance with damage prevention laws and regulations. Peoples Gas should try to urge the city to require training or possibly restrict city permits for excavators who continue to damage underground facilities. Lack of enforcement is a key gap in damage prevention within the city of Chicago. Peoples Gas should continue its efforts to offer damage prevention training to all stakeholders and possibly consider requiring training as part of any collection of costs for damages to their facilities caused by excavators.

In January 2010, Peoples Gas provided information about training offered to and attended by City and private excavating contractors.<sup>67</sup> Peoples Gas contacted several of the excavators through the GCDPC. Of the 19 contacts made, 15 produced attendees at training conducted in July, August, October, and December 2009. Peoples Gas conducted most of this training on December 2 and December 16, 2009. The City Water/Sewer Department had attendees at the December 2 session. Training attendees included two of the three private contractors that had the most hits on Peoples Gas' facilities during 2009.<sup>68</sup> Peoples Gas demonstrated significant progress in training related to preventing excavator damage prevention.

In April 2010, Peoples Gas provided additional information about excavator training sessions, its communications with DIGGER, and evidence that DIGGER is willing to penalize excavators who do not attend the training sessions.<sup>69</sup> However, the training accounted for only a small percentage of stakeholders working in the city of Chicago. For City workers, Peoples Gas has held two training sessions between July 2009 and February 2010 for all City departments. Liberty reviewed with Peoples Gas numerous documents that recorded communications about One-Call

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<sup>67</sup> Updated response to Data Request #422.

<sup>68</sup> Responses to Data Requests #422 and #441.

<sup>69</sup> Response to Data Request #493.

violations and damage prevention training.<sup>70</sup> Liberty concluded that Peoples Gas has done a reasonable job in trying to meet the intent of this recommendation. Peoples Gas should continue to work with all stakeholders to attempt to require mandatory training for excavators including city workers who violate the law.

Liberty considers its verification work on this recommendation closed.

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<sup>70</sup> Interview #172, May 17, 2010.

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**Recommendation**

II-10

**Develop and implement a procedure for monitoring directional boring activities.****Background**

Liberty found that Peoples Gas did not identify and observe directional boring activities. Directional bores create additional hazards to underground facilities and require special treatment, including a Peoples Gas presence on-site during the boring operation. However, Peoples Gas' locators mark out the site and leave, with no special consideration given to a directional bore site. The mark-out ticket usually indicates a directional bore. Even if not on the ticket, an adequately trained mark-out person should be able to assess the intent to bore at the site.

Liberty recommended that Peoples Gas develop a procedure for identifying and monitoring directional boring activities and train its locators or other monitors in the specific requirements and hazards associated with directional bores. Peoples Gas should pay particular attention to those contractors who have caused damage in previous boring operations.

**Peoples Gas' Implementation Plan**

Peoples Gas stated they would comply with Liberty's recommendation by completing the following action items:

- Develop criteria for enhanced monitoring of directional boring activities.
- Revise Distribution Dept. General Order 0.800 Policies and Procedures for the Prevention of Damage to (Underground) Gas Company Facilities with new criteria for monitoring directional boring activities.
- Work with DIGGER office and GCDPC (Greater Chicago Damage Prevention Council) to ensure that excavator and Digger office personnel understand the importance of communicating boring activities when locates are requested.
- Develop training material and provide training to Union and Management personnel covering new monitoring requirements for directional boring.

**Verification Discussion and Conclusions**

Liberty reviewed relevant sections of General Order 0.800, in which Peoples Gas addressed directional boring activities.<sup>71</sup> Peoples Gas did a good job in revising procedures to include new criteria for monitoring directional boring activities. In addition, Peoples Gas indicated that it is initiating steps to amend procedures in an effort to minimize risks associated with excavators performing directional drilling operations in close proximity to underground natural gas facilities.<sup>72</sup> The steps Peoples Gas is taking are twofold. One is improved education and communication required for Peoples Gas to identify excavators who plan to perform directional boring. The other is enhanced monitoring Peoples Gas will conduct to minimize the risks to its

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<sup>71</sup> Response to Data Request #334.

<sup>72</sup> Response to Data Request #348.

facilities when directional boring is performed. Some of Peoples Gas' standards are consistent with industry practices such as:

1. Verify test holing is performed when crossing over gas facilities.
2. Drill head is observed in test holes as it passes exposed gas facilities.
3. Drill paths parallel to gas facilities, within 3' of the gas facility, should be discouraged. When deemed necessary to drill within 3', test holing at regular intervals should be performed to ensure the facility being installed did not encroach on the gas facility.
4. Drilling machines are located to avoid anchor stakes striking nearby underground gas facilities.
5. Excavators with history of damaging gas facilities will be observed more closely during actual construction

Peoples Gas also said that:<sup>73</sup>

*On 12/10/08, at the monthly Greater Chicago Damage Prevention Council Meeting (GCDPC), PGL representatives initiated a discussion regarding the importance that locate requests identify the planned excavating techniques. It was agreed that the current information that excavators are required to provide to the DIGGER Office is deficient in determining excavating techniques.*

*It was suggested that the DIGGER call center operators who take the requests be informed that they should extract this type of information when excavators call for DIG numbers. It was also recommended that the DIGGER system be enhanced to require that the excavation technique be a required entry field. The Manager of the DIGGER Office, who attended at this meeting, said that they would look into this issue.*

Apparently, Peoples Gas' representatives made no effort to visit DIGGER facilities and ensure that office personnel understand the importance of communicating boring activity on locate requests. There was no documentation of any follow-up by Peoples Gas to check on training of call center operators.

On August 5, 2009, Liberty met with PGL personnel to discuss action item # 3, which states: Work with DIGGER office and GCDPC (Greater Chicago Damage Prevention Council) to ensure that excavator and Digger office personnel understand the importance of communicating boring activities when locates are requested.

Liberty reviewed numerous e-mails over a period of several months and found repeated comments such as:<sup>74</sup>

- this permit did not say anything about directional bore
- permit did not specify boring
- contractor directional boring but not on DIGGER as directional boring

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<sup>73</sup> Response to Data Request #348.

<sup>74</sup> Response to Data Request #419.

- this is happening again... we need to take care of this immediately... we are getting this more and more

It is apparent that e-mails are not accomplishing anything regarding DIGGER office personnel understanding the importance of communicating boring activities when locates are requested.

AT the December 10, 2008, monthly meeting of the GCDPC,<sup>75</sup> Peoples Gas suggested that the DIGGER call center operators who take the requests be informed that they should identify planned excavation techniques such as boring activity when excavators call for DIG numbers. It was also recommended that the DIGGER system be enhanced to require that the excavation technique be a required entry field. After 10 months, Peoples Gas has not followed through sufficiently in order to get these recommendations accepted by the city of Chicago.

Liberty requested that Peoples Gas provide efforts, results, and follow-ups it has taken to ensure DIGGER personnel understand the importance of communicating boring activity on locate requests.<sup>76</sup> Liberty found Peoples Gas' response to be inadequate and not addressing the issue properly. One of the most important issues with bogus emergency locates and identifying boring activities deals with whether the call center operators have the training required to screen information from excavators who are looking to attain locates. Peoples Gas has not taken the right actions or followed up to create opportunities to ensure that DIGGER office personnel are trained properly to identify when boring activities are involved in locate requests. DIGGER office personnel are similar to 911 operators in that if the information is not taken properly, the result could cause personal injury or death. Peoples Gas needs to take a stronger approach with the city of Chicago in order to resolve this issue.

In November 2009, Liberty interviewed the new manager for the Damage Prevention Program on this recommendation. He has had numerous meetings and discussions with GCDPC and the manager for DIGGER that resulted in their office personnel understanding the importance of boring activity and reporting this information as a line item on locate requests. This is a major accomplishment for Peoples Gas that will help to identify and monitor boring activity in the city of Chicago.

Liberty verified that Peoples Gas completed the training of its personnel relative to this recommendation. Peoples Gas trained all locators using the revised Distribution Department General Order 0.800 Policies and Procedures for the Prevention of Damage to (underground) Gas Company Facilities and criteria for monitoring directional boring activities.

Liberty will consider this recommendation verified and closed.

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<sup>75</sup> Response to Data Request # 348

<sup>76</sup> Response to Data Request # 423

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**Recommendation**

II-11

**Develop and implement criteria and a procedure for conducting inspections of excavating sites.****Background**

Liberty concluded that Peoples Gas' procedural requirement to inspect the site every time its facilities are exposed was unrealistic and the company did not comply with the procedure. Peoples Gas did not inspect most sites after excavation exposure, and in fact, this is an unrealistic and impractical requirement. Peoples Gas needs to perform a risk assessment and develop criteria for which types of sites it must inspect and which it will inspect on a sample basis.

Liberty recommended that Peoples Gas develop criteria for inspecting excavation sites, including a determination and ranking of relative risk of various types of excavations and development of a realistic and achievable sampling protocol.

**Peoples Gas' Implementation Plan**

Peoples Gas stated they would comply with Liberty's recommendation by completing the following action items:

- Develop more reasonable criteria and guidelines for performing inspections at excavation sites.
- Revise Distribution Dept. General Order 0.800 Policies and Procedures for the Prevention of Damage to (Underground) Gas Facilities with new inspection guidelines.
- Develop training material and provide training to Union and Management personnel.
- Provide locators with business cards to help improve communication with excavators in order to implement new inspection guidelines.
- Develop report to verify the company is achieving sampling requirements contained in new guidelines.

**Verification Discussion and Conclusions**

Liberty reviewed General Order 0.800 Policies and Procedures for the Prevention of Damage to (Underground) Gas Company Facilities dated 3/30/09<sup>77</sup> where PGL has revised this document with new inspection guidelines. Liberty found that Peoples Gas has done a good job in this area and has revised its procedures accordingly. Peoples Gas established plans to perform follow-up inspections on 5 percent of most excavation activities such as:<sup>78</sup>

- Excavations to be performed by City of Chicago workforces or contractors working for the City of Chicago since these excavators have a poor record of damage prevention regarding PGL facilities.
- Other excavators with a poor record of damage prevention regarding PGL facilities.
- Excavations to be performed in parkways where a gas main is located since this is where most gas mains are damaged.

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<sup>77</sup> Response to Data Request #334.

<sup>78</sup> Response to Data Request #351.

- Excavators trenching across intersections since this is the location where most gas mains are crossed perpendicular and damage is more likely.

Because there were about 90,000 locates last year, this could amount to approximately 90 follow-ups per week. This is aggressive and Liberty will monitor Peoples Gas' efforts to meet this goal.

Liberty also noted that Peoples Gas' plans provide for and document that inspections of exposed gas facilities are performed by creating a checklist to be completed by the company employees who perform inspections. These employees are not always locators. Peoples Gas will file the checklists at each District Shop. The checklist will include those items currently shown in Distribution Dept. General Order 0.800.

Liberty will verify that Peoples Gas is using the checklist in the field during the construction season. In addition, Peoples Gas is developing training material, and will conduct the training of union and management personnel between May and the end of October 2009. Peoples Gas provided locators with business cards to help improve communication with excavators and to implement new inspection guidelines. Peoples Gas indicated that the report to verify that the company is achieving sampling requirements contained in new guidelines would be developed by the target date of September 30, 2009.

In November 2009, Liberty verified that Peoples Gas completed the training of personnel relative to this recommendation. It trained all locators using the revised Distribution Department General Order 0.800 Policies and Procedures for the Prevention of Damage to (underground) Gas Company Facilities with inspection guidelines. Liberty also reviewed a report to verify that the company is achieving sampling requirements contained in the new guidelines. Peoples Gas indicated that in August 2009, the System Integrity Group (SIG) was allotted three permanent Follow-Up Locators to perform the sampling requirements outlined in General Order 0.800. Because the results fell short of the 5 percent sampling threshold, Peoples Gas is identifying resources to improve future sampling results.<sup>79</sup>

As part of the Damage Prevention Program, Peoples Gas a directive that detailed the follow-up process for reporting 100 percent of horizontal directional drilling locate requests, 100 percent of locate requests within 100 feet of Critical Facilities, and 5 percent of the total of all locate requests and the reporting of One-Call violations. The reporting will include any deficiencies identified and documented on the Facilities Protection Checklist form outlined in General Order 0.800. Peoples Gas reported that audits of:

- Directional Drilling locate requests were 54.7 percent deficient
- The (5 percent) total of all locate requests was -3.6 percent or 72% deficient
- Critical facilities were 9 of 9 for 100 percent of goal.

Although the sampling requirements were not met, Liberty's review determined that Peoples Gas developed a proper reporting and follow-up processes for horizontal directional drilling locate

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<sup>79</sup> Response to Data Request # 435.

requests, locate requests within 100 feet of their Critical Facilities, and the total of all locate requests.

The ICC Staff may want to consider additional follow-up actions on these deficiencies.

Liberty considers this recommendation verified and closed.

**Recommendation**

II-12

**Peoples Gas should develop and implement a procedure for sealing exposed cast iron joints that are subject to pressures of 25 psig or less.**

**Background**

Federal code requires that exposed cast iron joints subject to pressures 25 psig or less must be sealed by means other than caulking. That requirement was not included in Peoples Gas' procedures, and Liberty observed that Peoples employees were generally not aware of it. Liberty found that Peoples Gas needed to include this code requirement in its procedures, make its field personnel aware of the requirement, and implement a process to provide for such sealing.

**Peoples Gas' Implementation Plan**

In its implementation plan, Peoples Gas stated that it will make changes to applicable orders to reflect that whenever a cast iron or ductile iron bell joint subject to pressures of 25 psig or less is exposed, it must be sealed (leaking or not) using means other than caulking (*i.e.*, anaerobic sealant or encapsulant). Peoples Gas would:

- Issue a bulletin by 11-26-08
- Conduct tailgate information sessions by 12-31-08, and
- Update appropriate O&M Orders by 3-31-09.

**Verification Discussion and Conclusions**

To address this code requirement, Peoples Gas issued Distribution Department (Technical Training and Standards) Bulletin #74, dated November 12, 2008, entitled Exposed Cast Iron Bell and Spigot Joints.<sup>80</sup> Peoples Gas also issued Distribution Department Main Work order numbers 1.003, 1.004, 1.005 and 1.007, that address the cast iron joint sealant requirements contained in the federal safety code.<sup>81</sup> Peoples Gas held tailgates training sessions on various dates in November 2008 using Bulletin #74.<sup>82</sup>

Liberty concluded that Peoples Gas took the actions in its implementation plan and met the intent of this recommendation. Liberty considers this recommendation verified and closed.

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<sup>80</sup> Response to Data Request # 301.

<sup>81</sup> Response to Data Request # 394.

<sup>82</sup> Response to Data Request # 355.

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**Recommendation**

II-13

**Review and implement Common Ground Alliance (CGA) best practices not in place.****Background**

Liberty concluded that Peoples Gas' adoption of industry best practices in the area of damage prevention was very limited. Of the eight categories of best practices recommended by the Common Ground Alliance, Peoples Gas claimed to have implemented best practices in two. However, Liberty's examination revealed deficiencies in those areas, leading to the overall conclusion that Peoples Gas has not implemented industry best practices in its excavation damage prevention program. Furthermore, Peoples Gas does not appear to be deriving sufficient benefit from the limited number of best practices adopted by Greater Chicago Damage Prevention Committee's subcommittee on best practices.

Liberty recommended, as part of the overall upgrading of the excavation damage-prevention program, that Peoples Gas review the CGA compilation of best practices, discuss them with the ICC, and determine which it should implement.

**Peoples Gas' Implementation Plan**

In its implementation plan, Peoples Gas indicated that it was soliciting responses from peer utility companies in an effort to ascertain CGA best practices used in the natural gas industry. It planned to:

- Complete the survey of peer utility companies by 11/30/2008
- Determine and compile CGA best practices used in the natural gas industry and decide those best practices that Peoples Gas will implement by 3/31/2009
- Prepare a report of CGA best practices and implementation plan for ICC review by 6/30/2009
- Revise procedures to implement CGA best practices at Peoples Gas by 9/30/2009.
- Incorporate new best practices in training curriculum by 3/31/2010.

**Verification Discussion and Conclusions**

Peoples Gas provided its "Damage Prevention Common Ground Alliance Implementation Plan."<sup>83</sup> It listed 44 best practices and detailed the company's plan for implementing or demonstrating compliance. The status report indicated that Peoples Gas had completed the required actions for all but one part of one of the practices. The actions for that part were not required for completion until April 30, 2010. Peoples Gas closed two of the practices without any required action. Most of the actions involved procedural changes or additions to a General Order.

Liberty has not completed its verification work on this recommendation.

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<sup>83</sup> Response to Data Request #485.

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**Recommendation**

II-14

**Develop and implement a root-cause analysis program.****Background**

Liberty found that Peoples Gas did not perform root cause analyses as part of its damage prevention program. Root cause analysis is an important analytical tool, and the Common Ground Alliance recommends its use. It should be a part of any utility's damage prevention program. Peoples Gas did not compile and analyze data essential for such analysis, although it appears that the field documents do identify some direct cause data.

Liberty recommended that Peoples Gas develop and implement a root-cause analysis program. As part of the previous recommendation regarding the general upgrade of its damage prevention program, Peoples Gas should supplement its existing data collection. It should incorporate the information from the DIRT root cause form into Peoples Gas' Form 7086, Report of Facility Damage. Using that data, it should develop and implement a root-cause analysis program.

**Peoples Gas' Implementation Plan**

In its implementation plan, Peoples Gas said that it would develop a root-cause analysis program. It planned to use a system called IVOS Claims Management that is supported by the Integrys Insurance and Claims department. Accident reports would include root cause data boxes and the forms would match the root causes listed on the DIRT root cause form.

**Verification Discussion and Conclusions**

Peoples Gas provided its Accident Report Field Copy that contained root cause tracking information.<sup>84</sup> Peoples Gas indicated that it conducted training for management employees in December of 2008. It completed training for field employees during Crew Refresher training held at each of the District Shops starting in February of 2009 and ending in March of 2009.

Peoples Gas also described how it intended to generate reports from the IVOS system.<sup>85</sup> This has taken longer than Peoples Gas anticipated.<sup>86</sup> Therefore, Peoples Gas generated a procedure and prepared reports from a separate system dedicated to collecting root cause information. SIG (System Integrity) Administrative Directive 5.00 describes the root cause program for Peoples Gas.<sup>87</sup> The purpose of the directive is:

*As part of the Damage Prevention Program, this directive details the tracking process for root causes related to damages on Peoples Gas/North Shore Gas facilities from third party contractors and damages caused by Peoples Gas/North Shore Gas crews on third party facilities. The directive details the start to finish processes for obtaining root cause data and efforts to utilize the data for improvement of the Damage Prevention Program through internal and external*

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<sup>84</sup> Response to Data Request #358.

<sup>85</sup> Response to Data Request #359.

<sup>86</sup> Telephone interview, January 22, 2010.

<sup>87</sup> Updated response to Data Request #441.

*educational programs along with comparison of metrics within the industry. The directive addresses Common Ground Alliance (CGA) best practices 4-16, 8-9, 9-2, 9-14, 9-18, 9-20, and 9-21.*

Peoples Gas also provided the performance report for 2009.<sup>88</sup> It shows the number of damages by each of the 11 listed root causes, missed mark locates by individual, damages to Peoples Gas' facilities by individual contractor, on-time and same-day locates, and other data such as the number of boring inspections performed.

In April 2010, Peoples Gas provided its performance report for the first quarter of 2010.<sup>89</sup> In May 2010, Liberty reviewed the report in detail with Peoples Gas.<sup>90</sup> Peoples Gas and Liberty discussed the importance of data collection and analysis in excavation-damage prevention programs to monitor and improve performance. With accurate and comprehensive data, Peoples Gas should be able to determine what type of events caused damages and then work with excavators, the one-call center, the public, and municipal employees to focus on areas that will prevent damages. Liberty confirmed that Peoples Gas has established an excellent data collection process. Liberty also reviewed an updated SIG (System Integrity) Administrative Directive that details the tracking process for root causes related to damages on PGL facilities. This directive sets out the start-to-finish processes for obtaining root cause data and using the data for improvement of the Damage Prevention Program through internal and external educational programs.

Liberty concluded that Peoples Gas met the intent of this recommendation and considers it verified and closed.

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<sup>88</sup> Updated responses to Data Requests #425 and #441.

<sup>89</sup> Response to Data Request #486.

<sup>90</sup> Interview #172, May 17, 2010.

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**Recommendation**

II-15

**Develop a system for tracking performance metrics for the damage prevention program.****Background**

Liberty determined that Peoples Gas did not maintain, track, and use performance measures. There are a number of performance measures in common use in the industry, including damages per mile of mains, damages per 1,000 excavations, total number of hits, and many others. Peoples Gas does not maintain any such statistics. Furthermore, the ICC requires reporting of hits to transmission systems, but not distribution systems, and Peoples does not track hits to its distribution system.

Liberty recommended that Peoples Gas develop a system for tracking performance metrics for the damage prevention program. Peoples Gas should develop a system for collecting and tracking performance metrics, including a comparison with a peer group of utilities.

Liberty also suggested that the ICC might want to consider requiring Peoples Gas to report to it all damages or probable violations of the Illinois Underground Utility Facilities Damage Prevention Act using the DIRT “root causes.” This would enable the ICC to analyze damage prevention activities and step up enforcement in certain areas.

**Peoples Gas’ Implementation Plan**

PGL has identified the following action items in order to complete this recommendation.

1. Complete survey of peer utilities
2. Determine and compile performance metrics and make decision on using those metrics that will enhance Peoples Gas’ performance in preventing damage to gas facilities. Peoples Gas will work with the ICC in developing these performance metrics.
3. Implement performance metrics.

**Verification Discussion and Conclusions**

Peoples Gas’ survey of peer utilities showed that the following were the most commonly used metrics:<sup>91</sup>

1. Ratio of # Damages and Cause
2. # of Mis-marks
3. # of hits per year
4. Underground damage investigation reports for each incident
5. Locate volume (gas/elec/both)
6. Damages (by geographic area, category, facility-gas/electric)
7. Damages to facilities by company and by contractors
8. Locator at-fault damages
9. Locator on-time performance
10. Locator second notice tracking (reason why one-call second notice was issued)

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<sup>91</sup> Response to Data Request #361.

11. Locator audits
12. ICC enforcement actions
13. # of hits per year
14. # of tickets per volume of work.

Using the survey results and other research, Peoples Gas determined that the following metrics were most common in the industry:<sup>92</sup>

- Number of mis-marks per 1000 locates
- Hits Per 1000 locate request to compare with industry
- Number of total damages and by pipe and size
- Damages per 1000 locate requests
- Damages per 1000 miles of main
- Damages per 1000 services
- Total number of locate requests and tracked by month and by category of request
- Percentage of locate request no-show to total locate requests
- Percentage of on time locates.

Peoples Gas indicated that it will discuss these and other metrics with the ICC Staff to develop an agreed upon set of performance metrics related to damage prevention for reporting purposes.

On August 5, 2009, Liberty met with Peoples Gas personnel to discuss the status of damage-prevention performance metrics. Liberty had requested a list of metrics as a follow-up to previous discussions.<sup>93</sup> Liberty noted that Peoples Gas' response was a letter dated March 31, 2009, to the ICC saying that there does not appear to be any standard list of metrics and list a handful of metrics Peoples Gas will probably start with. The letter also states that implementing the metrics would be later in the year. Peoples Gas personnel responsible for damage prevention were unaware of this response. However, the peer survey identified numerous metrics and was available in January 2009.

Peoples Gas has delayed developing a system for collecting and tracking metrics, which is an important part for any effective damage prevention program. The small number of metrics is inadequate to identify problem areas and make improvements to the damage prevention program.

Liberty met with Peoples Gas to discuss the company's damage-prevention performance metrics for mains and services.<sup>94</sup> Liberty concluded that Peoples Gas has established an excellent list of performance metrics that it can use to identify problem areas and make improvements to the damage prevention program. The PIPES Act of 2006 emphasized that an effective damage prevention program should have a process of reviewing the adequacy of performance measures regarding persons performing locating activities. Peoples Gas addresses this performance measure in its metrics. Peoples Gas hopes to work with other Illinois utilities and the ICC to establish similar metrics so there could be a statewide comparison.

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<sup>92</sup> Response to Data Request #362.

<sup>93</sup> Response to Data Request # 425

<sup>94</sup> Interview #172, May 17, 2010.

In its initial investigation, Liberty found that not having a management person with ownership for the excavation-damage prevention program was a major factor contributing to a substandard program. Finally, in August 2009, Peoples Gas assigned a permanent manager for the damage prevention program. During the short time in this new position, the manager made major accomplishments and has taken an inadequate damage prevention program to a very respectful one.

Liberty concluded that Peoples Gas met the intent of this recommendation, which Liberty considers verified and closed.

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**Recommendation**

II-16

**Bring experience and stability to the corrosion control organization.****Background**

Liberty found that the turnover among Peoples Gas' corrosion control personnel had been very high and that personnel in corrosion control were inexperienced in that area. During the course of Liberty's investigation, there were three managers in charge of corrosion control and two people in the important position of corrosion engineer. The people now in these positions did not have prior corrosion control experience. There is a high turnover among the apprentices who take corrosion readings because the position is not one that permits advancement. General Supervisors, while experienced with the company, had no special corrosion control experience or training. Changes in the Peoples Gas pension plan may result in the loss of those who do have related experience.

Liberty recommended that Peoples Gas bring experience and stability to the corrosion control organization. Peoples Gas should regard its buried gas pipes as valuable assets that it should protect from decay and damage. In this regard, Peoples Gas should upgrade the experience and knowledge of the personnel taking the cathodic protection readings. These people are currently the lowest paid and lowest skilled level of employees at Peoples Gas and are frequently moved and promoted out of this classification or assignment. Because their tenure is limited and they consider the classification as "dead end," there is little or no incentive to do much beyond the barely acceptable and wait until the company rotates or promotes them out.

The Peoples Gas needs to staff its corrosion control program with individuals who are dedicated to corrosion control. All corrosion control personnel need to have completed either specialized training or have experience in the corrosion control field. The Peoples Gas corrosion control program should have experienced leadership. The corrosion control program should have an executive champion who provides sufficient leadership to ensure success and to overcome obstacles from other organizations.

**Peoples Gas' Implementation Plan**

In its implementation plan, Peoples Gas said that it formulated a plan in November 2007 to address the stability and knowledge concerns of the Corrosion Control Group through leadership restructuring and the hiring of additional Corrosion Control Technicians to perform the function of the pipe-to-soil readings that the Operations Apprentice classification performs. This plan proceeded during the Liberty audit. As of August 18, 2008, Peoples Gas hired an additional five Corrosion Control Technicians with a minimum of a two-year technical electronics degree. There are currently eight Corrosion Control Technicians who are dedicated to ensuring the cathodic protection of the distribution system. Peoples Gas will not rotate these technicians to other departments, but will have opportunities to grow in the Corrosion Control Group. The technicians will receive in-house training from experienced staff as well as NACE certifications to enhance their development and expertise.

As of August 2008, the eight Corrosion Control Technicians were currently performing the majority of pipe-to-soil readings of mains and service pipes. They will perform all pipe-to-soil readings beginning in the 2009 calendar year.

### **Verification Discussion and Conclusions**

In September 2009, Peoples Gas indicated that it established a new corrosion control group with a manager, supervisor, and others who will be involved for the long term.<sup>95</sup> Peoples Gas gave NACE CP1 training to all corrosion control personnel who were on board at the time (all but two technicians passed). It will offer a repeat of NACE CP 1 in 2010 to the technicians who were not yet on board and the two individuals who failed. Peoples Gas may offer NACE CP2 to all technicians and staff in 2011 depending on budget constraints. Additionally, Peoples Gas anticipates that all corrosion control staff and technicians will attend the Purdue Short Course in Corrosion each year.

In its verification work in 2010, Liberty learned that Peoples Gas named a System Integrity Manager who has responsibility for damage prevention and corrosion control. The company reassigned some of this manager's other duties, such as inside service inspections. In addition, Peoples Gas expanded the corrosion group to include both a corrosion control engineer/supervisor and another engineer to handle corrective action work with both contractors and in-house resources.

The individuals who take the corrosion readings changed from Operations Apprentice (OA) to technicians, with a minimum of an Associates degree in electronics or a related field. As of February 2010, there are eight technicians assigned and there are plans to add a ninth. These technicians are non-union personnel assigned to various districts/shops to become familiar with the areas and develop stability and knowledge of their territories. Liberty interviewed all of the technicians regarding their training and ability to perform corrosion control work.<sup>96</sup> Each of the corrosion control technicians has taken and passed NACE-CP-I (National Association of Corrosion Engineers), the introductory and first course for corrosion technicians. In addition, most of the technicians have attended classes at the Purdue Short Corrosion Course and this year several will attend the Appalachian Corrosion Short Course. Plans are to have all of the technicians take and pass the intermediate NACE course, NACE CPII.

There currently is stability within the corrosion control group with the technicians and corrosion engineer/supervisor assigned permanently to corrosion. There are no real subject matter experts or a corrosion engineer with significant experience, but the training program that Peoples Gas has embarked upon should overcome this weakness in time. Thus, Liberty concluded that Peoples Gas implemented this recommendation, provided the current training program continues and that Peoples Gas maintains the full range of NACE courses and attendance at relevant short courses.

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<sup>95</sup> Interview #141, September 14, 2009.

<sup>96</sup> Interviews #164, A to H, February 2010.

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**Recommendation**

II-17

**Improve the accuracy of corrosion control readings.****Background**

Liberty found that Peoples Gas' corrosion control readings were inaccurate. Liberty performed various checks of Peoples Gas' corrosion control readings and found that the inaccurate readings ranged from 46 percent to 79 percent of the total readings taken.

Liberty recommended that Peoples Gas improve the accuracy of corrosion control readings. If apprentices are to take readings at insulators, then Peoples Gas should improve their training so that they are able to determine which side of the insulator they are reading and, if the readings are the same, they will suspect that either there is a shorted insulator or they are reading the same side.

Peoples Gas should install test stations on cathodically protected services whenever it performs work on such services, such as installing an anode or repairing a buried service valve. This will provide Peoples Gas with a more consistent and true reading of the cathodic potential and the status of the service. It should install all future steel services with either a test station or a means to take corrosion readings without using a bar on the service valve.

An independent organization, like the Compliance Monitoring Group, should monitor the accuracy of corrosion control readings. Peoples Gas should establish goals and metrics to monitor those goals regarding the accuracy of the readings.

**Peoples Gas' Implementation Plan**

In its implementation plan, Peoples Gas indicated that it is addressing the first point of the recommendation, to increase the accuracy of the pipe to soil readings, with the use of more technically proficient Corrosion Control Technicians taking the pipe-to-soil readings.

Peoples Gas also said that Technical Training & Standards (TTS) would revise the anode installation procedures to require that it install a test station and test wires on any new steel services installed or existing steel services when installing an anode. It noted that Peoples Gas rarely installs new steel services.

It addressed the third point with its internal audit group, the Compliance Monitoring Group (CMG) that reports to the General Manager of Field Support. The CMG performs a trailing audit of 15 percent of the pipe-to-soil readings taken annually and performs stand by audits of employees taking readings to ensure the understanding and adherence to the proper procedures. The CMG communicates follow-up deficiency information to the Corrosion Control Group ensure corrective actions.

**Verification Discussion and Conclusions**

Liberty discusses the hiring and use of technicians rather than apprentices under Recommendation II-16 above.

With regard to the anode installation procedures, Peoples Gas incorporated the installation of test stations at all isolated services that need additional anodes. Effective November 2009, the contractors that Peoples Gas uses to install the additional anodes will also install the test station (prior to this date a Peoples Gas crew was required to install all test stations regardless of who did the anode installation). This item will remain open until it can be verified that test stations are being installed as per the recommendation and the new procedure requirement.

In September 2009, Peoples Gas indicated that its QA/QC group performs a 10 percent sample of corrosion readings.<sup>97</sup> It believes that inconsistent readings are the result of stray currents. This is less than the 15 percent given in the implementation plan.

In June 2009, the ICC Staff assisted Liberty and performed a sample of trailing audit corrosion readings. These results showed while there was a significant improvement in the accuracy of the readings being taken there were still an above average number of readings that could not be duplicated by the trailing audit team. Additional trailing audits will be performed in other shops to determine the extent of the improvement and need for further improvement

Liberty has not completed its verification work on this recommendation. Liberty plans to:

- Audit anode installations on isolated services to determine if test stations are being installed
- Perform additional trailing audits on pipe to soil readings in the Central and South Shops
- Review QA/QC records to determine if their audits are effective and focused on testing accuracy rather than on record keeping
- Determine if additional training is necessary in order to improve corrosion control testing reading accuracy.

During the sixth quarter, Liberty interviewed all of the corrosion technicians regarding corrosion control readings.<sup>98</sup> All of the technicians have passed NACE CP I and do not appear to have problems with routine readings. Several of the technicians remarked that taking service readings with a metal bar on the valve is problematic because the reading can fluctuate depending on the amount of pressure put on the bar at the valve surface.

Liberty will review trailing audit results from the CMG group and will do some of its own trailing audits to verify that readings the corrosion technicians are taking are accurate.

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<sup>97</sup> Interview #141, September 14, 2009.

<sup>98</sup> Interviews #164, A to H, February 2010.

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**Recommendation**

II-18

**Improve the methods and timeliness of corrective actions.****Background**

Liberty found that Peoples Gas did not perform corrective actions in a timely fashion. Peoples Gas did not typically schedule corrective actions for work until 11 months after the down corrosion reading. The procedure automatically called for an anode installation, which may or may not be an effective solution. Peoples Gas did not prioritize corrective actions based on the type of facility affected. Effective corrective actions could and did exceed the 12-month window for required repairs.

Liberty recommended that Peoples Gas improve the methods and timeliness of corrective actions. The Peoples Gas method of performing corrective actions on corrosion control problems was slow and cumbersome at best, and ineffective and wasteful at worst. Peoples Gas should re-evaluate its automatic corrective action response of putting an anode on each service or main that has a low reading and possibly consider doing diagnostic testing.

Troubleshooting corrosion control problems needs to be handled by individuals and not scheduled by a computer with a “one response fits all” solution. Corrosion control problems need to be anticipated in a proactive mode rather than addressed in a reactive mode only after compliance is missed.

Peoples Gas should develop a listing of buildings of public assembly (e.g., hospitals, schools, day care centers, senior centers, churches) that have services that could fail and cause a gas release. Corrective actions for these facilities should receive priority scheduling. Peoples Gas needs to anticipate that these high consequence buildings may need additional testing and increased surveillance to either reduce the likelihood of a gas release or minimize the consequences.

**Peoples Gas’ Implementation Plan**

In its implementation plan, Peoples Gas indicated that the Corrosion Control Technicians have three major responsibilities, taking pipe-to-soil readings, diagnosing poor reads, and issuing work orders for corrective actions. Peoples Gas said that personnel experienced in techniques of troubleshooting poor reads train the Corrosion Control Technicians. The technicians will also attend NACE certification schools to enhance further their skills. The Corrosion Control Technicians will diagnose poor reads when discovered and recommend corrective action accordingly, instead of the past practice of installing anodes on all poor readings.

Peoples Gas addressed the second point in the recommendation by the engineering mapping of buildings of public assembly (e.g., hospitals, schools, day care centers, senior centers, churches, etc.) onto the company’s GIS system. The Corrosion Control Technicians will prioritize the execution of corrective action using a risk-based approach; therefore, any corrective action required in a building of public assembly will be a priority.

## Verification Discussion and Conclusions

In September 2009, Peoples Gas indicated that it is up to date taking corrosion readings and is using a contractor to place anodes whenever diagnostics indicate that is the needed action.<sup>99</sup> Peoples Gas said that anode jobs are now taking about one to one and one-half months after the diagnostics.<sup>100</sup>

Peoples Gas indicated that the contractor could install test leads when placing anodes instead of having a Peoples Gas crew do that work.

Peoples Gas personnel hold periodic meetings to review down corrosion readings at buildings of public assembly to highlight the importance and priority for these sites. They schedule troubleshooting immediately for these jobs and ensure that the contractors put them on the top of their respective lists.

With regard to “personnel experienced in techniques of troubleshooting poor reads train the Corrosion Control Technicians,” Liberty does not believe that the Peoples Gas has sufficiently trained personnel to handle all of the necessary diagnostic requirements and still needs to either rely on outside consultants or hire a well-qualified individual with many years of corrosion control experience.

Peoples Gas performed the actions in its implementation plan with regard to newly discovered deficient corrosion control jobs. For older jobs, there still seems to be some problems in solving and diagnosing the problem.

In February 2010, Liberty reviewed the current overdue and late corrective action (CA) report and recent corrosion control records.<sup>101</sup> In addition, Peoples Gas established a Gas Operations Key Performance Indicator (KPI) goal to reduce corrosion trouble shooting over one year to zero for 2009. It did not meet this goal but significantly reduced corrosion trouble shooting. The time span for routine trouble shooting jobs requiring additional anodes or mitigation of shorts have been significantly shortened by using a combination of in-house resources and contractors. In some situations, Peoples Gas completed the CA in as little as three months. In addition, Peoples Gas gives priority to corrective actions at buildings of public assembly (i.e., churches, schools, hospitals, day care centers, and old age homes). These changes have affected significantly the CA backlog and very few jobs now carry over past 12 months. Peoples Gas still is having problems designing and installing the corrective action for severe stray current jobs. It is addressing many of these by changing the pipe to plastic or installing rectifiers to overcome the stray current.

Liberty will perform more follow-up in 2010 to verify that Peoples Gas has fully implemented this recommendation.

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<sup>99</sup> Interview #141, September 14, 2009.

<sup>100</sup> Data Request 431 (received from ICC inspector).

<sup>101</sup> E-mails from ICC inspectors regarding February 2010 corrosion records audit at Peoples Gas.

Liberty's review of the outstanding corrective actions in early 2010 showed that Peoples Gas is mostly current.<sup>102</sup> Peoples Gas is working several long-term corrective actions from before the start of Liberty's audit. Most of these jobs are stray current problems and Peoples Gas has tried several corrective actions to resolve the issues, including recording readings, having a consultant review the data, and segmenting the corrosion family. Peoples Gas is now evaluating if replacing some of the family with plastic main will solve the problem (in some situations replacing mains with plastic just move the problem to another area).

Based on the current schedule of corrective actions and the use of a contractor under the direction of an engineer in corrosion control, Liberty concluded that Peoples Gas implemented this recommendation. To complete its verification work, Liberty has requested the latest open corrective action report and will review it for timeliness.

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<sup>102</sup> Responses to Data Requests #431 and #502, and Interview #171.

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**Recommendation**

II-19

**Evaluate atmospheric corrosion inspection practices.****Background**

Liberty discovered problems with Peoples Gas' atmospheric corrosion inspections. Peoples Gas' O&M manual required quarterly bridge and tunnel inspections. However, an inspection crew was not familiar with inspection sites and did not have required operator qualifications to perform the inspections.

Liberty recommended that Peoples Gas evaluate atmospheric corrosion inspection practices. Peoples Gas must re-evaluate its atmospheric and Bridge and Tunnel inspections to ensure that it inspects all areas properly. Air-ground interfaces are particularly prone to corrosion. In addition, Peoples Gas should include an improved engineering standard for specifying how this interface is to be protected from corrosion and improve the training of personnel performing atmospheric and Bridge and Tunnel inspections so that they are aware of the critical nature of the air-soil (or water for tunnels) interface.

Peoples Gas should retrain its personnel doing atmospheric and Bridge and Tunnel inspections. Additionally, all atmospheric and Bridge and Tunnel inspections should be re-performed within three months of the retraining. New engineering standards for handling the air-ground interface should be available for future installations and for retrofitting of existing locations

**Peoples Gas' Implementation Plan**

In its implementation plan, Peoples Gas indicated that it would revise the O&M plan section for bridge and tunnel inspections. The revision will consist of two categories, atmospheric and patrolling inspections. The corrosion control group will be responsible for all atmospheric inspections on bridges and tunnels that it will perform on a three-year basis (not exceeding 39 months) in accordance with standard 192.481, and the district shop crews will perform the patrolling inspections quarterly in accordance with standard 192.721. Technical Training & Standards will investigate engineering standards for air-soil (or water for tunnels) interfaces related to bridge and tunnel pipelines and improve the training of CCG personnel performing these atmospheric inspections.

**Verification Discussion and Conclusions**

In September 2009, Peoples Gas discussed with Liberty the training changes and the mandating of quarterly Bridge and Tunnel and atmospheric corrosion surveys. The new training and procedures highlight the importance of the soil/air/water interface and direct that personnel inspect this area carefully.<sup>103</sup>

Liberty found that Peoples Gas' personnel do not completely understand this recommendation and the problem on which Liberty formed it. Liberty will:

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<sup>103</sup> Interview #141, September 14, 2009.

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- Provide additional guidance on how an effective atmospheric corrosion program needs to be structured
  - Determine if Peoples Gas knows all of the locations (besides outside meter sets) that must be inspected for atmospheric corrosion
  - Assist Peoples Gas in understanding the differences between the 3-year atmospheric corrosion inspection and the quarterly bridge and tunnel inspections.

Liberty provided additional guidance to the corrosion group regarding the importance of the soil-air and soil-water (for flooded tunnels) interfaces with regard to atmospheric corrosion. Since the start of the audit, the newly trained and dedicated corrosion technicians have taken over responsibility for all 3-year atmospheric corrosion inspections except for service lines. Peoples Gas trained the corrosion technicians in the new procedures, which they are now using in the inspections. Peoples Gas has also written new procedures for inspecting vaults and other areas of atmospheric corrosion such as in bridge abutments.<sup>104</sup>

Liberty and the ICC have been discussing expanding the scope of this recommendation regarding dewatering and inspecting flooded tunnels on a 10-year interval for coating damage and corrosion. This would be in addition to the quarterly inspections by shop personnel and the 3-year atmospheric inspection of the main in the shafts leading down to the tunnel.

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<sup>104</sup> Response to Data Request #474.

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**Recommendation**

II-20

**Test casings to ensure electrical isolation from the carrier pipe.****Background**

It was not clear to Liberty that Peoples Gas completely tests for electrical isolation of casings. Peoples Gas did not perform tests to specifically determine if casings are electrically isolated from the carrier pipe per §192.467. It used annual pipe test data to determine if there is a shorted condition. This is a common practice and typically, a down reading on the carrier pipe indicates an electrical contact between the carrier pipe and the casing. Although the code is not clear that special electrical isolation tests must be performed, the low level of accuracy of annual corrosion testing at Peoples Gas raises the concern that there may be shorted casings that, if not addressed, could lead to future leaks and failures. Peoples Gas did not believe it has any shorted casings, although Liberty did not see any basis for that belief.

Liberty recommended that Peoples Gas test casings to ensure electrical isolation from the carrier pipe. Peoples Gas should ensure that all of its casings are electrically isolated from the carrier pipe. Peoples Gas should give the responsibility to corrosion technicians to test all of the casings in Peoples Gas system to ensure that they are electrically isolated from the carrier pipe as required by the code.

**Peoples Gas' Implementation Plan**

In its implementation plan, Peoples Gas indicated that it would assign a casing project to an engineer to test and ensure isolation of carrier pipe from casing pipe. The project will consist of steps of ensuring the identification of all casings within the transmission and distribution systems, identification of all test points on the casings and carrier piping, using a risk-based approach to prioritize workload and coordinating remedial actions. This will be an ongoing project to start in January 2009 and have a five-year life cycle until 2014. There are many unknowns associated with this project pertaining to the identification of test stations, casing shorts and corrective actions. In addition, the costs associated with the project are difficult to budget because of these unknowns.

**Verification Discussion and Conclusions**

Peoples Gas said that in June 2009 it hired an individual to start and take charge of locating, assessing the needs of test leads, and testing of casings.<sup>105</sup> This was later than the implementation plan target date of March 31, 2009. To date the company believes it has located about 70 percent of the casings, is not sure which still exist and which have test leads, and has only tested seven or eight. At least two of these were shorted, and thus not isolated.

Liberty will:

- Continue to follow-up to determine if Peoples Gas is testing and remediating casing properly

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<sup>105</sup> Interview #141, September 14, 2009.

- Attempt to determine if Peoples Gas has located all of the casings in order to install test leads and perform the required testing.

Liberty recommended and Peoples Gas has started to implement a program to locate and test all casings for electrical isolation between the carrier pipe and the casing as required under both ICC and US DOT regulations. As of May 2010, Peoples Gas believes it has identified all of the casings on their distribution and transmission systems. It identified 110 casings that have electrical connections to both the carrier pipe and casing, and have tested them. Peoples Gas has written a new procedure to determine electrical isolation using the AGA approved Panhandle Eastern B method. Of these initial 110 casings (which are about ½ of all casings), it found 4 that appear not to be electrically isolated. An engineer assigned to the project is providing guidance so that electrical connections can be made on the remaining identified casings to run the electrical isolation test.<sup>106</sup>

Liberty provided Peoples Gas with additional resources that have guidance on other testing methods for electrical isolation that do not need connections to the carrier pipe and casing, and thus could be tested without having to excavate each casing and main. Such testing methods use new technology (and will be discussed in the best practices recommendation, II-25). Peoples Gas expects to test and identify all of the remaining casings before the end of the year and start remediation and mitigation efforts on casing that are not electrically isolated. Peoples Gas has indicated that they will be performing the necessary remediation on a risk-based priority taking consequences of a leak or a rupture into account. Liberty has provided Peoples Gas with some insights on how other utilities have eliminated electrical paths between the casing and the carrier pipe.

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<sup>106</sup> Response to Data Request #498.

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**Recommendation**

II-21

**Improve organizational communications.****Background**

Liberty concluded that corrosion control personnel did not interchange information with other areas of the company. An example was that corrosion control and leak management do not share information, so corrosion control has no knowledge of where leaks are occurring and leak management does not know where there are corrosion issues.

Liberty recommended that Peoples Gas improve organizational communications. The corrosion control group within Peoples Gas needs to be integrated within the Peoples Gas organization so that information flows freely and decisions are made with all of the facts with regard to corrosion (e.g., leaks, main and service replacements, pipe storage).

**Peoples Gas' Implementation Plan**

In its implementation plan, Peoples Gas said that in 2007, the Corrosion Control Group (CCG) was restructured to become part of operations. The CCG Senior Engineer is in constant communication with the operational managers and district shop supervisors to identify and resolve corrosion related issues where information pertaining to leaks, main replacements, and service replacements can be discussed. The CCG generates a weekly report that specifies the corrosion related corrective actions that are pending within the district shops. Shop Managers review leak ticket information and communicate any corrosion leak related information to CCG.

Peoples Gas said that it would copy the weekly report to Liberty for the first quarter review by December 31, 2008. In addition, by February 28, 2009, shop management will review leak ticket and work ticket information for corrosion related issues on cathodically protected steel.

**Verification Discussion and Conclusions**

In September 2009, Peoples Gas said that based on the periodic spreadsheet transmissions and meetings with shops personnel, communications between corrosion control and rest of gas operations is good and not in need of improvement.<sup>107</sup> Peoples Gas said that there are additional interactions on almost a daily basis between various members of corrosion control and operations on an as needed basis.

Liberty asked about the last pipe coating condition report that corrosion control supervision had reviewed, but they do not see them and were not sure where they were. Liberty also asked about how corrosion control is involved in cast iron graphitization. Corrosion control supervision said that it is handled by the training center and they are not involved at all. These matters show continued weakness is communications.

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<sup>107</sup> Interview #141, September 14, 2009.

Peoples Gas did not perform the actions in its implementation plan. Liberty believes that communication between the operations area and the corrosion control group still needs strengthening and become more formalized.

Liberty will:

- Continue to follow up to determine if Peoples the corrosion group is actively interacting with the operations area and that knowledge and data are being exchanged on the condition of mains and services
- Determine if Peoples Gas has formalized the commutations between the groups

Since the beginning of Liberty's audit, the Corrosion Control group has significantly increased the interaction with shop personnel. The corrosion engineer logs and monitors the progress on corrosion jobs that require any corrective action. Peoples Gas assigned an engineer from corrosion to work with the contractors installing anodes for corrective actions. More recently, with the full incorporation of the corrosion group into Gas Operations, the communications has become more two way, i.e. shop personnel inform corrosion control of coating and corrosion issues they find during their normal duties such as adding services, doing tie-ins and making leak repairs.<sup>108</sup>

The two-way communication is what Liberty believed was missing and it is now taking place regardless of which individuals are in various shop locations. Based on this improvement, Liberty considers this recommendation verified and closed.

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<sup>108</sup> Interview #171, May 4, 2010.

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**Recommendation**

II-22

**Improve corrosion control training.****Background**

Liberty concluded that training given to those taking corrosion readings and their supervisors did not effectively transfer to the field. Liberty observed training and found it to be thorough and well presented. However, the field observations showed that mistakes were made on matters specifically covered by the training.

Liberty recommended that Peoples Gas improve corrosion control training. Peoples Gas' training did not transfer to actions in the field. Peoples Gas needs to make changes to the content, delivery, frequency, or methods of training to overcome this fault. Peoples Gas should monitor field activities to feed back to training for improvements. Continual training of corrosion control personnel needs to be undertaken. A method to determine the effectiveness of the training is through the performance of trailing audits on corrosion readings conducted within 4 weeks of the original reading. Significant differences between the two sets of readings could reflect on the effectiveness of training.

**Peoples Gas' Implementation Plan**

In its implementation plan, Peoples Gas said that this recommendation is partially addressed with the transfer of the pipe-to-soil workload to the Corrosion Control Technician classification. In addition, during the time period parallel with the Liberty Consulting audit the Operator Qualification requirements for pipe-to-soil readings was enhanced to include the learning of theory in the classroom, a practical evaluation, and five-day field training/evaluation (classroom/practical re-qualification is required annually). Corrosion Control Technicians will also be required to attend various NACE courses and receive their NACE CP1 Certification.

To address the second point in this recommendation, the Compliance Monitoring Group (CMG) has been performing trailing audits since 2006 on 15 percent of all pipe-to-soil readings. Audit results are analyzed by the CMG, CCG, and TTS to determine problem areas and adjust training accordingly to ensure employees are proficient in corrosion related activities.

**Verification Discussion and Conclusions**

Peoples Gas said that in 2007, the training center re-wrote the corrosion-control training program for apprentices to include a full day of training, which included a practical test and then 5 days of teamed with a certified individual or a trainer.<sup>109</sup> Since the audit recommendations were submitted, Peoples Gas instituted the use of trained technicians to do corrosion control readings and diagnostics and has implemented the OQ training and NACE CP1 training. At the time of the training, all hired management and technical staff were required to take the NACE course. All but two technicians passed the course. Peoples plans to give the course again in 2010 to cover the new hires and the two technicians who failed. Because of budget issues, Peoples Gas

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<sup>109</sup> Interview #141, September 14, 2009.

will not give NACE CP2 until 2011 at the earliest, if at all. Peoples Gas also sends its corrosion control staff to the Purdue Corrosion Short Course every February.

As mentioned under Recommendation II-16, Peoples Gas hired and is training all of its technicians who take corrosion control readings. Training courses provide valuable tips on trouble shooting and using the latest and best equipment. By routinely attending these courses, the technicians will be able to develop contacts with other industry professionals who may occasionally be called on to give advice on some troublesome problem. They will also be able to interact with some the noted experts in the field and discuss stray currents or other difficult problems.

Peoples Gas is also proposing to continue to offer (and require passing) of the next NACE course, NACE CP II, which is an intermediate course needed to progress to becoming a NACE certified technologist.

The technicians do not have technical support from an engineer in the office. The main area that the technicians were having problems with was stray current issues, which are difficult even for the most trained and fully qualified professionals. Many professionals must use a variety of methods and or techniques to overcome stray current problems, similar to the ones Peoples Gas employs (e.g., replace with plastic, add a rectifier, add a bond, or add linear anodes to protect the pipe from strays coming off the pipe).

Peoples Gas met the commitments in its implementation plan. Liberty considers this recommendation implemented and verified provided training from NACE and other outside providers continues.

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**Recommendation**

II-23

**Improve corrosion control record keeping.****Background**

Liberty found that Peoples Gas' corrosion control record keeping was inadequate and deficient. The systems used to keep corrosion records were not user friendly and were not all up to date. It is impossible or at least very difficult to investigate or research an issue using the current method of record keeping.

Liberty recommended that Peoples Gas improve corrosion control record keeping. The Peoples Gas corrosion control program must be given tools with which it can perform its function. These tools include computer programs to track and measure performance, equipment to perform its duties, and training to improve the caliber and knowledge base of its members. The records that Peoples Gas uses for corrosion control are disjointed and not functional with regard to determining what corrective actions have been performed, and where they are performed and need to be improved. The record keeping quality of the corrosion control was significantly below what is expected of an urban utility with over 500,000 customers.

Peoples Gas needs to investigate whether a new dedicated corrosion-control database computer system can be installed to track, record, and notify corrosion control personnel when readings are overdue, when segments are near falling below code-mandated readings, and to track corrective actions. Such a new system must have the history of each segment loaded so that there is historic data that can be used to track current conditions.

**Peoples Gas' Implementation Plan**

In its implementation plan, Peoples Gas said that a new record keeping system titled the Work Asset Management (WAM) system is currently being developed and will go live in 2009 replacing legacy systems. The Corrosion Control Group (CCG) will work with the WAM team to design a system to rectify challenges faced by users of the current IT systems involving corrosion related record keeping. The WAM system will maintain all corrosion related data for the pipelines, store the data for the pipeline, allow scheduling corrective action work, track the corrective action work performed and alert to compliance deadlines.

**Verification Discussion and Conclusions**

Peoples Gas has not met its implementation plan because of the slow down in implementing the WAMS project.<sup>110</sup> Peoples Gas now has a schedule for the start of implementation in 2010.

Liberty believes that the current method of storing data is unacceptable. Liberty will:

- Determine if the proposed WAM system is going to be implemented
- Determine if the records stored on WAM are sufficient and that all of the available records were migrated into the new system.

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<sup>110</sup> Interview #141, September 14, 2009.

The new record keeping system, WAM went live in corrosion at the end of the first quarter of 2010. This system contains all of the records previously held on the old mainframe, Navigate, and FIRS. One glitch was because three systems of records were loaded, WAM has some duplicate records that were on more than one system prior to loading. WAM is programmed to retain corrosion records for the life of the pipe, which is a requirement for some mains per ICC and US DOT regulations. Another glitch in the software is whenever a corrective action is completed, the database automatically calculates a new test date off the completion data, and not the date the down reading was taken. Peoples Gas expects to correct this problem in the very near future, and until it is, the corrosion engineer is keeping separate records to track periodic testing requirements. The Navigate system will only be used for the map interface and all official records will be kept on WAM.<sup>111</sup>

Based on being able query corrosion records on one system for multiple years (typically 10 years), this recommendation is now considered verified and closed.

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<sup>111</sup> Response to Data Request #500, and Interview #171.

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**Recommendation**

II-24

**Improve pipe storage practices.****Background**

Liberty found that Peoples Gas did not comply with its own requirements for the storage of coated pipe. The Peoples Gas O & M Manual specifies that all fusion bonded epoxy coated pipe will be either used within two years of receipt or removed from direct sunlight to protect the coating.

Liberty recommended that Peoples Gas improve pipe storage practices. Peoples Gas should remove and scrap or recoat all of the FBE coated pipe in the pipe yard that is older than two years. If it cannot be determined what date the pipe was received, then that pipe must also be recoated or scrapped. Peoples Gas should start logging in all FBE coated pipe and placing it under a tarp or paint it with white latex paint prior to being stored in sunlight.

**Peoples Gas' Implementation Plan**

In its implementation plan, Peoples Gas said that about \$300,000 worth of pipe is in stock, and is greater than 2 years old. Most of this pipe is needed, and should not be scrapped. Replacing this pipe would cost about \$400,000. A solution for protecting coated pipe in the future and inventory tracking will be developed.

Peoples Gas made the following time commitments:

- Cover all Steel Coated Pipe – 10/31/08
- Recoat all pipe greater than 2 years old – 4/30/09
- Develop plan to protect coated pipe – 12/31/08
- Implement coated pipe protection plan – 6/30/09

**Verification Discussion and Conclusions**

In September 2009, Peoples Gas said that it rented a warehouse to store pipe ordered for the Division Street facility.<sup>112</sup> During a subsequent inspection of the North Shop, it was found that coated pipe without a coating date (the date wore off due to weathering, i.e. outside storage) was on hand for use.

Liberty found that Peoples Gas did not meet its commitments. Liberty will:

- If pipe stored in each of the operating shop areas meets the storage requirements per the O&M Requirements.
- Determine if coated steel pipe is stored at any other Peoples Gas location.
- Attempt to determine if Peoples Gas removed the substandard pipe in the main storeroom from the system and not used.

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<sup>112</sup> Interview #141, September 14, 2009.

Liberty has interviewed and obtained documentation showing that Peoples Gas has implemented a program to store all FBE coated pipe either inside or under tarps so that it may be used for more than two years.<sup>113</sup> Peoples Gas indicated that all the old pipe that was stored outside without protection was scrapped either by selling for scrap or sent for recoating. Peoples Gas has rented an off site warehouse to store FBE coated pipe and has instituted other process changes to eliminate pipe being stored outside. Below is the new process that covers both the main storeroom at Division Street and all district/shop locations.

1. *Coated Steel Pipe inventory has been centralized at the warehouse on Elston Ave.*
2. *Coated pipe stored outside at the Elston Warehouse is covered with tarps.*
3. *All coated steel pipe in stored outdoors and uncovered for an undocumented period, or in excess of 2 years, has been scrapped or disposed.*
4. *New pipe was purchased to replace coated steel pipe stored outdoors and uncovered for an undocumented period, or in excess of 2 years.*
5. *Emergency Stock Coated Steel Pipe that remains at the shops has been moved indoors, or is covered with tarps.*

*We will have our Warehouse Supervisor perform monthly audits of our coated steel pipe inventory at all storage locations, including district shop locations, to confirm that pipe is covered. This person will also monitor pipe that may have been staged for a project, or returned from a project.*

Liberty considers this recommendation implemented and will check on a district/shop location in the near future.

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<sup>113</sup> Response to Data Request # 475

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**Recommendation**

II-25

**Demonstrate implementation of best practices.****Background**

Liberty found that Peoples Gas had not implemented industry best practices with respect to corrosion control. Liberty recommended that Peoples Gas provide demonstrable evidence to the ICC that it has implemented AGA best practices with regard to corrosion control or provide convincing argument of why it should not implement certain of these practices.

**Peoples Gas' Implementation Plan**

In its implementation plan, Peoples Gas said that the Special Projects Field Service Manager of the Corrosion Control Group (CCG) is an active member of the AGA Corrosion Control Committee. An AGA best practices document does not exist, but there is documentation on the corrosion control related practices of AGA member utilities in a round table format. A gap analysis document of these practices as compared to Peoples Gas' corrosion control practices will be created by Huron Consulting and AGA member corrosion-control practices will be evaluated by corrosion control staff for implementation. The CCG will create documentation as to the rational of practice implementation or rational for not implementing. The documentation, without AGA member utility information (names), will be presented to the ICC.

- Huron Consulting and PGL evaluation of corrosion control practices of AGA members – 11/30/08
- Assess Huron Consulting AGA corrosion-control practice gap-analysis report and determine the practices to implement. In addition, supply supporting rational for practices that are not implemented – 2/28/09
- Provide Implementation plan of agreed upon best practices and produce documentation to ICC – 3/31/09.

**Verification Discussion and Conclusions**

Liberty will:

- Determine where the required documentation on the implementation of best practices resides
- Determine what steps, if any, Peoples Gas took to find better methods of doing things and if they implemented them.

Peoples Gas demonstrated that it has or is going to implement many of the best practices that other gas distribution companies currently use.<sup>114</sup> These practices include using a well-trained and dedicated work force to perform routine corrosion control duties, such as taking periodic readings, performing diagnostic testing on mains and services that do not meet minimum code requirements, and being aware of issues and potential problems relating to cathodic protection. The one area that Peoples Gas has not implemented is in introducing new technology to assist the corrosion technicians in performing their day-to-day and special testing duties. Peoples Gas will

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<sup>114</sup> Response to Data Request # 476, a comparison of Peoples Gas and Best Practices by Huron Consulting

be looking at this deficiency during the next AGA Corrosion Control Committee meeting in May 2010 and is sending several technicians to short course that will provide some insights into new technologies and how they can be used (Appalachian Corrosion Short Course at Morgantown, WV).

This item will remain open until Liberty can verify that Peoples Gas is looking at adopting new technologies in testing and with diagnostics.

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**Recommendation**

III-1

**Determine the resources necessary to ensure all annual valve inspections are accomplished within scheduled timeframes.**

**Background**

Peoples' Gas Operations Section (GOS) personnel conduct over 4,000 annual valve inspections (located on main lines or on feeder lines) for field identification, accessibility, and operability. Distribution field crews perform the remaining 6,000 valve inspections. GOS also annually inspects 113 Security Valves (slam shut), conducting a maintenance diagnostic test, 39 remote-operated valves (ROVs), and 13 Meter Runs.<sup>115</sup>

To accomplish this work in 1999, GOS had 34 employees (Manager, General Supervisor, Engineer, Technician, 6 Supervisors and 24 union personnel). By 2007, due in part to work rule changes, Peoples Gas reduced the GOS workforce to 22 employees (6 management and 16 union personnel). Peoples Gas reported that overdue valve inspections numbered 13, 38, and 8 for the years 2005 through 2007, respectively.<sup>116</sup>

Liberty concluded that the GOS did not appear to have adequate resources to ensure it meets its annual inspection schedules. Liberty also concluded that Peoples Gas needed to determine its workforce needs based on work activities, both for GOS valve inspections, and for valve inspections performed by distribution operations field forces.

Liberty recommended that Peoples Gas should complete the assessment of workforce needs and make the appropriate adjustments to its field forces.

**Peoples Gas' Implementation Plan**

Peoples Gas stated that it believes this is not a resource issue. It claims the overdue valve inspection information provided in the data request included valves that were completed on the same day the inspection was due. Peoples Gas indicated only 6 overdue valve inspections occurred in 2006 and 1 in 2007, compared to the 38 and 7 it reported. Since 2007, the company has been closely monitoring all inspections and has been reporting all overdue inspections to the ICC on a monthly basis. In addition, Peoples Gas created Centralized Planning, to schedule, route, and monitor inspections. Centralized Planning's focus will be to ensure Peoples Gas completes all inspections on time.

During Liberty's discussions with Centralized Planning, Peoples Gas indicated that during 2008 it scheduled valve inspections for the North and Central Districts.<sup>117</sup> During 2009, it also plans to schedule valve inspections for the South District.

To address Liberty's recommendation, Peoples Gas planned specific action items as follows.

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<sup>115</sup> Interviews Gas Operations Section, August 15, 2007, and November 15, 2007. Meter Runs are located at Gate Stations and at special meter locations of large volume customers.

<sup>116</sup> Response to Data Request #197.

<sup>117</sup> Interview #107, January 20, 2009.

- Centralized Planning Group to Monitor Inspections by October 1, 2008.
- Centralized Planning Group to Schedule and Route Inspections for North and Central Shop by October 1, 2008.
- Peoples Gas will create a monthly and YTD valve inspection report by February 28, 2009.
- Centralized Planning Group to Schedule and Route all Inspections for the Company by spring 2010 (March 1, 2010 - WAMS).

### Verification Discussion and Conclusions

Liberty determined that Peoples Gas had assigned two engineers in its Centralized Planning Section to work with the North and Central Districts during 2008 to schedule valve inspections.<sup>118</sup> The engineers explained their scheduling process, valve inspection tracking, and how they contact field personnel to ensure the Districts completed its valve inspections on schedule. They schedule inspections by square mile grid and identify them on Peoples Gas Navigate system. Peoples Gas provided a spreadsheet containing the number and location of valves it scheduled for inspection, as well as their inspection dates for the last 6 months of 2008.<sup>119</sup> It scheduled and completed 5,095 valve inspections in the last six months of 2008.

Liberty will continue to monitor Peoples Gas' implementation of its valve inspection reports, its planned implementation of valve inspection scheduling for the South District (in addition to the North and Central Districts) during 2009, and inspections performed by GOS of its network valves.

During the third quarter, Liberty met with Peoples Gas' Centralized Planning Section<sup>120</sup> and evaluated the group's work in scheduling and tracking valve inspections and in ensuring Peoples Gas' crews perform valve inspections on time. Peoples Gas schedules its valve inspections by the square mile in which the valve exists. At the beginning of the year, valve inspections are identified by the month the inspections are due and are provided to crews/employees 30 days in advance of the inspection due date. They print a weekly report of valve inspections due within 30 days including those valves previously scheduled and still not inspected. These are reviewed by Centralized Planning Section personnel weekly to identify those due within two weeks and discussed with crews scheduled to perform the inspections to ensure due dates are met. Liberty did not note any inspection violations. The process appears adequate to ensure inspections due dates are in compliance. Liberty considers this recommendation verified and closed.

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<sup>118</sup> Interview #107, January 20, 2009.

<sup>119</sup> Response to Data Request # 315

<sup>120</sup> Interview #132, August 5, 2009.

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**Recommendation**

III-2

**Develop a means to track and report histories of valve inspections to identify valves that cause continual problems, and to focus the inspections and maintenance on those problems.**

**Background**

Navigant Consulting reported that Peoples Gas had not completed its 2005 valve inspection record audit. The Navigant report also indicated that Peoples Gas needed to create a valve-inspection history report to track valves that cause continual problems so that GOS might focus its inspections and maintenance. Peoples Gas has not yet implemented a system to track valve inspection and maintenance histories.

Liberty recommended that Peoples Gas develop a means to track and report histories of valve inspections to identify valves that cause continual problems, and to focus the inspections and maintenance on those problems.

**Peoples Gas' Implementation Plan**

In its implementation plan, Peoples Gas said that with the implementation of WAM, the system would capture a complete history of maintenance on valves with reporting capabilities to satisfy this recommendation.

**Verification Discussion and Conclusions**

During the sixth quarter, Liberty evaluated the Peoples Gas' progress in developing a means to track and react to valve inspection histories. Peoples Gas reported that when its Work and Asset Management system was implemented it would contain this capability.<sup>121</sup> WAM Phase 1 and 2 Go Live took place during the week of March 25, 2010, for scheduling, maintenance, and construction. All WAM applications other than the Mobile applications are now ongoing. This includes:

- Capturing a complete history of maintenance on valves
- Reporting capabilities has had some defects<sup>122</sup>, reporting on valves is still pending
- Focusing inspections and maintenance on those valves with continual problems is now the responsibility of the Business Performance and Metrics group. They will be periodically reviewing valve maintenance histories and focusing inspections and maintenance actions on valves with recurring problems.

Liberty determined that not all WAM capabilities with valves are fully functional; Liberty will revisit this recommendation, time permitting, in the remaining audit implementation period.

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<sup>121</sup> Response to Data Request # 488

<sup>122</sup> Response to Data Request # 492

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**Recommendation**

III-3

**Resolve interface problems with the chartless recorders.**

To take full advantage of chartless technology and to ensure there are no operating problems at its pressure regulation stations, Peoples Gas needs to identify and resolve the interface issues.

**Background**

Peoples Gas uses chartless electronic data recorders (CDRs) installed inside vaults to compile input pressure, output pressure, case temperature, and battery voltage. The CDRs replaced the older pressure recording charts.<sup>123</sup>

Prior to 2007, Peoples Gas converted its pressure-recording charts in regulator vaults to chartless electronic data recorders. This streamlined pressure verification activities. However, Liberty's inspection during 2007 identified problems (downloading data from the chartless recorders) with the computer hardware and software interface.<sup>124</sup> A follow-up inspection determined that Peoples Gas was still experiencing problems associated with data from the recorders being unable to plot in output report formats

Liberty concluded that Peoples Gas needed to identify and resolve the interface issues.

**Peoples Gas' Implementation Plan**

Peoples Gas indicated that it installed software revisions in computers and portable data collectors (PDCs) in May 2007, and that this resolved incompatibilities between PDCs and its computers. Peoples' Gas Operations Section (GOS) was available to demonstrate that previous interface issues have been resolved.

**Verification Discussion and Conclusions**

Liberty met with Peoples Gas and GOS demonstrated its data interface on its computer.<sup>125</sup> Liberty selected four district regulator stations and GOS brought up inspection data for those stations. GOS demonstrated that its chartless data, recorded for each station, matched the data documented by the GOS crew performing a regulator inspection. Liberty will continue to evaluate some additional regulator stations later in the year to verify no additional PDC and computer interface problems exist.

During the third quarter of 2009, Liberty met with Peoples Gas' Gas Operations Section (GOS)<sup>126</sup> to verify that no additional problems exist on the interface between portable data collectors and GOS regulator-station computer data files. Liberty selected four district regulator stations and GOS brought up inspection data for those stations. GOS was able to demonstrate that its current chartless data, recorded for each station, matched the data documented by the GOS crew performing a regulator inspection. Peoples Gas captured data on one station, vault 84,

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<sup>123</sup> Response to Data Request #118, and Inspection conducted November 15, 2007.

<sup>124</sup> Inspections Gas Operations Section November 15, 2007, and May 14, 2008.

<sup>125</sup> Interview, January 22, 2009.

<sup>126</sup> Interview #132, August 5, 2009.

after October 2008. Other station vaults had captured data prior to October 2008. Peoples Gas has now corrected this issue, and is capturing data as intended. Liberty considers this recommendation verified and closed.

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## Recommendation

III-4

**Analyze the gas system to determine sampling sites that will ensure proper concentrations of odorant reaches all parts of the system.**

## Background

Liberty found that Peoples Gas' program of odorant monitoring did not focus sufficient attention to testing at the extremities of the system. Peoples Gas' odorant monitoring program was limited to four points at which it tests weekly to confirm proper concentrations of odorant, using calibrated odorometers in the middle of the system and no testing at the extremities. Additionally, every two weeks Peoples' employees performed sniff tests by checking for gas odor over 21 designated areas. This was not sufficient to test the extremities of its system.

It is common industry practice to perform odorant tests at the extremities of the system to confirm the gas contains odorant. The guide material presented in the Gas Piping Technology Committees (GPTC) Guide for Gas Transmission and Distribution Piping Systems recommends that: "sampling sites should be selected to ensure that **all** [emphasis added] gas within the piping system contains the required odorant concentration."

Liberty recommended that Peoples Gas analyze the gas system to determine sampling sites that will ensure proper concentrations of odorant reaches all parts of the system. Peoples Gas needs to review the locations it tests to verify its odorant levels are adequate. The locations sampled need to include adequate representation at the extremities of the system to ensure odorant levels throughout the system are at code required levels.

## Peoples Gas' Implementation Plan

In its implementation plan, Peoples Gas said it would perform an evaluation of the system and select sites from the medium-pressure and low-pressure systems that represent the extremities of the system. Peoples Gas will do this through analysis of the furthest points from the gate stations in which there is a zero flow condition. In these areas, Peoples Gas will select odorometer test sites and perform testing on a weekly basis. Peoples Gas will discontinue the practice of bi-weekly inspections through olfactory testing.

## Verification Discussion and Conclusions

Peoples Gas described the method it used to select sampling sites.<sup>127</sup> It included a software tool that traces gas supply to show all the points where the gas from one source interfaces with other supply points. The points where the two sources come together would be a zero flow point as well as the farthest point between the sources. This study resulted in the selection of eleven sampling sites for regular monitoring. In addition, Peoples Gas selected an additional nine sites based on system boundaries. Peoples Gas indicated that these 20 sites provide broad coverage of the extremities of the system and ensure the proper level of odorant is reaching the customers.

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<sup>127</sup> Response to Data Request #390.

Liberty verified that Peoples Gas applied the Stoner modeling analysis software tool, identified three feeds to the northern part of its distribution system, three feeds into the central portion of its system and two feeds from its southern part of its system.<sup>128</sup> The process located Peoples Gas' zero flow boundaries. Peoples then identified points along these boundary bands and extremities around its distribution area at 4-mile intervals, geographically bounded by its sources of gas supply, resulting in 20 locations for odorant sampling and testing. Six points are in the Central District, seven points in the South district, and seven points within the North District. Peoples Gas stated it has installed a fitting at customer piping locations at which it uses the odorater to take and odorant reading.

Peoples Gas stated that it evaluated the locations for odorant monitoring every five years based on its previous 45-year pipe replacement program. Now that it will replace its cast and ductile iron pipe within 20 years, Peoples Gas stated that this needs to be reviewed and plans to place this odorant review within an Engineering Procedure or include it as part of the 20-year replacement program Engineering Procedure.

Liberty found that the testing at the odorometer test sites engineering determined were necessary are being performed on a weekly basis by qualified Field Service personnel.<sup>129</sup>

Liberty has completed its review of the implementation of this recommendation.

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<sup>128</sup> Interview #170, May 6, 2010.

<sup>129</sup> Response to Data Request #489, and Interview #168 May 5, 2010.

**Recommendation**

III-5

**Develop a schedule and verify that personnel who perform “sniff” tests possess normal olfactory senses.**

**Background**

Liberty found that Peoples Gas did not test the olfactory senses of sniff testers. Peoples Gas employees perform sniff tests but are not tested themselves to ensure that their senses are working properly. Several factors can interfere with an individual’s sense of smell. Examples of these include smoking, foods, chewing tobacco, gum, head cold, or other health-related conditions. Peoples Gas needs to ensure it periodically checks personnel who perform “sniff” tests to verify that they possess normal olfactory senses.

Liberty recommended that Peoples Gas develop a schedule and verify that personnel who perform “sniff” tests possess normal olfactory senses. Peoples Gas’ odorant monitoring program includes regular performance of sniff tests. Peoples Gas needs to implement a program to verify periodically that those employees performing the sniff tests are qualified to do so.

**Peoples Gas’ Implementation Plan**

In its implementation plan, Peoples Gas said that it intends to expand significantly the more rigorous sampling of odorant concentrations using odorometer instruments as described in response to recommendation III-4. Peoples Gas has contracted with Huron Consulting to determine industry best practices for qualifying individuals to conduct odorometer tests that will include testing for normal olfactory senses.

**Verification Discussion and Conclusions**

Peoples Gas provided a copy of its Administrative Directive FO 4.0, issued March 1, 2010.<sup>130</sup> The directive requires monthly testing of designated work-crew members. It sets out the responsibilities, requirements, and procedures for the tests. Peoples Gas indicated that it has been testing personnel assigned to complete odorant sampling to verify they have normal olfactory senses since March 2009.<sup>131</sup> It also provided a sampling of the test cards completed for March 2009 and March 2010. Peoples Gas stated it has identified and qualified a select group of five service crew members per District that it tests monthly by using three types of sniff test cards.

Liberty found that Peoples Gas met its commitments, has a procedure to test for normal olfactory senses, and has been testing its personnel. Liberty considers this recommendation verified and closed.

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<sup>130</sup> Response to Data Request #489.

<sup>131</sup> Response to Data Request #489, supplemental.

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**Recommendation**

III-6

**Conduct adequate training for Gas Operations Section (GOS) on valves and regulators.****Background**

Liberty found that Peoples Gas' training facilities and curriculum covering valves and regulators appeared adequate. The GOS Crawford Station training facilities covering valves and regulators had the equipment on which GOS personnel undergo OQ training may include hands on tear down and repair. The curriculum for training, which includes abnormal operating conditions, appears adequate. However, because no training or testing of GOS personnel took place during the course of this audit, Liberty did not evaluate whether the written and practical testing protocols were adequate. Liberty included a recommendation on this subject for follow-up during the verification phase of this investigation.

**Peoples Gas' Implementation Plan**

Peoples Gas is required to have Gas Operations Section operations and maintenance procedures, provide training on the procedures, and have training for the personnel to identify and react to abnormal operating conditions. In its implementation plan, Peoples Gas indicated that it conducts annually training on regulators and valves, and Operator Qualification for regulators and valves every three years.

**Verification Discussion and Conclusions**

During the fifth quarter, Liberty reviewed training materials and documentation of GOS training of its personnel.<sup>132</sup> Records reviewed indicated Peoples Gas provided classroom training to 16 GOS personnel in two September 2009 sessions. It provided the training to one Division Engineer in one of those sessions. Following the training, each individual took operator qualifications written examination. The training included the following covered tasks.

- Corrosion Control
- Leak Investigation and Classification
- Purging and Gassing Procedure
- Facility Locating and Marking
- Pipeline Patrol Procedure
- Station Operation: Besco Column
- Remote Operation Valves: Operation, Maintenance, and Inspection, (OM&I)
- Medium Pressure Regulator Station: OM&I – Fisher 399 Model
- Abnormal Operating Conditions
- Valves OM&I
- Interstation Regulator Station Operation, Maintenance and Shutdown
- Station Pipeline Heater Procedure

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<sup>132</sup> Response to Data Request #467

Following the classroom training and written examination, each of the 16 GOS personnel were scheduled for three days of practical valve, regulator, and charting practical training and evaluation at Crawford Station. Practical (hands-on) training and operator qualification evaluation took place during the months of October and December 2008. Practical training covered the following covered tasks.

- Reynolds, Donkin, Fisher 1098, Mooney, Fisher 298, Becker (Medium Pressure), Security Valves, and Charting.

Liberty evaluated the training materials and visited the Crawford Station training facilities. Liberty determined that the materials were comprehensive and met safety code requirements as well as addressed Peoples Gas' training and operator qualification needs for pressure regulator stations, valve operations and maintenance, and abnormal operating conditions.

Liberty considers this recommendation verified and closed.

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**Recommendation**

III-7

**Re-evaluate the odorant sampling and documentation paper system and convert it to an electronic format.****Background**

Liberty concluded that Peoples Gas' manual odorization documentation process and record system was time consuming and lacked a systematic and objective approach. An instructor at Technical Training and Standards (TTS) is responsible for the calibration of odorization equipment, conducting weekly odorometer test at Central shop, tracking odorometer sampling at North, South, Central and Downtown locations, and the bi-weekly distribution gas-odor survey. Field personnel forward their results of readings by e-mail or phone call to Technical Training where they are logged and maintained.

TTS also issues a list of areas to be surveyed, and a Field Service Department Supervisor schedules those surveys accordingly. Documentation of the odor test is logged on a Gas Odor Survey Form #3 and forwarded to TTS. This practice results in at least 42 paper forms per month that then need to be hand filed.

Liberty recommended that Peoples Gas re-evaluate the odorant sampling and documentation paper system and convert it to an electronic format. The paper system in use is inefficient, bulky, and time-consuming. Peoples Gas should investigate the possibility of scheduling and recording odor tests through its Navigate system to eliminate the paper records created by the existing system.

**Peoples Gas' Implementation Plan**

In its implementation plan, Peoples Gas indicated that implementation of this recommendation involved changes to Peoples Gas' customer billing system along with the mobile data system computer system, which is used to route these orders to the employees in the field. Peoples Gas is estimating the costs required to implement the changes, and then it will design, build, test, train, and deploy the changes.

**Verification Discussion and Conclusions**

Peoples Gas explained that it is in the process of implementing an electronic odorant sampling and documentation system and that it has combined this implementation with a larger project to upgrade the mobile workforce management system.<sup>133</sup> It has scheduled it for production in October 2010. Meanwhile, Peoples Gas implemented a manual odorant sampling program that replicates the functionality of the electronic system. It provided a report of odorant sampling results for each district shop from March 2009 through the week of April 4, 2010. Four deficiencies did not meet the odorant tolerance level. Three deficiencies occurred in the South District and one in the Central District. When there is a deficiency, a supervisor notifies Gas Control for follow-up and check gate stations. Peoples Gas confirmed that all four deficiencies were human error and performed retraining.

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<sup>133</sup> Response to Data Request #490.

Liberty verified that, since March 2009, Peoples Gas has captured odorant level sampling results for each district shop and placed the results on a spreadsheet. (*District Shops 2009 Weekly Odorant Test Data.xls*). Liberty still needs to verify:

- Who in Peoples Gas is responsible for identifying and reacting to odorant readings, detected at field verification locations, that are above or below odorant target parameters
- How will follow-up actions be documented
- Whether Peoples Gas will deploy the process onto each vehicle's Gobook computer laptop by the end of July 2010 along with the mobile data system computer system (Advantex), used to route these orders to the employees in the field.

Liberty will review Peoples Gas' odorant sampling in the electronic format in October 2010 when it expects to implement it.

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**Recommendation**

III-8

**Increase the frequency of employee emergency operating plan (EOP) training.****Background**

Liberty concluded that the training of Peoples Gas' employees met the code requirements but needed improvement. The training that Peoples Gas provides its employees, besides the service section first responders, barely meets the code in that it provides the basics for each employee to respond to an emergency and then to call for assistance. The training does not evaluate how well Peoples Gas trains its employees except by having them complete a test right after the training session. There is no mechanism for Peoples Gas to evaluate the training in realistic scenario type training nor does Peoples Gas solicit feedback on the training. The Technical Training Manager stated that trainees liked the e-learning type training. However, several employees stated the prior method of training was better in that there was more interaction between the instructors and the trainees and the computer had essentially no interaction with trainees besides saying when they had a wrong answer on the test.

Liberty recommended that Peoples Gas increase the frequency of employee emergency-plan training. Peoples Gas conducts initial EOP training for new employees every year, provided there are a sufficient number of new employees. In 2005, Peoples Gas conducted classroom training and in 2007, it provided on-line training modules. The complexity and detail provided in the EOP combined with regular personnel turnover or position changes demand that training makes key emergency response personnel familiar with the EOP more often than every two years. Peoples Gas should conduct refresher training at least annually.

**Peoples Gas' Implementation Plan**

In its implementation plan, Peoples Gas said that it would give a formal 2-day program every two years, with a refresher "e-learning" program given on alternate years. New employees joining gas operations will take the e-learning module within 90 days if the company does not offer formal program during that year. Human Resources will be responsible for including this in the new-employee manual. Implementation will start in 2009 and Peoples Gas will attempt to have the program designed within six months of the date of Liberty's report; however, it may need additional time for hands-on scenario case development.

Peoples Gas indicated that it would complete the program development by April 30, 2009, conduct training by May 29, 2009, and include program policies and procedures in the new-employee manual by May 29, 2009.

**Verification Discussion and Conclusions**

During November 2009, Liberty met with Peoples Gas' training personnel, reviewed Peoples Gas' progress in accomplishing the action items contained in its implementation plan, and reviewed details of the emergency response training (ERT) provided to its personnel.<sup>134</sup> Liberty requested a copy of the ERT "e-learning" program Peoples Gas intends to provide its

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<sup>134</sup> Interview #146, November 12, 2009.

employees.<sup>135</sup> Peoples Gas informed Liberty that it plans to develop the e-learning program addressing the EOP during the last quarter of 2010, before scheduled training next year (2010).<sup>136</sup> During November 2009, Peoples Gas clarified that it only provides the 2-day program to its management and supervisory operations and field service employees, as well as other related management personnel, vice presidents, engineers, and selected technical personnel. Peoples Gas explained that its union personnel primarily take the Abnormal Operating Conditions (AOC) training course, and that course covers emergency conditions and actions expected of them.<sup>137</sup> Liberty has previously attended and evaluated the AOC course content and found that it met the operator qualifications requirements of the safety code. Peoples Gas provides the AOC training to its distribution as well as field service personnel on a district-wide basis every three years. During 2009, Peoples Gas provided AOC training to 300 union and 19 management personnel.<sup>138</sup> Peoples Gas also addresses emergency response as part of its annual 2-day distribution crew refresher training and as part of its annual 2-day field service in-grade training.

Liberty verified that Peoples Gas scheduled and conducted nine 2-day ERT training classes from May 18 through June 18, 2009, training 217 of the 240 personnel identified for this training during that period. Seventeen Battalion Chiefs and Captains from the Chicago Fire Department and the Fire Training Academy participated in one or more days of the training classes and tabletop emergency exercises. The Chicago Fire Department participants' response to the training and their role-playing in the tabletop exercises was very positive.

Regarding Peoples Gas' Human Resources manual for new employees ensuring new management employees are scheduled for ERT training, Peoples Gas provided an e-mail string that stated, "There is no HR Manual for Management Employees for which EOP training can be referenced."<sup>139</sup> Instead, the e-mail indicated that by agreement, HR would notify Technical Training and Services of new or transferred employees to Gas Operations and Engineering so that it can address their ERT. For July and August 2009, there were nine new management employees; Peoples Gas stated that formal review or initial EOP training for them would be during the 2010 EOP training program.<sup>140</sup>

Liberty reviewed the contents of the 2-day ERT course materials.<sup>141</sup> Peoples Gas intends that the course "review, focus, bring to center stage, the procedures, thought processes, reporting requirements, and fundamental actions to be taken during an emergency in order to protect life and property."

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<sup>135</sup> Data Request #444.

<sup>136</sup> Telephonic Response to Data Request by e-mail November 20, 2009, asking for additional information on the response to Data Request #444 concerning Peoples Gas' plans and timeline to develop e-learning on its EOP.

<sup>137</sup> Peoples Gas explained that it also has management personnel attend this training as well as Union personnel.

<sup>138</sup> Telephonic Response to Data Request by e-mail November 20, 2009, asking for additional information on the response to Data Request #445.

<sup>139</sup> Response to Data Request #447.

<sup>140</sup> Response to Data Request #446.

<sup>141</sup> Response to Data Request #444, and Interview #146 conducted November 12, 2009.

The course content includes:

Day 1

- Gas Distribution System Overview
- Review of the Emergency Operating Plan
- Communications and Public Relations
- Engineering presentation on Information sources and Resources
- Properties of Natural Gas including an explosive limit demonstration
- Review of the Corporate Emergency Response Plan and the Incident Command Structure
- Presentation by Insurance and Claims
- Case Studies including a discussion of past incidents

Day 2

- A tour of the Command Van (normally present on major emergencies)
- A tabletop exercise of a simulated emergency
- Debrief and Lessons Learned.

The in-house, tabletop exercise involved separating participants into small groups where they took on the role of a department (and its personnel) working with other departments to respond to and control a gas emergency.<sup>142</sup> Facilitators helped guide participants with their responses and actions as the “emergency” developed and “actual field conditions” changed over time. Throughout the emergency exercise the emphasis was to protect life first then property. To provide further realism, actual Chicago Fire Department personnel including Captains and Battalion Chiefs assisted in developing details and participated in the scenario. Feedback from the participants indicated that the training was useful and effective in applying the materials and requirements contained in Peoples Gas’ Emergency Operating Plan as well as focusing participants attention to actions expected of them during a gas emergency.

Peoples Gas still needs to address the emergency training recommendation to provide at least ERT tabletop type exercises for its management personnel annually. It may be that e-learning will accomplish a review of Peoples Gas’ Emergency Operations Plan (EOP) requirements. Liberty had planned to comment on the e-learning material, expecting Peoples Gas to develop the e-learning materials during 2009 or early 2010. However, it now appears the e-learning training materials will not be available for review before September 2010, and the EOP training conducted during the last quarter of 2010.

The complexity and detail provided in Peoples Gas EOP combined with personnel turnover, position changes demand that practical implementation of emergency response thinking, and actions be a continual effort that involves interaction with other management personnel in a tabletop exercise environment, preferably on an annual basis. Peoples Gas’ current plan appears to rely on e-learning every other year to help address this need for annual emergency plan training. The e-learning to be developed needs evaluation to determine whether it addresses the need for annual tabletop emergency training.

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<sup>142</sup> Note: Peoples Gas identified this as an emergency drill, however it was a tabletop exercise. To be considered a drill would involve a field location including emergency response vehicles (PD, FD, etc), and company emergency response vehicles and personnel, all responding to the scene of a mock emergency.

Regarding ensuring its management personnel receive the 2-day emergency training, 217 of 240 personnel (90 percent) took the annual emergency plan training (excluding the nine new Gas Operations management personnel). This is an acceptable training participation level, as long as Peoples Gas provides annual tabletop emergency response exercises, coupled with e-learning that addresses details of its emergency plan. Peoples Gas still needs to commit to address the annual tabletop exercise training.

A third issue is that Peoples Gas provides annual training to its first responders to recognize abnormal operating conditions. Peoples Gas explained that it provides emergency response training in part to its union personnel through its Abnormal Operating Conditions course (AOC) on an annual basis.

Liberty will continue to monitor Peoples Gas' progress in implementing this recommendation.

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**Recommendation**

III-9

**Perform joint training with outside responders****Background**

Liberty found that Peoples Gas' liaison with city departments had been adequate. However, it should conduct additional external training. Peoples Gas provided periodic training to Police, Fire, Water and Sewer and O'Hare airport personnel. Typical training for Police and Fire personnel has been performed every three years while training for Water and Sewer and O'Hare airport have more sporadic (i.e., one time training in the period of 2000 through 2007). Interviews conducted with Police and Fire representatives and first responders from Peoples Gas indicated that there was good coordination and liaison between the company and city departments. None of the reviews for major incidents cited coordination or liaison issues with city departments and Peoples Gas' first responders defer to the fire department battalion chiefs for direction and assignments. Peoples Gas did not conduct joint training with city departments; it did not conduct realistic drills that included city departments.

Liberty recommended that Peoples Gas perform joint training with outside responders. The EOP should require that there is some formal joint training between company and non-company first responders to an incident. This training would assist in developing an even stronger working relationship between Peoples Gas and the outside responders. Such a training exercise would also highlight any deficiencies in the Peoples Gas' EOP. Peoples Gas should conduct training exercises yearly until all lessons learned are resolved and each group is cognizant of the capabilities of the other.

**Peoples Gas' Implementation Plan**

In its implementation plan, Peoples Gas said that, in conjunction with the response to III-8, it would invite staff from the Chicago Fire Department Office of Fire Investigation (CFD OFI) on odd-numbered years, beginning in 2009, to join company management personnel in the second day of the 2-day full training program for emergency response. Peoples Gas will invite CFD OFI on even-numbered years, beginning in 2010, to the refresher training for emergency response, which will include discussion of recent gas emergencies. It will offer separate training classes on gas safety and gas incident investigation to the Chicago Police Department Bomb and Arson Section (CPD) on an annual basis.

Peoples Gas will send the invitation to CFD (and ICC P/L Safety Staff) for the emergency-response training program and to CPD for the gas safety and gas-incident investigation program by February 28, 2009. It will conduct training by May 31, 2009.

**Verification Discussion and Conclusions**

During November 2009, Liberty met with Peoples Gas' training personnel and reviewed progress in accomplishing the action items contained in its implementation plan.<sup>143</sup> Liberty verified that Peoples Gas had invited the Chicago Fire Department to participate in its Natural

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<sup>143</sup> Interview #146, November 12, 2009.

Gas safety and Emergency Response Training Program.<sup>144</sup> The purpose was to assure protection of life and property in gas pipeline emergencies, assure mutual knowledge of each organization's responsibilities and resources in responding to gas pipeline emergencies, reviewing the types of gas emergencies, and planning for mutual assistance in those emergencies.

During 2009, Peoples Gas conducted nine 2-day ERT training classes from May 18 through June 18, training 217 of its personnel. Seventeen Battalion Chiefs and Captains from the Chicago Fire Department and the Fire Training Academy assisted in developing details and participated in the mock Incident Command Structure gas emergency tabletop exercises. Peoples Gas stated that for 2010, it would continue its invitation, training efforts, and coordination with the CFD OFI to encourage their participation in the refresher training for emergency response, review of recent gas emergencies, and mock emergency tabletop exercises.

During November 2009, Liberty verified that Peoples Gas conducted training classes covering gas safety, combustion of flammable gases, flame characteristics, appliance safety, types of leak detection equipment, gas incident investigation, and chain of custody issues.<sup>145</sup> Twenty-seven Fire Marshals, Detectives, and Inspectors with the Chicago Police Department Bomb and Arson Section, the Chicago Fire Department's Office of Fire Investigation, and the Chicago Office of the Joint Terrorism Task Force attended the classes given on September 9-10. Peoples Gas intends to continue these training efforts annually at its Technical Training Center as well as participate in providing materials and instruction at the Chicago Fire Training Academy when requested by the CFD.

In February 2010, Liberty interviewed representatives of the Chicago Police and Chicago Fire Departments to determine whether the new training and tabletop exercise were an improvement over prior training.<sup>146</sup> Both believed that the new training was an improvement and the use of the tabletop exercise had several benefits such as having outside and in-house responders working together prior to a real emergency, seeing the information needs of both the outside and in-house responders, and building a bond between the outside and in house responders. The fire department also believes that having a mock exercise with limited participation of outside responders (such as having a battalion chief respond) and full participation of Peoples Gas personnel would be useful in the future.

Liberty considers this recommendation verified and closed.

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<sup>144</sup> Response to Data Request #448, letters and e-mails to Assistant Deputy Fire Commissioner, CFD Director of Training, and CPD Bomb and Arson Section.

<sup>145</sup> Response to Data Request #451.

<sup>146</sup> Interviews #163A, 163C, 163D.

**Recommendation**

III-10

**Perform realistic drills with outside responders****Background**

Liberty recommended that Peoples Gas perform realistic drills with outside responders. The EOP should require that some formalized drills be prepared based on lessons learned from actual incidents and these drills include most of the functions within the Peoples Gas organization who respond to emergencies and non-company organizations, such as the Chicago Fire Department and the Chicago Emergency Planning organization.

**Peoples Gas' Implementation Plan**

In its implementation plan, Peoples Gas accepted the recommendation and indicated that it would invite staff from the Chicago Fire Department Office of Fire Investigation (CFD OFI) on odd-numbered years beginning in 2009 to join company management personnel in the second day of the 2-day full training program for emergency response, where it conducts a mock incident Command exercise. It will invite CFD OFI on even-numbered years, beginning in 2010, to refresher training for emergency response, which will include discussion of recent gas emergencies.

**Verification Discussion and Conclusions**

During November 2009, Liberty reviewed the training and joint exercises Peoples Gas conducted with the Chicago Fire Department (CFD) and with the Chicago Police Department.<sup>147</sup> Peoples Gas referred to its tabletop emergency exercises conducted with the CFD as drills. Liberty reviewed with Peoples Gas what this recommendation intended to accomplish by using the word drill, and explained that to be considered a drill, a mock training exercise would involve a field location including emergency response vehicles (PD, FD, etc) responding to the scene or a mock emergency. Peoples Gas emergency response vehicles and personnel would also be dispatched to the scene of the mock emergency. On the site, all hands would participate in an emergency scenario to simulate an emergency and employ the methods to address the nature of the emergency. This type of drill would involve Peoples Gas management and union personnel, as well as Chicago Emergency Planning personnel, CFD firefighters and their supervisors, and officers from the CPD.

Peoples Gas indicated that it understood the nature of drills Liberty identified, and would continue to work with the CFD and CPD and emergency planners to discuss the need and benefits of such drills.<sup>148</sup> Peoples Gas indicated that time and budget constraints by both the City of Chicago and the company have led the parties to accomplish training and tabletop emergency exercises on a more frequent basis, and to plan for developing a drill on a three- to five-year basis.

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<sup>147</sup> Interview #146, November 12, 2009.

<sup>148</sup> Interviews #164 A through D

Liberty agrees that annual tabletop emergency exercises with emergency responders are important, and that developing a mock emergency drill on a three- to five-year interval is a reasonable goal. Liberty considers this recommendation verified and closed.

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**Recommendation**

III-11

**Increase the training for outside first responders****Background**

Liberty determined that Peoples Gas should increase the frequency and the scope of training for outside first responders (*i.e.*, Chicago Fire Department, Chicago Police Department, and Chicago Water and Sewer Department) to address personnel turnover and new individuals and to improve and cover not only the normal response but also lessons learned from the most recent incidents.

**Peoples Gas' Implementation Plan**

Peoples Gas stated that with regard to the CFD and the CPD, see the response to Recommendations III-9 and III-10. With regard to the City Water and Sewer Departments, information on actions in case of gas emergencies (hits) is conveyed to these agencies through GCDPC coordinated training, which may include training delivered by TT&S personnel, in conjunction with damage prevention training (see response to Recommendation II-9).

**Verification Discussion and Conclusions**

Liberty reviewed Peoples Gas' training actions for outside first responders. Concerning the CFD and CPD, Peoples Gas indicated that it would continue its liaison, communications, and participation with training activities at the Chicago Fire Academy, and with the CPD's Bomb and Arson Section and the Chicago Office of the Joint Terrorism Task Force at its Technical Training Center. These training activities, as well as annual tabletop mock emergency exercises at Peoples Gas Technical Training Center, address this recommendation for increased training of outside first responders.

Concerning Chicago's Water and Sewer Department employees, Peoples Gas suggested reaching this subset of personnel through the damage prevention training in connection with the Greater Chicago Damage Prevention Council (GCDPC).<sup>149</sup> The training focus currently offered with the GCDPC is on prevention of underground damage. Because the training would be provided to essentially the same personnel, Peoples Gas' training materials would need to be supplemented to include materials addressing its Emergency Response Training (ERT). Liberty reviewed the actual training accomplished by Peoples Gas with the GCDPC. Liberty determined that as part of Peoples Gas' actions under recommendation II-9, Peoples Gas documented one day of damage prevention training for this year for City personnel.

- *Training for City Water/Sewer Crew Foreman and Engineers was held on July 29.*

Accordingly, Liberty accepts Peoples Gas' recommendation that it will accomplish additional training for municipal excavators on emergency response training through this forum. To do so, Peoples Gas will need to modify its training materials currently prepared for damage prevention to include materials to address emergency response training. Liberty will continue to monitor Peoples Gas' progress in implementing this recommendation and that of Recommendation II-9.

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<sup>149</sup> Liberty Recommendation II-9 suggests that damage prevention training be increased for the City of Chicago Sewer and Water employees.

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**Recommendation**

III-12

**Provide map access for service section personnel****Background**

Liberty found that the service section did not have access to maps in Navigate as does gas operations. The service section should have access to maps to help speed the response to some emergencies and would reduce the load on Citywide Dispatch during the emergency.

**Peoples Gas' Implementation Plan**

In its implementation plan, Peoples Gas questioned whether providing service personnel access with maps is going to benefit the company enough to spend an additional \$130,000 per year. All distribution employees and management employees have access to the map that can assist a service person during emergencies. However if the ICC Staff and Liberty remain convinced, access can be provided by upgrading the wireless service for field service employees to provide greater bandwidth at an annual cost of \$130K in addition to the \$35K one time cost to download Navigate software to field service employees.

Peoples Gas' schedule: contract for increased bandwidth wireless service for field service employees – 6/30/2009; complete downloading Navigate to Field Service Employees – 9/30/2009.

**Verification Discussion and Conclusions**

Liberty reviewed Peoples Gas' plan for implementing this recommendation and determined that it based its original estimate on the following:<sup>150</sup>

- It would need to upgrade approximately 250 Verizon Broadband units from a 3MB plan (\$16.99) to an unlimited plan (\$60) because Navigate users require more data usage than a regular service mobile user. The price difference would be \$43 per month and \$43 x 12 months x 250 users = \$129,000. Additionally, Peoples Gas would need to train its employees in the use of Navigate to access its maps at a one-time cost of \$35K.

Peoples Gas actually implemented this recommendation and determined:

- Incremental Verizon Broadband charges depended on usage under the corporate shared usage plan.
- Actual incremental cost will be less than estimated assuming more limited use.

Liberty reviewed training documentation and verified that the company provided field service employees with training to use the Navigate system to access GIS maps at their respective Districts from July 20 through September 29, 2009. Liberty considers this recommendation verified and closed.

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<sup>150</sup> Response to Data Request #253, and Interview #148, November 10, 2009.

**Recommendation**

III-13

**Peoples Gas needs to evaluate business district boundaries.****Background**

Liberty found that Peoples Gas had not reviewed the boundaries of its business districts and recommended that Peoples Gas have a process that periodically evaluates its business districts. Over time, demographics change and business district boundaries change. The district boundaries have important implications for leak survey requirements. Peoples Gas' procedures should define a frequency within which it identifies its business districts for leak survey and pipe replacement purposes and communicate this to its field operations personnel that conduct leak surveys. Subsequent to Liberty's audits, Peoples Gas informed Liberty it had conducted a study of its business districts during 2007 and implemented changes during 2008.

**Peoples Gas' Implementation Plan**

Peoples Gas stated that it completed an extensive review on the boundaries of business districts in 2007. The 2008 inspection cycle was based on those updated records. The Distribution Design Section used aerial photography from four (4) different sources to audit the business classification in addition to performing numerous site surveys. Peoples will determine best practices regarding the frequency of re-surveying business district boundaries. By March 31, 2009, Peoples Gas will update Exhibit IV (Safety Inspection Program) of Operating and Maintenance plan to reflect an appropriate business-district review cycle.

**Verification Discussion and Conclusions**

Liberty discussed Distribution Design Section's process conducted during 2007 to evaluate and identify the limits of its business districts for leak survey purposes.<sup>151</sup> Peoples Gas did not retain a copy of the procedure it followed; however, it demonstrated the basic process. Peoples Gas provided an updated map of its business districts and a table of changes.<sup>152</sup> Liberty evaluated a number of business district boundaries with Peoples Gas by using business district maps and confirming the limits by comparing the nature of the properties fronting a street on Google Earth. In each case evaluated, Liberty determined Peoples Gas satisfactorily encompassed and at times exceeded the limits of business districts. The following table provides the results of Peoples Gas 2007 study. Liberty will evaluate in the field, a sample of business districts that Peoples Gas determined are no longer business districts.

	2007 Total Count		Change		2008 Total Count	
	Business	Residential	Business →(to) Residential	Residential →(to) Business	Business	Residential
# of segments	10,686	67,641	5,881	5,568	10,373	67,954
Miles of main			219	178		

<sup>151</sup> Interview #105, January 23, 2009.<sup>152</sup> Response to Data Request #317.

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**Recommendation**

III-14

**Improve leak response times****Background**

Liberty found that Peoples Gas needed to evaluate and determine how it may best improve its leak response profile, specifically the percentage of calls responded to within 30 minutes and within 45 minutes. Peoples Gas also needs to reduce the number of calls responded to in excess of 60 minutes.

Liberty suggested that Peoples Gas evaluate alternatives for improving its leak response profile within three months of the date of this report. The evaluation should include specific recommendations, a schedule, and monthly performance reviews for meeting specific response time profile goals.

**Peoples Gas' Implementation Plan**

Peoples Gas stated that through training it would increase the awareness of its employees in responding to more leaks in less than 60 minutes. Peoples Gas' plan stated it would:

1. Hold Emergency Response Time meetings with all managers, supervisors, and engineers by December 1, 2008.
2. Conduct Tailgate Meetings for field-service union personnel by December 2, 2008.
3. Complete an analysis of response to leak calls exceeding 60 minutes. Complete a statistical analysis to estimate the probable reduction in response time for varying increases in resources by December 31, 2008.
4. Based on results of statistical review, allocate additional crews to shifts that have the greatest benefit from increased resources by June 30, 2009.
5. Establish and adopt performance goals for leaks responded to within 30, 40, and 60 minutes by January 31, 2009.

**Verification Discussion and Conclusions**

Liberty discussed the actions taken in relation to this recommendation with Peoples Gas on several occasions.<sup>153</sup> Peoples Gas explained it had carried out a detailed analysis of its emergency response crews' response times from the time it received a gas or odor complaint to time of the crew's arrival on location. Peoples Gas evaluated its crews response in terms of percent of calls responded to within 10-minute increments for each shift, for each district, and for each season (quarter) for the years 2004 through 2008.

Peoples Gas identified a vulnerability in the North District for the entire year (three seasons) on the night shift and an associated need for two additional crews, and identified a citywide need for one extra crew on its midnight to 8 a.m. shift for the heating season. With these added crews on specific shifts, Peoples Gas expects to improve its leak response performance.

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<sup>153</sup> Interviews January 21, 2009, January 22, 2009, and May 5, 2009.

Peoples Gas has begun to implement changes to improve its response profiles and established the following 2009 response time goals:<sup>154</sup>

Crew Response Time from Receipt to Arrival (Minutes)	Peoples Gas 2009 Goals Percent of Calls
30 Minutes	75%
40 Minutes	90%
50 Minutes	95%
60 Minutes	99%
Over 60 minutes	< 0.5%

Peoples Gas is meeting its implementation plan commitments has met its response time goals during 2008.<sup>155</sup> Liberty plans to continue it evaluate actual response times for 2009.

During the third quarter, Liberty met with Peoples Gas<sup>156</sup> and reviewed its actions and progress in achieving its leak response time goals. Peoples Gas managers continue to evaluate district response times by each of three shifts to identify those shifts and times challenged in meeting emergency leak-response time targets. Peoples Gas then identifies some limited individual shifts and adds additional crews for those shifts in need of additional response to meet overall goals by district and for Peoples Gas as a whole. It appears Peoples Gas' action to address this issue and to improve its emergency leak response times is acceptable; it is meeting its target goals. Liberty considers its verification work on this recommendation complete.

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<sup>154</sup> Response to Data Request #319.

<sup>155</sup> Response to Data Request #321.

<sup>156</sup> Interviews #135 and #131, August 4 and 5, 2009.

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**Recommendation**

III-15

**Peoples Gas needs to improve its Inside Safety Inspection procedures and training.**

Inside service line safety inspections, should include inspection for corrosion at the point of entry. This should include inspection of the “heel” of service inside of the building (between the building wall and the inlet to the meter/regulator set). Peoples Gas should revise its current procedure and training materials, and implement the new procedure within six months of the date of this report.

**Background**

As part of its leak surveys and safety inspections, Peoples Gas conducts “Inside Safety Inspections” of gas piping from the point of entry of the gas service line including piping on the customer side of the meter set.

Liberty determined that Peoples Gas’ Inside Safety Inspections (ISIs) do not address the threat from corrosion at a building’s point of entry through the foundation wall. Pipe at the building foundation wall is more vulnerable to corrosion attack due to changes in oxygen levels, soils, materials, and chemicals leaching from the foundation wall. Peoples Gas needs to emphasize this aspect of the inspection, and to change the ISI procedure and training materials.

**Peoples Gas’ Implementation Plan**

PGL will revise its training procedure and training materials for ISIs, adding emphasis in instructions to operations personnel to inspect for corrosion at the heel of the service, explaining the vulnerability to corrosion at this location due to changes in oxygen levels, soils, materials, and chemicals leaching from the foundation wall. It will provide visual, physical examples of corrosion in training. Peoples Gas will complete the revised training documents December 31, 2008.

**Verification Discussion and Conclusions**

Liberty reviewed and discussed Peoples Gas’ revised training materials, revised lesson plans, revised Section 16 of Peoples Gas Field Service Manual, and witnessed training of Peoples Gas safety inspection personnel at its Training Center.<sup>157</sup> Liberty verified the dates of “ingrade training” and “crew refresher training” when the inside safety inspection details for corrosion were addressed. Training emphasized corrosion at the “heel” of the service within the building, and included examples of slight and moderate corrosion. Peoples Gas has fully addressed this recommendation. Liberty considers its verification work on this recommendation complete.

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<sup>157</sup> Interview, May 5, 2009, and response to Data Request #322.

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**Recommendation**

III-16

**Improve leak management practices.**

Peoples Gas can improve leak management practices through a number of actions:

1. Increase the percentage of repairs as opposed to investigations. In part, this will be accomplished through an increased presence of Peoples Gas supervision on site.
2. Improve the consistency of leak-area investigation documentation.
3. Ensure crews evaluate and use information contained on leak repair sketches and barhole reading histories.
4. Re-evaluate Peoples Gas' practice of reducing leak hazard classifications without making repairs at leak locations. Specific questionable practices include venting a leak area or placing a vented manhole cover over a manhole without continuous repair activities.
5. Re-evaluate Peoples Gas' practice of clearing leaks without repairs.
6. Institute a leak recheck of recently repaired leaks to verify the effectiveness of repairs.

Peoples Gas should develop a written plan for meeting these recommendations within six months of the date of this report. The plan should include revised procedures, training, implementing schedules, and specific quality assurance inspections to verify their implementation within one year of the date of this report.

**Background**

This recommendation concerns improving Peoples Gas' focus on its leak investigations and repairs, specifically Peoples Gas' lack of consistency in conducting and documenting leak investigations, downgrading leaks without repairs or just by venting the area, and clearing leaks without making repairs.

Peoples Gas' O&M Plan, Exhibit II Field Service Manual, section 11 Leak Investigations, describes the actions its field service employees must take when responding to and investigating calls from members of the public who suspect a gas leak or a gas odor.<sup>158</sup>

When a leak survey operator detects an indication of natural gas, the procedures call for the use of impact bars<sup>159</sup> to assess the hazard area, and to follow General Order 300 leak investigation guidelines for barhole gas-migration readings. The leak survey operator also is required to fill out a leak ticket form and enter the test point information into the Navigate system. Peoples Gas refers to this as the Navigate leak sketch.

Liberty determined that certain actions that Peoples Gas should perform would help improve the company's leak management practices. Those actions would result in a more consistent approach

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<sup>158</sup> Response to Data Request #2. In addition, the O&M Plan Distribution Manual Volume I, Exhibit I, General Order 0.300 contains Peoples Gas' procedure for its distribution personnel in reporting, classifying, rechecking, repairing and clearing of outside natural gas leaks.

<sup>159</sup> Impact bars are driven into the ground making a barhole, which provides a means to take a gas-in-air reading of subsurface conditions and determine the migration pattern of a gas leak.

in evaluating gas leak areas, taking advantage of prior investigations of the same leak area, leaks being repaired in a more timely fashion, fewer leak hazards left without repairs, and generally tighten its control of ensuring leak areas were cleared of gas readings. Liberty recommendations addressed:

- Increasing the percentage of repairs as opposed to investigations
- Increasing the presence of Peoples Gas supervision on work sites
- Ensuring leak area investigation documentation is consistent. Personnel should take leak area migration pattern and test-point readings each day the leak area is under evaluation, as well as when a leak-ticket sketch is initially prepared.
- Encouraging crews to take advantage and use the information contained on leak repair sketches and barhole reading histories to evaluate changes in leak migration patterns and to assist in determining where to make leak repairs.
- Re-evaluating Peoples Gas' practice of reducing leak hazard classifications without making repairs at leak locations. Specific questionable practices include venting a leak area or placing a vented manhole cover over a manhole without continuous repair activities.
- Re-evaluating Peoples Gas' process for clearing leaks without repairs.
- Re-instituting Peoples Gas' practice of rechecking recently repaired leaks to verify the effectiveness of repairs.

### Peoples Gas' Implementation Plan

In its implementation plan, Peoples Gas identified the following actions.

1. Personnel create leak sketches in Navigate when they discover a leak while performing a leak survey or during the initial recheck of a leak initially investigated by an employee not assigned a leak survey order. Distribution General Supervisors will print out the latest leak sketch available in Navigate for an active leak and make it available for the Crew Leader assigned to repair the leak. Peoples Gas will instruct crew leaders to use the information captured in previous leak sketches to more effectively pinpoint and repair leaks. (November 1, 2008.)
2. The work management team (WAMS) has proposed to configure the system to attach the latest leak sketch to the leak repair order. (March 31, 2010.)
3. The company does not consider the venting of a below ground, outside gas leak as a temporary repair. This activity is discouraged, but on those limited occasions where it is deemed necessary to either vent or allow a temporary repair on a below ground, outside gas leak, the following procedures will be followed. Manager or higher approval will be required, the manager will be responsible for documenting, and tracking the number of days until a permanent repair is made. Permanent repairs will typically be made within five (5) business days, but not to exceed ten (10) business days. Daily rechecks will be conducted on all leaks vented or temporarily repaired. The ICC pipeline safety group will be notified if permanent repairs will be delayed for more than 10 days. (November 1, 2008.)
4. No leak will be cleared in LKMS prior to an Operations Manager or Construction Manager's review of known work in the area that could account for the leak being cleared. (November 1, 2008.)

5. Upon implementation of the new work and asset management system, Peoples will require two (2) successive zero readings before the leak can be cleared after a repair. Additional rechecks must be made no sooner than 3 days and no later than 7 days after the repair. An inquiry will be made as to the feasibility of re-instituting this process in the legacy LKMS system prior to the implementation of the new work management system. (March 31, 2010.)
6. Revise Distribution Department General Order 0.300 to add clarity to Action Items Numbers 1, 3, 4 and 5. (March 31, 2009.)

### Verification Discussion and Conclusions

Liberty continued its evaluation of Peoples Gas' actions concerning this recommendation by conducting a series of interviews at Peoples Gas including visiting leak sites to evaluate Peoples Gas leak investigation crews with their General Supervisors, during the week of May 5-7, 2009,.

The vice president Operations indicated that Peoples Gas continues to emphasize the importance of improving leak management practices, by requiring increased attention by District Managers and their General Supervisors.<sup>160</sup> Due to the colder than normal 2008-2009 winter, and resultant increased numbers of new leaks reported, that need investigation and repairs, Peoples Gas has shifted additional crews to work and repair leaks in an effort to bring the leak backlogs down as quick as possible. Managers and supervisors' practices and attention are particularly focused to:

- Log and keep track of those leaks that have not been repaired, and for which vent holes have been excavated to reduce the leak migration pattern, and reduce the immediate hazard where gas had migrated to the building front wall, or where accumulations of gas was present in sewer systems and manholes. These conditions are some of the most hazardous and provide paths of hazardous gas migration into buildings.
- Ensure any of its leaks that have been vented and downgraded in hazard without making a repair, have in fact received a repair between 5 and 10 business days,
- Verify leak areas are in fact cleared by instituting a second follow-up recheck, especially those reported to be cleared without a repair.
- Improve on site leak investigations and repairs, by implementing practices to improve the use and availability of sketches of leak migration patterns prepared by crews previously working the leak location.
- Review weekly status of type 2 hazard leaks reaching the 9-month old status.

Liberty notes that Peoples Gas is making progress in many of its stated leak related goals.

Liberty verified that Distribution General Supervisors are printing out the latest leak sketch available in Navigate for an active leak and making it available for the Crew Leader assigned to repair the leak. Liberty noted that crew leaders have had the leak sketches on leak location sites and were familiar with the information captured in previous leak investigations and have used this to assist them in pinpointing and repairing leaks. Peoples Gas has met its commitment to implement a paper system of leak area rechecks by April 6, 2009. Liberty also evaluated the leak

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<sup>160</sup> Interview, January 20, 2009.

management approaches of Peoples Gas' Operations General Supervisors, and leak crews assigned to investigate, pinpoint the location of leaking gas facilities, and make repairs at a number of leaking gas locations in its North District.<sup>161</sup> Liberty noted increased on site presence and supervision of its leak investigation and repair crews. Liberty determined the General Supervisors and Operations Managers were implementing the duties required in the memos to discuss with Operations Managers those un-repaired leaks, downgraded with a vent hole/venting manhole cover.<sup>162</sup> These leaks are documented on logs and worked or surveilled on a daily basis with a goal of repair no later than 10 days. This recommendation will continue to receive additional evaluation regarding its implementation.

During the third quarter of 2009, Liberty met with Peoples Gas<sup>163</sup> and reviewed Peoples Gas' actions and progress in improving its leak management practices. Liberty's work this quarter included conducting on site evaluations of a number of leak locations to evaluate leak repair crews' actions, and to verify that Peoples Gas accurately recorded the leak readings and associated leak classifications. Liberty verified that Peoples Gas' actions to conduct rechecks of leak locations to verify the effectiveness of repairs, and to verify a leak location is free of gas and can be cleared or down-graded in classification based on gas readings in the field, appears to be achieving desired results. Liberty determined that the leak indication readings at each location checked, was accurate and either properly cleared of gas, or Peoples Gas leak repair crews had properly classified the leak in accordance with remaining gas readings at the sites. For those gas leaks that Peoples Gas crews were in the process of investigating and making repairs, the crews' actions were appropriate. However, even though Peoples Gas did not always apply the use of leak location sketches consistently, due to the nature of the leak and its leak migration pattern, Liberty determined the crews' actions to be acceptable. Liberty will continue to monitor implementation of this recommendation.

During November 2009, Liberty met with the South District Manager to discuss progress, changes, and oversight of leak management activities.<sup>164</sup> Liberty also evaluated field locations of leaks to verify leak classifications and to verify that leaks recently cleared in the Navigate system and on paper records were in fact free of gas readings.<sup>165</sup> Liberty continues to monitor Peoples Gas' management of its leaks repairs, and finds its management is continuing to provide close attention to its leak repair activities. These leak activities include clearing leaks with no repairs, allowing leak locations to remain with vent holes open, applying sketches to help evaluate leak migration patterns for its more difficult leaks, reducing the number of leaks pending repairs, and increasing on site supervision of leak repair activities. Liberty found Peoples Gas' management improving its leak management practices and providing acceptable leak management oversight.

During the fifth quarter, Liberty evaluated Peoples Gas' leak management practices, specifically with respect to:<sup>166</sup>

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<sup>161</sup> Interviews and field observations of leak crews, May 6, 2009.

<sup>162</sup> Interview, May 6, 2009, North District Manager and General Supervisor.

<sup>163</sup> Interviews #134, #135, and #131, August 4, 5, and 6, 2009.

<sup>164</sup> Interview #150 November 9, 2009, South District Manager and General Supervisor.

<sup>165</sup> Interviews #150, and field observation of leak crews, November 9, 2009.

<sup>166</sup> Response to Data Request #468.

- how its repair crews work leaks
- whether leaks are left with just a vent hole as a “temporary repair” for extended periods of time, and if so, what the crew’s reasons may be
- how quickly Peoples Gas repair crews are able to return to make permanent repairs to leaking gas lines.

Liberty determined that General Supervisors have continued to maintain leak logs that document the instances, dates, locations, and reasons leak repair crews determined it necessary to excavate a vent and leave a leak location prior to repair. For the December 2009 through February 2010 period, Peoples Gas had six occasions when it excavated vent openings, one in the North District, three in the South District and two in the Central district. Liberty evaluated the locations and reasoning for each location and determined the actions acceptable. In each instance, personnel left the buildings involved in a safe condition and made repairs on the leak area the following day.

Liberty notes in recommendation III-17 that Peoples Gas has not been able to reduce the number of leaks pending repairs at year-end even with increased staff assigned to leak repair codes. Liberty will continue to evaluate Peoples Gas leak management activities to determine whether Peoples Gas is able to free up additional General Supervisory time intended to be on job sites supervising leak repair crews during 2010. Liberty will evaluate why has Peoples Gas been unable to reduce its leak backlog and clear more leaks if additional supervisor time is being spent on job sites and increased resources is being applied to repair leaks.

Liberty will continue to evaluate Peoples Gas leak management practices, the increased hours assigned to leak repair activities as well as the number of leak repairs and leaks cleared. Liberty will also continue to evaluate those leaks cleared without repairs.

In the sixth quarter, Liberty assessed Peoples Gas progress in improving its leak management practices.<sup>167</sup> Liberty reviewed the progress in Peoples Gas’ work practices and its progress in management of leak practices in working and repairing leaks. Liberty reviewed the management oversight at the Operations Vice President level and the management oversight at the District Manager level in the North and Central districts.<sup>168</sup> Liberty determined that Peoples Gas Operations management were actively engaged and knowledgeable of the practices its leak repair personnel were using to respond to reports of leaking gas hazards and to reduce the hazard at leaking gas sites, and the practices its crews were using to investigate, pinpoint, and repair those gas leaks. Liberty determined that Peoples Gas management in mid-March 2010, in order to enhance its ability to reduce its leak backlogs, and to reduce the number of type 2 leaks (workable leaks) in its backlogs, began using two to three crews devoted to drilling holes at leak location sites to investigate and pinpoint locations for follow-on crews to excavate and make leak repairs. This is one method used to standardize leak investigation efforts and apply consistent approaches to leak repairs.

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<sup>167</sup> ICC Safety staff accompanied Liberty during its gas leak investigations.

<sup>168</sup> Interviews #165, May 3, 2010, and #168 and #169 May 5 and 6, 2010.

Liberty determined that Peoples' management personnel were maintaining close control and oversight of those leak hazard locations that could be reduced or eliminated without repair, those leak locations that could be vented and left without continuous repair activities but documented and followed up and worked in a timely manner, and ensuring leak locations were rechecked to verify the effectiveness of repair activities.

Additionally Liberty visited leak locations where:<sup>169</sup>

- leaking gas was being investigated
- pinpointing activities determined where exactly to excavate for repairs
- leaking gas sites that were being excavated
- gas leak pipes were being repaired.

Liberty also responded with the General Supervisor and emergency crews to investigate a newly reported leak location where gas was reported migrating into a sewer manhole, into the sidewalk area in front of a multistory apartment building with lower explosive level readings reported inside the building.

At each gas leak and investigation site, Liberty verified Peoples Gas crews were productively engaged in the gas leak investigation and repair process steps. Regarding the emergency response to the gas leaking in front of the apartment building, Liberty determined that Peoples Gas repair crews responded in a highly efficient, thoroughly professional manner to:

- assess the nature and extent of the hazard
- determine the extent of hazardous gas migration
- vent the leaking gas and reduce the immediate hazard
- pinpoint the location for gas repairs.

Liberty also verified that Peoples management is encouraging crews to take advantage and use the information contained on leak repair sketches and barhole reading histories to evaluate changes in leak migration patterns and to assist in determining where to make leak repairs.

Liberty believes Peoples Gas has been assigning additional personnel to repair gas leaks, has increased the percentage of repairs as opposed to just investigating leak locations, and has tightened up its management control and oversight of gas leak activities. One concern going into the time period beyond the scope of Liberty's current audit implementation phase will continue to be Peoples Gas ability to maintain an adequate number of experienced qualified field personnel to accomplish all its safety code mandated requirements, reduce its leak backlog, and support its system enhancement program. This will continue to present a challenge to Peoples Gas Operations management.

Liberty considers its verification work on this recommendation complete.

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<sup>169</sup>Interviews #167, #168, & #169, field observation of leak crews, May 4, 5, & 6, 2009

## Recommendation

III-17

### Reduce the year-end leak backlog.

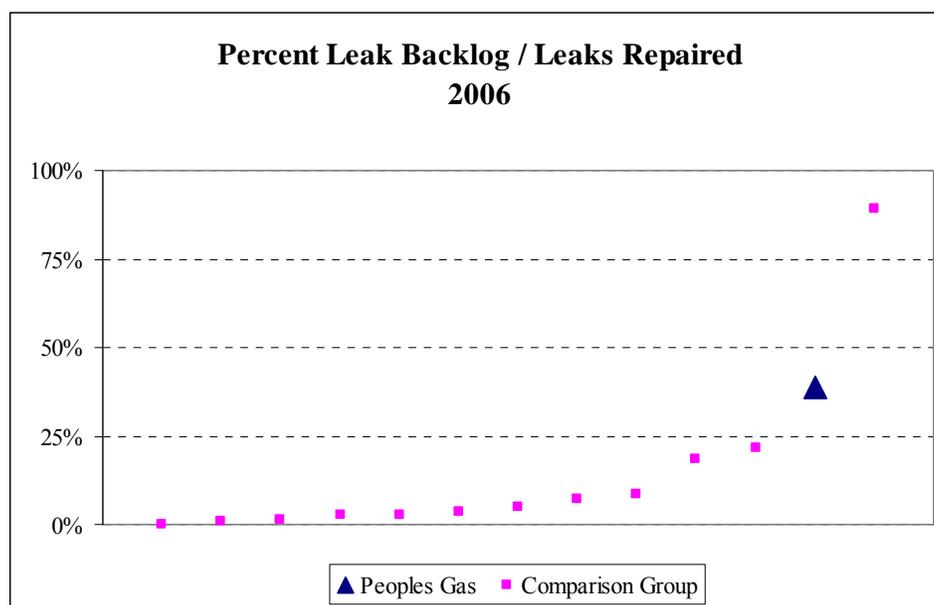
Peoples Gas needs to repair more leaks and reduce the level of backlogs at year-end. In both relative terms, compared to its peers, and absolute numbers of leaks outstanding, Peoples Gas' leak backlog is too high. Peoples Gas should reduce the backlog so that the percentage of the leaks in backlog at year-end is less than 10 percent of the number of leaks repaired during the year. Peoples Gas should develop and implement a written plan for meeting this recommendation. The plan should include specific goals for reducing leak backlogs and repairing more leaks, including target levels for leak backlogs at year-end for the current and following two years.

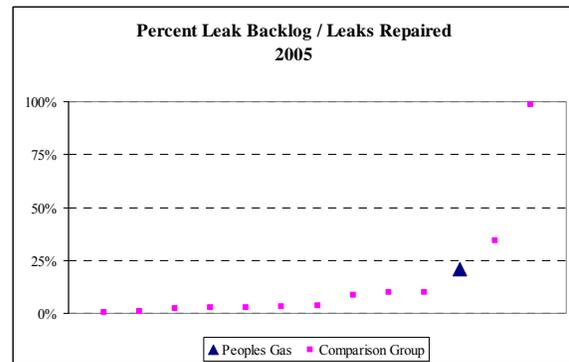
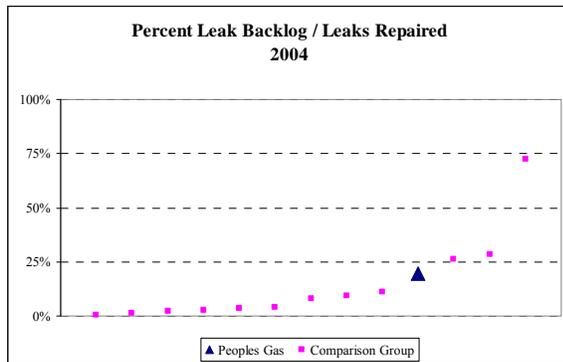
## Background

Peoples Gas has had a comparatively large leak backlog at year-end, a time of year when frost cover presents the highest risk for hazardous gas leak migration. Peoples Gas carried over 500 leaks in need of repair at year-end 2005. This level of backlog is high in relation to the number of leaks repaired.

The number of leaks in the backlog at year-end divided by the number of leaks repaired is a metric that reflects the risk posed to the public by allowing leaks to go un-repaired at year-end. Good operators reduce their leak backlog levels prior to frost conditions. Liberty compared this measure for Peoples Gas with a peer group. Peoples Gas' measure was about 25 percent while the peer group was below 10 percent.

This metric compares the leak backlog with the actual leak repair efforts. The charts below show the number of known leaks at year-end scheduled for repair as a percentage of the total number of leaks repaired during the year. A higher number reflects poor repair numbers compared with leak backlogs. An acceptable performance number is in the low single digits.





Peoples Gas' leak backlog performance presents an unacceptably high risk. To increase safety, Peoples Gas needs to reduce its backlog of leaks, *i.e.*, repair more leaks.

### Peoples Gas' Implementation Plan

In its implementation plan, Peoples Gas indicated that it planned to:

- Reduce the number of underground leaks by increasing leaks repaired versus leaks received by October 1, 2008.
- Implement a policy of repairing 110% of leaks received immediately.
- Provide copy of the November 19, 2008, report on Status of Leak Indications by November 21, 2008. This schedule is consistent with Liberty's recommendation that Peoples Gas should develop a plan within three months of the date of Liberty's final report.
- Continue this rate of leaks repaired versus leaks received (110%) through the end of 2009.
- Achieve a reduction in the backlog so that the percentage of leaks in backlog compared with leaks repaired by year-end 2009 is below 10 percent. (Note that this differs from the response to Data Request 327, which identifies the year-end 2009 goal as 14 percent. Actual for year-end 2008 was 17.7 percent).
- Maintain a report that keeps a yearly cumulative total of leaks cleared and leaks repaired to track achievement of reducing Peoples Gas year-end backlog of leaks to be repaired.

### Verification Discussion and Conclusions

Liberty reviewed weekly reports of leaks received and repaired as well as for the calendar year to date period for the weeks ending November 19, 2008, and January 14, 2009.<sup>170</sup> Liberty determined that Peoples Gas has cleared more leaks for both year-to-date periods, and met its goal to repair and clear 10 percent more leaks than the number of leaks received for the year.

Liberty determined that managers are paying greater attention to and tracking leaks, reducing backlogs, are discussing leaks daily and holding weekly meetings between general supervisors and managers to discuss how best to schedule and repair older leaks approaching 12 months.<sup>171</sup>

<sup>170</sup> Response to Data Request # 301.

<sup>171</sup> Interviews with General Supervisors and with Operations Managers January 22-23, 2009

The table below provides a history of Peoples Gas' year-end pending leaks and number of leaks cleared for each year since 2003.<sup>172</sup> For 2009 and 2010, Peoples Gas' goal is to reduce the percentage of pending leaks to leaks cleared at the end of the year to be equal to or less than 14 percent for 2009 and 10 percent for 2010.

	<b>Pending Leak Repairs as of 12/31</b>	<b>Leaks Cleared</b>	<b>% Pending</b>
2003	540	3,084	17.5%
2004	497	2,845	17.5%
2005	522	2,834	18.4%
2006	865	2,477	34.9%
2007	819	3,286	24.9%
2008*	555	3,127	17.7%

As of 4/1/2009 757

\* as of 12/24/2008

This year's leak management goals are especially challenging as Peoples Gas stated the 2008-09 winter was colder than normal, the 17<sup>th</sup> coldest on record.<sup>173</sup> The colder conditions resulted in an increased number of new leaks and an increase in leak backlogs. Liberty verified that Peoples Gas has assigned additional operations crews to leak repair activities and is working diligently to reduce the backlog of its leaks pending repairs. In spite of its efforts, as shown in the chart below, leaks pending repairs increased to 757 on April 1, 2009 as compared with 729 the same period one year ago.<sup>174</sup> Peoples Gas' level of type 2 leaks also increased to 43 percent as compared with Peoples Gas' percent of type 2 leaks pending at year-end 2008 of 30 percent.

<b>Status of Leak Indications</b>				
Calendar YTD (01/01/2009 to 04/01/2009)				
Class (Grade)	<u>1</u>	<u>2</u>	<u>3</u>	<u>Total</u>
Pending (as of 01/01/2009)	6	161	397	564
Received	437	516	15	968
Cleared	292	370	113	775
Adjustments	-141	16	125	0
Pending (as of 04/01/2009)	10	323	424	757
Calendar YTD (01/01/2008 to 04/02/2008)				
Class (Grade)	<u>1</u>	<u>2</u>	<u>3</u>	<u>Total</u>
Pending (as of 01/1/2008)	3	328	488	819
Received	371	313	9	693
Cleared	225	419	139	783
Adjustments	-145	43	102	0
Pending (as of 04/02/2008)	4	265	460	729

<sup>172</sup> Response to Data Request # 327.

<sup>173</sup> Interview, May 5, 2009.

<sup>174</sup> Response to Data Request # 396

Additional audits of the implementation plan will determine if Peoples Gas' leak management efforts are continuing to be successful in addressing Liberty's recommendations.

During the third quarter of 2009, Liberty confirmed that Peoples Gas is applying available crews to clear leaks and reduce its leak backlogs. Peoples Gas has continued to shift crews from its Central District to the North District to work on the increase in the numbers of leaks it has received this past winter. For the year to date period (01/01/2009 to 07/29/2009) Peoples Gas has experienced an increase of 236 leaks in its leak backlog as compared with a reduction of 200 leaks in its backlog for the same period last year. For the 2009 year to date, Peoples Gas received 1,945 new type 1, 2, and 3 leaks, while clearing 1,709 leaks. During the period 04/01/2009 to 07/29/2009, Peoples Gas has managed to increase its leaks cleared ratio from 80 percent to 88 percent of the new leaks occurring on its system, and is endeavoring to meet its goal of reducing its leak backlog at year-end. PGL stated it would like to get to the point where its leaks cleared versus the number of new leaks received is at the 105 percent level.

<b>Status of Leak Indications</b>				
Calendar YTD (01/01/2009 to 07/29/2009)				
Class (Grade)	<u>1</u>	<u>2</u>	<u>3</u>	<u>Total</u>
Pending (as of 01/01/2009)	6	161	397	564
Received	882	1004	59	1945
Cleared	309	758	642	1709
Adjustments	-556	54	610	0
Pending (as of 07/29/2009)	23	321	456	800
Calendar YTD (01/01/2008 to 07/30/2008)				
Class (Grade)	<u>1</u>	<u>2</u>	<u>3</u>	<u>Total</u>
Pending (as of 01/1/2008)	3	334	482	819
Received	833	769	50	1652
Cleared	573	908	371	1852
Adjustments	-263	-4	267	0
Pending (as of 04/02/2008)	0	191	428	619

Liberty continues to be concerned with the level and number of new leaks received on Peoples Gas' system, especially in the North district. Liberty notes that in spite of its leak repair efforts, Peoples Gas' pending leaks and leak backlogs continue to be higher than the previous year. Liberty will continue to monitor Peoples Gas' efforts in reducing its pending leaks and its progress in reducing its year-end backlog of leaks.

During November 2009, Liberty evaluated Peoples Gas' efforts applied to reduce the backlog of leaks at year-end. For the year to date period (01/01/2009 to 11/04/2009), Peoples Gas received 2,849 new type 1, 2, and 3 leaks and cleared 2,552 leaks.<sup>175</sup> Peoples Gas was unable to meet its plan of clearing 110 percent of new leaks received. Even with additional crews assigned to repair leaks, for the period, Peoples Gas cleared just less than 90 percent of the new leaks occurring on its system. This is an increase from the previous quarter where it managed to clear 88 percent of new leaks received for the year to date period. The number of pending leaks increased to 861

<sup>175</sup> Response to Data Request # 454.

compared with 549 for the same period one year ago. The North district alone has 597 total leaks pending as compared with the same period one year ago of 420. Of these leaks, 263 of the 597 leaks are the more hazardous class 1 and 2 leaks. This compares with 124 class 1 and 2 leaks out of 420 leaks pending for the same period in 2008.

Liberty verified that Peoples Gas is applying additional crews to work leaks, and is endeavoring to meet its goal of reducing its leak backlog at year-end. It is unlikely that Peoples Gas will achieve its goal of clearing 105 percent of the new leaks received at year-end 2009 and reduce its leak backlog compared with the previous year. Peoples Gas needs to replace greater levels of its vulnerable mains and numbers of vulnerable service lines and continue to increase the number of crews working leaks in order to reduce its leak backlog levels. Furthermore, Peoples Gas needs to increase the amount of time its General supervisors spend on leak repair activities in the field.

During the fifth quarter, Liberty reviewed Peoples Gas leak repairs for calendar year 2009. Liberty is concerned that Peoples Gas' reduced cast and ductile iron main retirements (21 miles of CI/DI eliminated during 2009 versus 46¾ miles eliminated during 2008) both for 2009 and a similar reduced amount anticipated during 2010 will result in fewer leaks eliminated and an increase in new leaks. Liberty expects this to affect adversely Peoples Gas' ability to reduce its backlog. Furthermore, Liberty is concerned that leak repairs may be less productive and greater number of hours spent in making leak repairs per leak cleared. Liberty will evaluate the staff expended to repair and clear leaks and report its findings next quarter.

The table below shows the results from 2009 leak repair activities.<sup>176</sup> Pending leaks may include repaired leaks awaiting the results of a verification leak recheck.<sup>177</sup> The table compares results from 2009 with 2008. Peoples Gas began 2009 with 210 fewer (127 vs. 337) type 1 and type 2 leaks and ended the year with 83 more (242 vs. 159) type 1 and 2 leaks pending. This is a worsening of the leak threat year to year by 293 of the more hazardous classes of leaks. Peoples Gas received 361 more total new leaks during 2009 and cleared 182 fewer leaks (including type 3 leaks). Peoples Gas did not meet its goal of trying to clear 110 percent of the leaks received during the year, receiving 3258 leaks and clearing 2986 total leaks.

Peoples Gas met its goal of pending leaks being fewer than 10 percent of the total leaks repaired. ( $242 / 2986 = 8.1\%$ .) Peoples Gas should strive to manage its assets and leak repair activities to achieve a number in the lower single digit percentage.

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<sup>176</sup> Response to Data Request #468.

<sup>177</sup> Interview Request # 165, March 2, 2009.

<b>Status of Leak Indications</b>				
Calendar YTD (01/01/2009 to 12/30/2009)				
Class (Grade)	<u>1</u>	<u>2</u>	<u>3</u>	<u>Total</u>
Pending (as of 01/01/2009)	6	121	437	564
Received	1487	1640	131	3258
Cleared	339	1241	1406	2986
Adjustments	-1153	-279	1432	0
Pending (as of 12/30/2009)	1	241	594	836
Calendar YTD (01/01/2008 to 12/31/2008)				
Class (Grade)	<u>1</u>	<u>2</u>	<u>3</u>	<u>Total</u>
Pending (as of 1/01/2008)	3	334	482	819
Received	1488	1304	105	2897
Cleared	1086	1455	627	3168
Adjustments	-405	-24	429	0
Pending (as of 12/31/2008)	0	159	428	619

Liberty will continue to evaluate Peoples Gas leak management activities to reduce its leak backlog in the next quarter.

During the sixth quarter, Liberty evaluated Peoples Gas progress in reducing its leak backlog level. Peoples Gas annual leak survey crews begin new leak surveys for the calendar year in late March or early April of each year. At year-end 2009, Peoples Gas had a backlog of 836 type 1, 2, and 3 leaks. Type 1 leaks are the most hazardous; type 3 leaks are expected to remain non-hazardous until the next leak survey of that location. Therefore, Peoples Gas primarily applies its resources and repair crews on responding to new reports of odors and leaks, and on type 1 and type 2 leaks.

Leak Type	<b>South</b>	<b>Central</b>	<b>North</b>
<b>#1</b>	0	0	0
<b>#2</b>	37	21	159
<b>#3</b>	183	78	362
Repaired Leaks pending 2 <sup>nd</sup> clear	2	3	50
<b>Total<sup>178</sup></b>	222	102	571

Of the 836 leaks in backlog at year-end 2009, 28.8 percent were type 2 leaks. Peoples Gas works its type 1 immediate hazard leaks until they are repaired or can safely be re-classified to a lower hazard classification such as a type 2 or type 3 leaks. As of March 24, 2010, the time at which Peoples Gas began its new leak surveys for 2010, Peoples Gas was able to reduce its backlog of type 2 leaks to 21.7 percent. This compares with 44 percent or 333 type 1 and 2 leaks pending out of 757 leaks for the same period in 2009. The majority of leaks and leak repair efforts continue to be in the North District. Peoples Gas is awaiting streamlined leak reports via the new

<sup>178</sup>May 3, 2010 memo to John Just on leak counts.

Work Asset Management system. Peoples Gas management is currently tracking its leak repair efforts manually.

Liberty will continue to monitor Peoples Gas efforts in reducing its leak backlogs in the following quarter and on repairing more leaks than new leaks received.

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**Recommendation**

III-18

**Implement practical testing of leak investigation personnel.**

Leak investigation is not a textbook exercise. While there is a role for a written test in evaluating competence in the required activities, a practical test is also necessary to determine that the employees are able to perform adequately in the field.

Peoples Gas should begin to develop plans to address this recommendation within three months of the date of this report, and complete its implementation within one year of the date of this report

**Background**

Federal Code requires that Peoples Gas have qualified personnel to perform leak management activities and procedures, including leak surveys, patrols, the use of leak detection equipment, leak area investigation, pinpointing and repairs. Liberty determined that Peoples Gas' leak-investigation course material covers the requirements contained in its procedures. However, Peoples Gas evaluates its leak investigation personnel solely on a written test and does not have a means to test practical applications to leak areas, such as a physical or electronic leak simulation facility.

Liberty concluded that to ensure qualification of personnel responding to suspected gas leaks and gas odors, Peoples Gas needs to include practical testing of its leak survey crews and leak investigation and response personnel. A functional area such as leak response and investigation requires that Peoples Gas test its personnel in a practical examination such as in a "Leak Street" training environment or on leak investigation simulation software, in addition to any on-the-job testing or verification. Peoples Gas should include practical testing in its training program in order to qualify or re-qualify personnel.

**Peoples Gas' Implementation Plan**

Peoples Gas stated it would investigate the use of the electronic leak simulation software that was mentioned in Liberty's conclusion supporting the recommendation. It will also research field training sites such as other utility facilities (Ameren and Nicor), construction of in house leak fields, or use real life field examples. Furthermore, Peoples Gas committed to:

- Review leak simulation software by 1/31/2009.
- Research field training sites by 2/28/2009.
- Integrate the leak simulation software or field training (if feasible by this date) into leak investigation training curriculum and lesson plans by 3/31/2009.
- Complete new training for leak investigation personnel by 9/30/2009.

**Verification Discussion and Conclusions**

Liberty verified that Peoples Gas had conducted site visits at the simulated leak investigation training sites of NiCor, MGU (Michigan Gas Utilities), Ameren, and held a teleconference with

WPSR to evaluate various companies' practical leak-training facilities.<sup>179</sup> Research and site visits were completed in February 2009. Peoples Gas determined that other utility companies use a combination classroom and leak field training. Training varied from two days up to two weeks, with one company applying a comprehensive three-year apprentice program. The leak field facilities, consisting of buried gas piping with live gas capability, varied from applying two scenarios up to a leak field that can simulate 57 leaks. Utilities have used leak simulation software, but two of three found it to be "cumbersome" and not adaptive to a large classroom. Peoples documented their evaluation of training sites on a spreadsheet that formed the basis for conceptual development and design of its own leak field training facility. Peoples Gas identified a size of 200 feet by 150 feet for a training field, ideally located within the Central District, free of contaminants that would include buried gas piping and a means of varying leak situations in a controlled safe design.

Peoples Gas senior management approved of the concept, and directed that the leak-investigation field training site be incorporated into a larger, more comprehensive, outdoor training facility.<sup>180</sup> The practical training site would be used to centralize training of field personnel across the broader range of tasks for which practical training is now conducted in dispersed company sites or at actual distribution system facilities. The broadened scope of the proposed training facility precludes site determination until a date beyond the window for construction of a leak investigation practical training facility for use in the 2009 Training and Operator Qualification (OQ) evaluation program. Therefore, a site was selected for an Interim Leak Investigation Training Field for construction this spring. The interim leak field site is within Peoples Gas' Crawford Gate Station property. The interim facility will be 50 percent the size of the planned permanent leak field facility, and may not include inside (premise interior) leak training this year. Detailed facility design, material acquisition, and construction planning for this interim facility are ongoing.

The timing for a larger parcel for the permanent comprehensive outdoor practical training facility is under review. Peoples Gas has determined site selection criteria for this permanent, broader scope facility. Liberty will continue to monitor Peoples Gas' progress in developing the interim practical leak training facility, as well as the timing, site selection process, and the design and development of a new full-scale permanent facility.

During the third quarter of 2009, Liberty met with Peoples Gas<sup>181</sup> and reviewed its actions and progress in developing its interim field training site at the Crawford Station property, developing field training leak investigation training curriculum and lesson plans, and conducting actual training at the site by September 30, 2009. Liberty determined that Peoples Gas has developed its interim site to the point where it is operable and allows its instructors to present a series of actual leak indication scenarios for leak investigation employees to evaluate. The site provides for instructor evaluation of employees use of combustible leak indicators, leak site investigation, leak classification, and emergency response actions to take for a series of leak scenarios. Additional development and improvements will enhance the site's capabilities. Liberty also

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<sup>179</sup> Interview, May 5, 2009.

<sup>180</sup> Response to Data Request # 397.

<sup>181</sup> Interview # 133, August 5, 2009

reviewed associated lesson plans for investigation of inside and outside gas leaks, leak classification, and steps for leak management control and emergency actions. The lesson plan outlines appear to address the needs of practical evaluation, the practical situations developed for on-site leak evaluations are reasonable and instructive, and the forms developed to evaluate employees undergoing practical evaluation provide for consistent evaluations of covered tasks associated with leak investigations. Liberty plans to conduct observations and evaluations of actual training to complete assessment of the interim training facility for leak investigation.

During the fifth quarter, Liberty reviewed Peoples Gas' progress in implementing a practical testing of leak investigation personnel. Specifically, Liberty reviewed Peoples Gas' practical leak training schedule for 2010 planned for its new interim training facility at the Crawford Station field site. A larger scope (i.e., more comprehensive) training facility continues in the business development phase. Liberty will inquire about its development and implementation. Peoples Gas would use that new training facility for other field training beyond leak investigation (e.g., corrosion inspections, facility locating and marking).

For Peoples Gas' Field Service personnel, training dates and re-qualification testing and evaluation in 2010 for Outside Leak Investigation are scheduled for Tuesdays from June 15 through October 26. Peoples Gas has scheduled 22 Senior Service Specialist #2, 45 Senior Service Specialist #1, and 7 Operations Supervisors.

For Peoples Gas' Distribution personnel, training dates and re-qualification testing and evaluation in 2010 for Leak Investigation/Classification are scheduled for Fridays from June 16 through September 24. Peoples Gas scheduled 70 distribution personnel, including 45 Crew Leaders, 20 Street and Gas Mechanics, and 5 mechanic-operators.

Liberty will continue to evaluate implementation of training and examinations at the interim Crawford Station site, and development of the permanent, comprehensive field training facility.

During the sixth quarter, Liberty visited the interim practical leak training facility and observed testing and evaluation of field service personnel undergoing practical leak training.<sup>182</sup> Liberty discussed the progress Peoples Gas instructors are making using the interim facility for practical leak training. The instructors at the site as well as leak response personnel undergoing the training and testing stated that the practical training allowed the leak investigation process to become real and more meaningful and allowed for interaction between trainer and trainee to discuss the thought processes actually engaged in responding to simulated leak emergencies. The interim facility is now in use and beginning to accomplish its purposes:

- to improve the quality of Peoples Gas leak investigation personnel
- to provide for consistent thought processes in looking at the larger picture when first responding to a leak location
- evaluating the scope of the hazard
- reacting to protecting the public
- identifying the source of the leaking gas or gas odor

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<sup>182</sup> Interview #167, May 4, 2010.

- providing greater opportunities to discuss thought processes of those responding to emergency gas leak situations.

Peoples Gas needs to continue implementing training of its leak response personnel at the interim practical leak training facility as well as continue progress at identifying a site for the full-scale permanent facility for practical training. As its personnel undergo practical training and testing, Peoples Gas will identify refinements and improvements to its practical training and testing for consistent leak response approaches as well as needed emphasis. Completion of practical training of all leak response personnel will occur after the date of Liberty's implementation phase of its audits. At that point the ICC's gas safety staff will need to evaluate Peoples Gas' progress in developing and using the interim practical leak training facility, as well as the timing, site selection process, and the design and development of a new full-scale permanent facility.

Liberty considers Peoples Gas' actions and progress in developing and implementing an interim practical leak training facility acceptable. Peoples Gas should to continue its practical training and follow through in developing a permanent practical training facility. Liberty considers its verification work on this recommendation complete.

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**Recommendation**

IV-1

**Develop specific and comprehensive job descriptions.**

The positions of General Manager of Construction, Construction Manager, and Construction Technician do not have job descriptions, so incumbents are aware of their job duties and responsibilities. Peoples Gas should implement this recommendation within six months of the date of this report.

**Background**

Operators should have effective processes, which systematically evaluate and document all aspects during construction to ensure they achieve the quality of installations they expect and that their installation standards require.

During its audit, Liberty determined that Peoples Gas' Field Operations recently changed its construction organization. Prior to the spring of 2007, each district had a Construction Manager reporting to the General Manger of Construction. The Construction Manager also functioned as the "assistant District Manager." This has changed as of May 2007. The Construction Manager title no longer reports to the General Manager of Construction. In its investigation, which it conducted during the transition period, Liberty found that Peoples had not clearly defined the new construction title functions. This confused Peoples Gas' construction personnel as to their job tasks and reporting responsibilities. During interviews of the General Manager of Construction and District Construction Managers, managers indicated that they were unaware of activities within their job descriptions.<sup>183</sup> Further, Peoples Gas' job descriptions for the General Manager of Construction and District Construction Manager positions were very general in nature and did not identify specific activities.

**Peoples Gas' Implementation Plan**

Job descriptions for General Manager and Manager of Construction will be reviewed and revised to describe better job duties and reporting relationships. The job description for Technician is rather new and needs no revision. The majority of employees in these roles is incumbents, has worked either in or closely with others in the position, and knows what is expected of them as employees in their roles. However, Peoples Gas agrees that it would be beneficial to have more comprehensive written descriptions.

Develop additional job description details and Review Job Descriptions for General Manager Construction, Manager of Construction, and Technician with respective personnel by December 31, 2008.

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<sup>183</sup> Interviews with General Manager of Construction September 17, 2007, and District Managers Construction, September 18, 2007, September 20, 2007, and June 7, 2007.

### Verification Discussion and Conclusions

Liberty reviewed the details of job descriptions for the titles General Manager Construction, Manager of Construction, and Technician.<sup>184</sup> Liberty discussed the job duties with the Construction Manager for Central Shop,<sup>185</sup> as well as visited contractor construction sites that Peoples Gas Construction Technicians were overseeing.<sup>186</sup> Liberty determined that Peoples Gas Construction personnel were knowledgeable of their job description duties. The construction technicians were on their job sites carrying out their oversight duties of contractor operations. Additional construction sites must be audited to verify construction technicians are applying Peoples Gas contractor requirements and conducting inspection activities in a consistent comprehensive manner. The recommendation for developing comprehensive job descriptions IV-1 has been satisfied. However, recently, Peoples Gas has reorganized along functional organization responsibilities, and Liberty will review those changes to determine their effect on job descriptions, and whether additional job description updates are needed.

During the third quarter, Liberty met with Peoples Gas<sup>187</sup> and reviewed actions related to its construction activities. Liberty determined that the construction function and activities reflect wording in job descriptions. Liberty will check into this issue during the remainder of the implementation phase, but considers Peoples Gas' actions acceptable. As a result, Liberty considers its verification work on this recommendation complete.

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<sup>184</sup> Response to Data Request # 328.

<sup>185</sup> Interview, May 7, 2009.

<sup>186</sup> Interview, May 7, 2009.

<sup>187</sup> Interviews #134 and #135, August 4 and 6, 2009.

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## Recommendation

IV-2

### Review and formalize contractor requirements documents.

Part IV Engineering Specifications (Revised 10-25-07), should include a Peoples Gas letterhead and a document number or numbered engineering specification. Furthermore, documents containing contract requirements should have specific reference to appropriate Peoples' specifications or standards, other than just reference to "General Detail Drawing(s)." Peoples Gas should implement this recommendation within six months of the date of this report.

## Background

Peoples Gas has construction procedures and standards in its "Design Manual,"<sup>188</sup> engineering and construction standards and practices in its O&M Manual,<sup>189</sup> and construction contract requirements in "Part IV Engineering Specifications (Revised 10-25-07)."<sup>190</sup> Peoples Gas developed these standards and procedures to comply with federal safety construction requirements for design and installation of its mains and services. Liberty found that Peoples Gas' written construction procedures, standards, and practices were clear, comprehensive, and consistent with federal code requirements.

The document Part IV Engineering Specifications (Revised 10-25-07) lacked a Peoples Gas letterhead, document number, or numbered engineering specification. The contract requirements contained within this document generally appeared to address code requirements but lacked specific reference to Peoples Gas' specifications or standards, other than reference to "General Detail Drawing(s).

## Peoples Gas' Implementation Plan

Part IV Engineering Specifications will be revised and printed on Company letterhead. Its function will serve chiefly in the procurement process for bidding work. It will be supplemented with a useful Contractor Procedures Manual.

By December 31, 2008, Peoples Gas will assemble, construct, and distribute to its contractors, a Manual for Contractors whose basis is extracted from the Distribution Department Manual.

## Verification Discussion and Conclusions

Liberty reviewed Peoples Gas' revised *Part IV engineering specifications dated 11-01-2008 (1)*, and the Contractor Manual (or the Construction Manual), which contains copies of Peoples Gas' Corrosion Orders, General Orders, Main Work Orders, and Service Pipe Orders.<sup>191</sup> Peoples Gas also provided all of its contractors one hard copy and one CD version of the Construction Manual. The letterhead portion of Liberty's recommendation has been satisfied. However, the engineering specifications still refer to General Detail Drawings and do not refer to Peoples Gas

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<sup>188</sup> Response to Data Request # 9, Initial Meeting between PGL, ICC, and Liberty conducted May 10, 2007.

<sup>189</sup> Responses to Data Requests #1 and #2.

<sup>190</sup> Response to Data Request # 161.

<sup>191</sup> Response to Data Request # 329.

specifications or standards contained in the CD provided its contractors. The engineering or bidding specifications should reference the company's standards and work orders where appropriate.

During the sixth quarter, Liberty questioned Peoples Gas as to the status of their engineering bidding specifications referencing company standards and work orders (standard operating procedures). Peoples Gas stated that after reviewing the Part IV engineering specifications, it decided to re-write its bid specifications incorporating relevant sections from Part IV including other new specifications not contained in Part IV.<sup>192</sup> Peoples Gas plans to have the new document completed in June 2010.

This item remains open.

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<sup>192</sup> E-mail from T. Lenart, May 27, 2010 regarding recommendation IV-2.

**Recommendation**

IV-3

**Develop detailed construction inspection checklists for construction inspectors.****Background**

Liberty audits determined that a construction inspector (construction technician) in any one of the three geographic districts could cover up to five construction projects during the day. To evaluate effectively and consistently the quality of each construction project, construction inspectors need detailed checklists to enable them to evaluate systematically and comprehensively contractor construction crews' quality of work and compliance with Peoples Gas' construction standards and procedures.

**Peoples Gas' Implementation Plan**

Peoples Gas will create a detailed Construction checklist by 11/15/2008. Technicians will fill out the checklist forms for each job watched beginning November 1, 2008. Technicians will turn in the checklist forms with their weekly job recap sheets to the Construction Engineer.

**Verification Discussion and Conclusions**

During the second and third quarters, Liberty reviewed construction projects at various field locations. Liberty noted that inspectors were preparing and filling out construction inspection checklists for the assigned projects. During the times Liberty conducted its construction evaluations, there were a limited number of construction projects in progress. This issue needs further evaluation, especially when the number of construction projects increases.

During the sixth quarter, Liberty once again attempted and was unable to determine the effectiveness of the Compliance Monitoring Group and or Peoples Gas' construction technicians using construction inspection checklists on contractor projects. During its field audits, due to the reduced limited amount of contractor activity for main installations planned for 2010, no contractor main installations were in progress. It appears this recommendation will fall back to the ICC Safety staff to review and evaluate when construction activities are expected to significantly increase during 2011. Peoples Gas has developed a contractor-construction inspection checklist, and its construction technicians are trained and prepared to use it. Liberty will observe construction inspection if any is in progress during the remainder of this implementation phase and report on any deficiencies found. Liberty considers this recommendation verified.

**Recommendation**

IV-4

**Re-evaluate and justify the number of contractor construction projects assigned to its Construction Technicians.****Background**

A construction inspector (construction technician) in any one of the three geographic districts may cover up to five construction projects during the day. Construction technicians verify that contractor crews comply with contract requirements and company procedures. During July 2007, there were 13 to 14 contractor crews working at Peoples Gas within the three shops. At peak construction levels, there may be as many as 15 to 16 contractor construction crews working. This is too heavy a workload to allow for complete and comprehensive evaluations. As a result, Liberty concluded construction inspectors' responsibilities for this level of contractor construction projects at the same time detract from their performance.

**Peoples Gas' Implementation Plan**

The company accepts this recommendation and prior to receiving it was taking steps to increase the technician staff by two people to allow for increased supervision. One technician was hired and another is planned to start on 10/06/08. Peoples Gas anticipates that it will add three additional Technicians. Peoples Gas will determine the number of additional construction technicians needed for 2009 based on the level of construction activity planned for 2009. This approach should allow for average coverage of two jobs per technician and allow for adequate training and development time.

**Verification Discussion and Conclusions**

During the second and third quarters, Liberty reviewed construction projects at various field locations. Liberty verified that as of March 1, 2009, Peoples Gas had five construction technicians available to inspect contractor construction projects. Peoples Gas determined that staffing level is adequate based of forecasted workload. Liberty's second and third quarter evaluations verified that Peoples Gas had a limited number of construction projects in progress and that construction technician workload met Liberty's recommendation. Due to the Peoples Gas planned constrained capital construction budget for 2009, Liberty does not anticipate any additional issues during the year. Liberty will monitor the number of contractor crews assigned to construction technicians during the remainder of the verification phase, but considers Peoples Gas' response and actions adequate. As a result, Liberty considers its verification work on this recommendation complete.

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**Recommendation**

IV-5

**Require contracting crews to cut out and destructively test the first fusion joint of each day's work.****Background**

Peoples Gas has requirements in place intended to ensure sound plastic fusion joints. The company could further ensure sound quality fusion joints by implementing the best practice of requiring contractors to cut out a joint at the beginning of each day's work and destructively test the joint. This would ensure proper working condition of equipment as well as assess the quality of plastic joints performed that day.

**Peoples Gas' Implementation Plan**

Peoples Gas disagrees with the recommendation stating that the recommended practice is not widely used in the industry, and claims it is not a best practice. Peoples Gas states that the integrity of fusion joints is important. To address the intent of this recommendation, Peoples Gas proposes to increase the level of supervision crews receive. In addition each technician will be equipped with a pyrometer and check the temperature of heating plates a minimum of once per day. They will visually inspect joints and cut out joints that they feel are questionable. They will inspect contractor equipment daily for certification tags by TTC and visually check equipment for signs of damage or misalignment. They will also check the fuser's qualification card and status to insure that only qualified personnel are performing fusion joints.

**Verification Discussion and Conclusions**

During the second and third quarters, Liberty conducted field inspections of plastic projects constructed by both Peoples Gas and contractor crews. On the job-sites, Peoples Gas evaluated the plastic pipe for deleterious scratches, gouges, and the quality of the fusion joints. The pipe and fusion joints appeared acceptable.

During the fifth quarter, Liberty re-evaluated its recommendation that contractors cut-out the first fuse of the work-day to ensure proper working order of fusion equipment and quality of fusion joints. Liberty notes that:

- Peoples Gas reduced new construction activity during 2009 (and stated intention to again limit the amount of plastic construction projects scheduled for 2010)
- Peoples Gas increased the level of inspection oversight contractor crews receive
- Construction oversight requires Peoples Gas technicians to:
  - Have a pyrometer and check the temperature of heating plates a minimum of once per day, as well as visually inspect joints and cut out joints that they feel are questionable
  - Inspect contractor equipment daily for certification tags by TTC and visually check equipment for signs of damage or misalignment
  - Check the fuser's qualification card and status to insure that only qualified personnel are performing fusion joints

- Peoples Gas has not experienced any fusion joint pressure test failures for the past year.<sup>193</sup>

Accordingly, Liberty considers this recommendation closed and verified. Liberty will however take the opportunity to continue to evaluate Peoples Gas technicians' use of their pyrometers and fusion equipment and quality of fusion joints when on contractor work sites and report any anomalies in future reports.

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<sup>193</sup> Response to Data Request # 369 updated 1-21-2010.

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**Recommendation**

IV-6

**Develop a means to determine the qualifications of individuals performing covered tasks on job sites.****Background**

Liberty concluded that Peoples Gas did not systematically verify contractor personnel qualifications. Peoples Gas did not provide its contractor inspectors a means to determine readily the qualifications of individuals performing covered tasks on job sites. As a result, inspectors did not systematically verify those qualifications.

Liberty recommended that Peoples Gas develop a means to determine the qualifications of individuals performing covered tasks on job sites. To assist its personnel in verifying the qualifications of contractor personnel on job sites, Peoples Gas should develop a system to allow its inspectors to examine qualifications while on site.

**Peoples Gas' Implementation Plan**

In its implementation plan, Peoples Gas indicated that it would provide wireless remote access to LAN for construction technicians by September 30, 2009.

**Verification Discussion and Conclusions**

Liberty met with Peoples Gas' personnel on November 10, 2009, to review the material that describes the method that construction technicians use in the field to determine whether contractor individuals performing a covered task are qualified.<sup>194</sup> Peoples Gas provided all of them with wireless connectivity through their vehicle laptop computers to the company's intranet, which can access contractor OQ records.

Liberty also reviewed the procedure that construction inspectors use for checking records. It requires contractor OQ record verification on the first day at jobsite prior to any construction, when additional personnel are added to crew makeup, and with temporary replacement of personnel. It reminds the inspectors:

- 2 unqualified employees per 1 qualified employee
- If more than 3 years have passed since qualification date that employee is no longer qualified and will be treated as an unqualified employee
- If employee is not listed on OQ records or they are listed and there is no date of qualification they shall not perform any task and will be treated as an unqualified employee
- Fuser and Welder OQ records are checked by verification of date on qualification card they should have on them during any fusing and welding
- If a violation of the OQ policy is observed immediately stop construction and notify your Supervisor.

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<sup>194</sup> Response to Data Request # 442.

Liberty found this document to be extremely valuable to the construction inspector. The bullet points not only remind the inspector of important areas concerning OQ records, but also reinforce the inspectors' authority to stop construction when they observe a violation of policy.

Liberty tested the process through two inspectors in the field. They had access to OQ records. The inspectors described each step of the process to obtain required information. Liberty found this program acceptable. Peoples Gas should consider adding the tracking of individuals in a contractor crew rather than just the crew leader or foreman.

Liberty considers this recommendation verified and closed.

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**Recommendation**

IV-7

**Conduct audits of contractor crews as required.****Background**

Liberty found that Peoples Gas had not been conducting the required audits of its construction contracting crews in accordance with its Compliance Monitoring Group requirements. Peoples Gas established the Compliance Monitoring Group (CMG) in June 2006. One objective for CMG was to identify code deficiencies and get Peoples Gas to institute changes to ensure compliance with code requirements. The program included a requirement that Peoples Gas audit its contractor construction installation crews with a frequency of one audit per quarter for each contractor work activity. However, Peoples Gas' construction personnel performed only four inspections of crews involving contractor service installations work during one quarter for May and June 2007. Peoples Gas' construction personnel did not perform any audits of its main installation contractor crews during the year 2007.

Liberty recommended that Peoples Gas conduct audits of contractor crews as required. Peoples Gas should evaluate why it has not been conducting audits of its construction contracting crews in accordance with its Compliance Monitoring Group requirements, and remedy the problem to ensure it completes audits of all its contractor construction crews.

**Peoples Gas' Implementation Plan**

Peoples Gas indicated that it would complete audits of contractor crews as required in the QA/QC Manual.

**Verification Discussion and Conclusions**

Peoples Gas provided reports on the 34 audits of contractor crews conducted during 2009 through July 24.<sup>195</sup> On August 4, 2009, Liberty met with Peoples Gas personnel to discuss these audits. Liberty found that:

- Auditors from the CMG performed only four of the audits.
- One auditor performed five audits on the same date. The audited activities were:
  - Activity 5 - Plastic Main Installation - Direct Burial
  - Activity 6 - Plastic Main Installation – Insertion
  - Activity 7 - Steel Main Installation
  - Activity 19 - Corrosion Control Activities Distribution (CCAD)
  - Activity 5 - Plastic Main Installation - Direct Burial (different location from first bullet)
- The same auditor performed four audits again on the same date. The audited activities were:
  - Activity 6 - Plastic Main Installation – Insertion
  - Activity 19 - Corrosion Control Activities Distribution (CCAD)
  - Activity 7 - Steel Main Installation

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<sup>195</sup> Response to Data Request #427.

- Activity 12 - LP/MP Conversion
- Multiple activities were audited on the same date on other occasions.

It is likely that the multiple audits conducted on the same day by the same auditor are of questionable quality. It appears that Peoples Gas was simply trying to meet an audit frequency through perfunctory reviews. Peoples Gas indicated that a complete transition to the CMG would cure these issues. Peoples Gas originally established an action item target date of June 30, 2009, for this transition, but has since revised the date to August 30, 2009 (Refer to action item #5 under Recommendation V-8).

When contractor audits are accessed in Peoples Gas' computer program, the drop-downs do not identify specific crews or individuals of the contractor. They only reference the name of the contractor. It is important that Peoples Gas identify the crew leader as well as crew members in order to track audit deficiencies and who has had poor performance. Audits should emphasize evaluation of individuals as well as the company performing the work.

Peoples Gas needs to improve its contractor audit program. Liberty will perform additional verification work on this recommendation.

**Recommendation**

V-1

**Review and improve the curricula of all training classes.****Background**

Liberty's evaluation of Peoples Gas' training classes yielded mixed results. For example, in the Locating and Marking class, Liberty found the instructor to be a good communicator with good instructional skills, but there were deficiencies associated with his limited knowledge of the subject material and the material presented. In the Mains and Services class, the instructor referenced Peoples Gas' procedures, but made very little reference to federal and state regulations. The instructor was able to communicate the majority of the material, but was unable to provide more clarification or detail in several areas. Peoples Gas did not provide training in some tasks that personnel rarely perform. As an example, in the Mains and Services class, there was no training provided with respect to procedures, repairs, or reconnects for clear plastic pipe, even though Peoples Gas has some of that pipe on its system.

Liberty recommended that Peoples Gas review and improve the curricula of all training classes. Liberty noted several deficiencies in training curricula and materials. Peoples Gas should conduct, or have conducted, a complete review of training curricula and materials.

**Peoples Gas' Implementation Plan**

In its implementation plan, Peoples Gas said that it reviews lesson plans every year before it teaches classes. It will use input from QA/QC findings to fine tune classes. It will pay particular attention to Locating and Marking and Inside Safety Inspections.

**Verification Discussion and Conclusions**

Peoples Gas indicated that it has completed all planned actions for this recommendation and has provided information to Liberty. Liberty has not completed its review.

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**Recommendation**

V-2

**Review and reduce non-training job duties of instructors.****Background**

Liberty concluded that some training instructors had too many other responsibilities or too little experience. Instructors must have time to attend training courses to maintain and improve their knowledge of subject-area work activity. Instructors must also have time to conduct field observations of subject-area work activities and interface with employees in the field. Such knowledge is necessary to strengthen and broaden their understanding and knowledge in their subject areas and maintain their confidence in order to train others. Training courses are readily available and include training seminars, educational and teaching seminars, committees, and meetings. For example, Leak Handling instructors would clearly benefit by attending leak investigation and emergency response courses provided by Heath Consultants or by others such as TSI, MEA, and other gas safety seminars as well as field observations of actual leak response and leak investigations.

Generally, the number and quality of training sessions attended by instructors were not sufficient. Many instructors have little or no training in the subjects they are instructing. Liberty reviewed a sample of the training taken by training instructors, including the entire training of the Locating and Marking instructor. Liberty found that he had received no training on that subject between January 2002 and September 2007.

Liberty recommended that Peoples Gas review and reduce non-training job duties of instructors. The primary duty of the instructors is to instruct. This requires that the instructors take appropriate training themselves, both initially and with regular refresher classes, to become expert in the subjects they teach, and to maintain that expertise on a current basis. As currently configured, their job duties allow no time for their training. Liberty recommended that Peoples Gas implement changes within 18 months of the date of Liberty's final report.

**Peoples Gas' Implementation Plan**

In its implementation plan, Peoples Gas identified the following actions.

1. Analyze and determine the continuing education needs of TTS (Technical Training and Standards) instructors.
2. Research internal and external training programs for instructor staff and complete the scheduling of training.
3. Technical support resource needs to handle current non-training duties of instructors.
4. Final determination of need for additional technical support personnel.
5. Latest start date for the possible one additional technical support.
6. Instructors relieved of non-training duties.
7. Complete the first cycle of continuing education training for TTS instructors.

**Verification Discussion and Conclusions**

On February 10, 2009, Liberty reviewed the following documents submitted by Peoples Gas:

1. instructor courses memo, document dated November 19, 2008<sup>196</sup>
2. instructors non-instructing hours memo, dated November 12, 2008<sup>197</sup>
3. instructor continuing education research memo
4. MEA leak detection seminar information
5. Fischer regulator course information

Documents nos. 1, 3, 4, and 5 show that there is an effort to train TTS staff. However catch-up will be especially difficult because the heavy workload that presently exists for staff remains until additional personnel can be brought aboard, freeing up time for staff to attend training.

Peoples Gas has made progress on action items 1 and 2 of this recommendation, addressing training for instructors and making some progress in analyzing and determining the continuing education needs of instructors. However, it remains to be determined how many of the available training seminars mentioned in action items nos. 3, 4, and 5 above will be actually attended by TTS instructors.

Liberty is concerned about the information provided in document #2, which listed for each instructor a description of the non-instructor duties and hours spent on each task per year. There were 2,569 hours of non-training tasks and after subtracting a possible 546 hours for “maintenance” that could be given to others, it still left 2,023 hours. According to the TTS manager, the addition of one technical person would be able to handle these non-training duties. Liberty suggested a revisit of this analysis to take into consideration the hours in a year, vacation time, sick time, and special projects that arise.

With regard to action item #3, Liberty observed that although Peoples Gas has made commitments to increase staffing and reduce non-training activities for TTS instructors, the conditions at TTS remain the same. Positions that TTS requested last October recently have been approved, but the long delay in the approval process will drastically reduce the time necessary to train an additional technical support person that would relieve non-training duties of the instructors. The TTS manager is concerned about filling positions because management has changed the pension plan to eliminate any incentive for a knowledgeable union person to apply. The TTS manager and his staff are doing their best to meet their responsibilities regarding Peoples Gas’s Implementation Plan. However, their frustrations are evident with senior management's lack of support for timely resources needed to meet the target dates of the plan.

According to action item #5 in the implementation plan, the latest start date for the addition of one technical support person was March 31, 2009, and action item #6 states that instructors will be relieved of non-training duties by April 30, 2009. Liberty found that the technical support person requested by TTS last October was not approved until very recently. TTS is confident that they will be able to hire a technical support person by the target date. This would leave at most only one month to train that person in all the non-training activities. This is not realistic and there would be no way for Peoples Gas to relieve instructors of non-training duties by April 30, 2009.

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<sup>196</sup> Response to Data Request #366.

<sup>197</sup> Response to Data Request #369.

A more realistic target date for relieving instructors of non-training duties would be August 31, 2009. TTS should review and reassess the need for an additional technical support person by this same date and add the staff by October 30, 2009. Liberty discussed these action items with the TTS manager, and he agreed to revise the plan for recommendation V-2 accordingly. Liberty will continue to monitor this recommendation over the next several months.

In May 2010, Liberty discussed this recommendation with Peoples Gas.<sup>198</sup> The company provided new information on the non-training tasks and hours taken over from instructors by a technician. Peoples Gas has now reassigned or out-sourced non-training duties previously assigned to instructors. Peoples Gas also provided a listing of completed and scheduled continuing education for instructors. Peoples Gas has demonstrated progress, but Liberty concluded that it should report annually to the ICC Staff on instructor training activities and results.

Liberty considers this recommendation verified and closed.

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<sup>198</sup> Interview #175, May 19, 2010.

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**Recommendation**

V-3

**Revise the testing methods for evaluations of qualifications to perform covered tasks.****Background**

Liberty concluded that Peoples Gas' evaluation methods have several weaknesses. Peoples Gas' evaluation process may use a written examination as the only evaluation method. For example, Peoples Gas' training for leak surveys contains an 8-hour class with a written multiple-choice test and no practical examination. It is unlikely that it could ensure that an individual has the ability solely through a written examination without a practical evaluation.

The work-performance history review evaluation method is not typically used in the industry because it is not cost effective.

Liberty also observed that some tests focused heavily on narrow areas of the subject rather than the broader scale of knowledge required for a particular covered task.

Liberty recommended that Peoples Gas revise the testing methods for evaluations of qualifications to perform covered tasks. Peoples Gas should re-evaluate its covered tasks to include practical evaluation of critical tasks such as leak surveys in addition to written tests. Peoples Gas should also remove "work performance history review" as an evaluation method. Peoples Gas should revise the Distribution Covered Task Evaluation Technique in Appendix A of the OQ Program to reflect the above changes. Peoples Gas should also review its written tests to ensure that those tests evaluate the overall knowledge of the subject, rather than concentrating heavily on individual areas.

**Peoples Gas' Implementation Plan**

In its implementation plan, Peoples Gas listed the following actions it would take:

- Review new Leak Investigation Simulation Software.
- Presuming viability of the Leak Investigation Simulation Software, incorporate its use in practical evaluation for the leak survey function.
- Research the viability/concept design/budget costing of a "Leak Street" facility for personnel practical evaluation as an alternative to Leak Investigation Simulation software.
- Review Operator Qualification Program Documents and remove references to "Work Performance History Review."
- Review covered tasks and associated practical exams, develop and include practical exams where none exist for covered tasks that are deemed critical. Develop and include practical exams for less critical covered tasks if appropriate.
- Review covered tasks and associated written exams, revise exams where appropriate to ensure that those exams evaluate the overall knowledge of the subject.

**Verification Discussion and Conclusions**

Peoples Gas indicated that it has completed all planned actions for this recommendation and has provided information to Liberty. Liberty has not completed its review.

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**Recommendation**

V-4

**Ensure that all contractors have acceptable Operator Qualification Plans.****Background**

Peoples Gas could not produce the OQ Plan for an approved contractor. The OQ Plan or evidence of approved qualification for contractors should be readily available. Therefore, Liberty recommended that Peoples Gas ensure that all contractors have acceptable Operator Qualification Plans.

**Peoples Gas' Implementation Plan**

In its implementation plan, Peoples Gas indicated that all contractor OQ plans are current and available for Liberty's review.

**Verification Discussion and Conclusions**

Peoples Gas provided a list of contractors who perform certain covered tasks along with their OQ Plans.<sup>199</sup> Peoples Gas included the minimum requirements or "Rules for Contractor Operator Qualification Program Approval." Each contractor is to follow these requirements when submitting an acceptable Operator Qualification program document. The topics covered are:

1. Purpose/Scope/Introduction Descriptions
2. Definitions
3. Covered Tasks
4. Training
5. Responsibilities
6. MEA Covered Task Evaluators
7. Covered Task Evaluation Methods
8. Covered Task Qualification Intervals
9. Non- Qualified Individuals
10. Performance of Covered Task Contributing to an Incident
11. Evaluation if Reason to Believe Individual is No Longer Qualified
12. Changes Affecting Covered Tasks
13. Sub Contractors
14. Audits
15. Record-Keeping Methods

Liberty conducted a preliminary review of the OQ plans and found deficiencies in the following areas:

- 1.3 The contractors Operator Qualification Program shall note compliance to 49 CFR Part 192 Subpart N.
- 3.2 The contractors Operator Qualification Program shall include a matrix of applicable covered task as they apply to MEA covered tasks, contractor job classification, evaluation interval and evaluation method. (Example given in requirement document).

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<sup>199</sup> Response to Data Request # 437.

- 4.0 The contractors Operator Qualification Program shall detail training of individuals that may perform work on the operator facilities. (i.e., MEA covered task training.)
- 6.0 The contractors Operator Qualification Program shall include evaluator credentials with specifications.
- 7.0 The contractors Operator Qualification Program section shall detail MEA criteria for evaluation methods in a matrix format. (Sample MEA Contractor's Covered Task Matrix given in requirement document).
- 8.0 The contractors Operator Qualification Program shall specify MEA covered task qualifications not to exceed intervals of three years. (Sample MEA Contractor's Covered Task Matrix given in requirement document).

In May 2010, Liberty and Peoples Gas discussed the progress in addressing deficiencies in contractor qualification plans.<sup>200</sup> Later, Peoples Gas provided additional description of its process to update contractor OQ plans.<sup>201</sup> Peoples Gas has done an excellent job in reviewing contractor OQ plans, but the receipt and review of revisions from contractors is not complete. Liberty will continue to review Peoples Gas' efforts on this recommendation.

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<sup>200</sup> Interview #175, May 19, 2010.

<sup>201</sup> Response to Data Request 437, supplement.

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**Recommendation**

V-5

**Analyze crew leader retest failures.****Background**

Liberty found that Peoples Gas does not perform an evaluation of Operator Qualification (OQ) requalification test failures. Peoples Gas should perform an analysis to determine in what areas (covered tasks) crew leaders are failing retests. The number of job classifications involving crew leaders who needed a “90 day retest” for failing a distribution covered task is problematic, particularly since the retest report indicated “no concept” (no basic understanding) in many cases. Some crew leaders may concentrate on certain tasks and not perform other tasks often enough to keep their knowledge and skills current. Peoples Gas needs to re-evaluate training intervals due to the infrequent or repetitive nature of performing a covered task identified by the retest analysis.

**Peoples Gas’ Implementation Plan**

The action items for this recommendation are:

1. Initial review of covered task failures for the most recent OQ period
2. Review of covered tasks failures for the past three years
3. Revised material for upcoming refresher training covering an area of failures
4. Follow-up review of covered tasks failures for the subsequent OQ period.

**Verification Discussion and Conclusions**

Liberty reviewed the documents submitted by Peoples Gas regarding action items #1 and #2, and found them to be acceptable and complete.<sup>202</sup> The supervisor/instructor did an excellent job identifying each task failure, what caused the failure, and what to know to complete correctly a task.

The following is an example:

**TASK:** Install Cast Iron to Steel Dresser Coupling

Task failures due to:

1. Coupling attempted to be installed backwards
2. Gaskets installed on wrong type pipe
3. Gaskets installed backwards
4. Coupling centered not positioned 2/3 on cast iron, 1/3 on steel
5. Insulator left out

What to know to complete this task correctly:

- While the steel ring will not fit the cast iron pipe, the cast iron ring will fit over both sides (more loosely on the steel side). These rings need to be installed on the correct type of pipe material.

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<sup>202</sup> Response to Data Request #370.

- The gaskets are designed quite differently. The gasket for the cast iron main has a rubber “skirt” attached. This gasket is installed on the cast iron main with the skirt extending beyond the ring on the cast iron side.
- The gaskets are tapered. The taper points into the barrel of the coupling.
- This fitting does not get centered between the pipe ends. There is more cast iron pipe installed into this coupling than steel (2/3 – 1/3). This is to ensure the insulation of cast iron from steel during pipe deflection.
- The insulator components (plastic skirt and ring) need to be installed to complete the insulation of the two different pipe materials.

With regard to action item #3, Liberty reviewed the material and observed the deliverance by the General Supervisor/instructor during the Crew Refresher “Train the Trainer” training class on February 11, 2009.<sup>203</sup> For Distribution department between the years of 2006-2008, there were 118 employees failing OQ tasks. Of those failing, 78 employees failed at least one practical exam, some more than one. Forty employees failed one or more written tests only. While TTS (Technical Training and Standards) documented failures in all the various practical exams, the instructor focused on the most common practical OQ failures for those years. Again, the instructor did an excellent job in developing and presenting this material which was interesting to all those attending this class.

Peoples Gas gave the “Train the Trainers” Distribution Crew Refresher course to six supervisors, representing two from each shop. The distribution department from each shop sends their supervisors to TTS for training, and they in turn go back to the shops and train their personnel. In contrast, the Service department from each shop sends all their personnel to TTS for training. Distribution supervisors are responsible for planning, scheduling, and assigning work for employees engaged in construction, operations, maintenance, and repair of the gas distribution system. It takes seven to ten days for supervisors to conduct the necessary training at the shops, thus taking away valuable time from their primary activities. The first 45 minutes of this course related to how to be a trainer. In addition, an important part of this course was review of the 113 new and revised distribution orders and 15 bulletins that affect company procedures. TTS trainers are more familiar with changes in procedures and bulletins because they write them and they would be more capable to address questions or concerns from field personnel than to have supervisors present this information. The TTS trainers are more efficient and would be able to ensure that training would be consistent for all three shops. Peoples Gas can only accomplish this by having the TTS trainers do what they are supposed to do – train. TTS trainers could give this class at shop locations saving travel time for distribution personnel.

Peoples Gas has done an excellent job in responding to this recommendation. It will not complete action item #4 until November 25, 2009; this recommendation will remain open.

In April 2010, Peoples Gas provided information regarding action item #4, the follow-up review of covered tasks failures.<sup>204</sup> Liberty confirmed that Peoples Gas completed a thorough review of covered task failures for the 2009 Operator Qualification period. The review included both

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<sup>203</sup> Response to Data Request #371.

<sup>204</sup> Response to Data Request #491.

Distribution and Field Service OQ failures. It covered repetitive OQ failures in the following refresher training cycle. It provided feedback information from the OQ failure reviews to the corresponding training program and improved the training program where applicable. Employees failing OQ of covered tasks have been administered remedial training and have passed the examination or they are prohibited to perform the task. Peoples Gas developed an Administrative Directive (TTS AD 4.0) issued March 5, 2010, to ensure that the process of OQ test failure analysis with feedback to the training program and employees continues. This directive is an important part of responding in a positive manner to this recommendation because it makes OQ failure analysis a continuing part of the qualification process.

Liberty concluded that PGL has met the intent of this recommendation and considers it closed.

**Recommendation**

V-6

**Modify requalification interval practices.****Background**

Liberty found that Peoples Gas' requalification interval was not consistent with industry practices. Peoples Gas' OQ Plan, Appendix A, shows requalification intervals for each covered task. The maximum interval is three years. In addition, throughout Peoples Gas' O&M Plan, numerous sections state "... employee must re-qualify every three years." However, Liberty found that several employees were past their three years for requalification. Language in the OQ Plan states that, "Subsequent evaluations will be performed before the end of the third (or other as specified in Appendix A) calendar year after the calendar year in which the previous evaluation was successfully completed." Peoples Gas stated this could mean that a person could go as long as three years, eleven months before requalification. The majority of operators use either three years to the day or three years not to exceed 39 months for requalification intervals.

**Peoples Gas' Implementation Plan**

In its implementation plan, Peoples Gas accepted this recommendation and indicated that it would conform, by having Operations send personnel in for requalification by their due dates. It committed to updating the OQ Plan document and communicating the policy change by the end of 2008.

**Verification Discussion and Conclusions**

Peoples Gas modified its requalification interval practices and changed its OQ plan (section 5.2 evaluation of qualifications, page 8) to require requalification within three years or not to exceed 39 months.<sup>205</sup>

Liberty met with the TTS (Technical Training and Standards) manager and staff regarding the logistics of implementing the policy changes and there seems to be no concern with the coordination between shop managers and TTS. Liberty and the ICC Staff will monitor re-qualifications for the next few cycles.

Liberty has verified that Peoples Gas has made the necessary changes to its procedures to reflect implementation of the recommendation. Liberty's verification work is complete.

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<sup>205</sup> Response to Data Request #372.

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**Recommendation**

V-7

**Address the new Pipeline and Hazardous Materials Safety Administration (PHMSA) training requirements.**

**Background**

Liberty concluded that Peoples Gas had not addressed several new training requirements from PHMSA. Peoples Gas was deficient in responding to two recent PHMSA's Advisory Bulletins, both related to excavation damage prevention. One relates to ensuring that individuals critical to damage prevention at construction sites are qualified to perform the necessary safety tasks, including one call notifications, line locating and marking, and inspection of the construction activities. The other emphasizes the importance of accurately locating and marking underground pipelines before construction related excavation activities commence near the pipelines and to urge operators to follow the best practices on damage prevention found in the Common Ground Study. Peoples Gas has not trained its instructors on the new requirements and has not incorporated them into the relevant course curriculum.

Liberty recommended that Peoples Gas address the new Pipeline and Hazardous Materials Safety Administration (PHMSA) training requirements. Peoples Gas should train instructors and add to course curricula the new requirements and guidelines contained in the PHMSA Advisory bulletins.

**Peoples Gas' Implementation Plan**

In its implementation plan, Peoples Gas indicated that it would complete the following action items:

1. Comparative study of the requirements and guidelines from advisory bulletins 06-01 and 06-03 two current course curricula related to excavation damage prevention, and train instructors on this information.
2. Identify gaps in current training curricula shown by the comparative study to ADB 06-01 and 06-03 requirements and guidelines.
3. Review and compare the Common Ground Alliance (CGA) best practices to current excavation damage prevention processes training curricula; and the NULCA<sup>206</sup> locator training standards and practices to current training curricula.
4. Identify gaps in current training curricula shown by the comparative studies to CGA best practices and NULCA locator training standards.

Note: Peoples Gas revised these action items on February 11, 2009, during Liberty's on-site verification work.

**Verification Discussion and Conclusions**

Peoples Gas submitted the following documents during Liberty's interview on February 10, 2009:

1. Communications to TTS Sr. instructors and leaders

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<sup>206</sup> National Utility Locating Contractors Association.

2. Advisory bulletin (ADB-06-03)
3. Comparison of NULCA training standards versus Peoples Gas training material<sup>207</sup>
4. Peoples Gas versus CGA Best Practice Comparison
5. Phase 1 & 2 Gap Analysis<sup>208</sup>

Liberty reviewed Peoples Gas' communications to TTS Senior instructors and their leaders regarding the PHMSA Advisory Bulletins on safe excavation and safe excavation locating practices. The document summarized in a clear fashion the key messages from bulletins ADB 06-01 and ADB 06-03.

The company reviewed each NULCA "units of competence," which includes an explanation of the unit, elements of competence, and performance criteria. For each of these "units," Peoples Gas developed a response or recommendations for any deficiencies or clarifications that it might need. The review is complete, but Liberty will spend additional time to verify actual changes or additions in training materials, company procedures, and classroom presentations.

The Peoples Gas comparison to CGA best practices only responded to CGA practice statements involving locators. Others within Peoples Gas will need to review CGA information. Liberty noted in the comparisons that Peoples Gas referenced the DIGGER Handbook and General Order 0.800, which both state that excavators should use the practice of clearly marking in white exactly where excavations activities will occur prior to calling DIGGER. Peoples Gas as an excavator does not "white-line" its excavations for other owners of underground facilities. This practice would make it easier to identify exactly where the excavation will be prior to calling DIGGER. Peoples Gas should address its own failure to take actions it expects of others.

Peoples Gas did an outstanding job in developing these documents that clearly identify areas where the company can adopt best practices. In particular, the spreadsheets for Gap Analysis between CGA and Peoples Gas practices is thorough and includes gap description, corrective action, and any follow up that might be needed. Liberty will continue to verify the implementation of the findings.

Items 1, 2, 3, and 5 are complete but will need significant time to verify implementation. A major contributing factor to complete this recommendation lies in the scheduling of TTS training classes such as Operator Qualification (OQ), which does not start for distribution until June. TTS has canceled or added classes in the past and they have offered to send Liberty their training schedule on a weekly basis to help schedule future trips. The supporting document submitted by Peoples Gas for #4 above (Peoples Gas versus CGA Best Practice Comparison) is not complete, but Peoples Gas will address this as an added action item under Recommendation II-13.

Liberty will need to continue evaluating the implementation of this recommendation.

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<sup>207</sup> Response to Data Request #341.

<sup>208</sup> Response to Data Request #342.

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**Recommendation**

V-8

**Improve the Quality Assurance / Quality Control (QA/QC) Program.****Background**

Liberty concluded that Peoples Gas did not have an effective Quality Assurance program and practices.

Peoples Gas has a QA/QC document that provides for audits of various activities. The activities and associated checklists cover the appropriate documents and could be helpful in meeting the objectives of promoting improvement in fieldwork safety and quality and assessing compliance with procedures and regulations.

It is unclear whether any individual is responsible for the QA program. The written document only mentions some oversight by Peoples Gas' internal audit department.

The heart of the program is a large number of Performance Audits. The auditor for these audits is someone from the same organization and shop that is performing the audited activity. Thus, these audits may accomplish no more than provide a supervisor with a minimum set of activities to observe that should be part of normal supervisory responsibilities. The auditor is only to report on items from the checklist that he or she actually observes. If the supervisor is on site for only a short period, he completes the audit paperwork without observation or monitoring of most of the work. Peoples Gas assumes that by varying the time of day that it performs audits, it will eventually cover all items for each checklist activity. However, Peoples Gas does not track and compile the work activities audited so does not know if in fact all work activities are covered.

Peoples Gas recorded the completion of a large number of Performance Audits. However, the number of deficiencies recorded from these many audits has been incredibly small. At any gas company, Liberty would expect to see good audits identify some deficiencies. At Peoples Gas, the total number of deficiencies is only a very small percentage of the number of audits performed. It serves little purpose to have recorded the completion of hundreds of audits and minimal deficiencies other than to give a false sense of success. Peoples Gas' recorded corrective actions are only statements of the deficiency.

Peoples Gas' audits of contractors are practically non-existent.

Peoples Gas' supervisors and engineers have the experience and skills to conduct meaningful audits. However, due to either insufficient time to perform all of their assigned duties or simply a traditional lack of emphasis on quality, they either do not perform the audits or do not perform them adequately.

**Peoples Gas' Implementation Plan**

1) Peoples Gas proposes to make changes to its Quality Assurance and Quality Control (QAQC) Program requiring that each field activity be audited once (1) per quarter, requiring that all QAQC database checklist questions for each activity be audited, not just the questions pertaining to the tasks that the auditor observes when he happens to be on site. These activities are listed in

the November 2007 version of the QAQC Program manual and are in the following departments: Distribution, Field Services, Gas Operations (GOS), and Special Projects Field Services.

- 2) Peoples Gas proposes to increase the CMG staff by 6 Auditors.
- 3) Peoples Gas proposes to track audit results and corrective actions to completion in the current QAQC database. Peoples Gas will enhance the database features to allow this functionality.
- 4) Peoples Gas proposes to have the CMG (expanded staff) perform all the QAQC Performance Audits. These groups will be independent of the shops.
- 5) The CMG Group will also perform all contractor QAQC Performance Audits at the frequency specified in the QAQC Program manual (November 2007), one per quarter per job type performed. The transition schedule (Actions items to Complete-section below) is the same for the contractor audits as for the shop audits.
- 6) Peoples Gas proposes to designate one department / individual with responsibility for the QA/QC program.

### **Verification Discussion and Conclusions**

On August 4, 2009, Liberty met with Peoples Gas personnel to discuss the QA/QC Program. Liberty learned that the CMG Group consists of a supervisor and nine auditors, five of whom Peoples Gas recently hired. Four of the five new auditors have little or no experience in gas distribution. Peoples Gas formed the CMG group in May 2006 and began performing Corrosion Field Verification audits. In 2007, CMG added Valves and Inside Safety Inspections to its Field Verification audits. Also in 2007, CMG began conducting performance audits for activities in Distribution, Field Services, Gas Operations Section, and Special Projects Field Services. CMG's supervisor has been responsible for QA/QC program for a little over a year.

Peoples Gas documented and discussed with Liberty the efforts and improvements it has made to the QA/QC program.<sup>209</sup> These matters included the increased scope of CMG performance audits, the addition of auditors, enhancements to the QAQC database, and changes to the QAQC manual.

Peoples Gas indicated that, most of the time, crews knew when there would be audit field visits. This occurred so that the auditors would know for sure the time and location of a visit and would not waste time. However, on August 6, 2009, Liberty accompanied two veteran auditors separately at different construction sites for a field audit of Peoples Gas employees and a contractor. Before going to the field, the auditor obtained computer information that listed all crews including the crew leader and crew members, the Nextel number, truck number, crew size, location, and type of work. The auditor used the Navigate system to identify the location of Peoples Gas' vehicles. There was no reason why the audits could be unannounced. Unannounced audits would more likely lead to improvements in procedures, training, and work practices.

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<sup>209</sup> Response to Data Request # 426.

As discussed above under Recommendation IV-7, Peoples Gas audited multiple activities by the same auditor on the same day. It is likely that such audits are of questionable quality. It appeared that Peoples Gas was simply trying to meet an audit frequency through perfunctory reviews.

Peoples Gas provided a listing of all employees evaluated by CMG during the second quarter of 2009, the dates of actual valuations, the functional categories evaluated, and the results of the second quarter evaluations.<sup>210</sup> The reports showed that between April 1 and June 24, 2009, there were nine deficiencies from Distribution, four from Field Service, and one from Gas Operations. The audits covered anaerobic sealant, new service installation, service renewal, leak survey exposed pipe, main leak repairs, and locating of the gas facilities. However, the nine deficiencies from the Gas Distribution were:

1. no inspection tag on fire extinguisher
2. expired permit
3. customer house piping inspection-no access to basement
4. fire extinguisher in truck
5. employee failed to inspect his fire extinguisher and update tag
6. employee must wear his helmet
7. did not have a chipping tool
8. locator unable to verify location of the service for the school
9. inspection tag is not current

There were no deficiencies covering the construction, installation, operations, and maintenance of gas facilities for the distribution field activities. Because of the number and nature of the documented deficiencies, Liberty concluded that the audits were of questionable quality and ineffective in measuring compliance with company procedures and, through those procedures, with Federal Gas Pipeline Safety Standards and other applicable regulations.

On its field visits, Liberty questioned both auditors on their education, experience, and training. They had just recently performed audits for distribution activities. Their prior audit work was in corrosion verification audits. They had not attended the distribution classes for operator qualifications or any other supplemental training that would benefit their work activities. Both auditors agreed they needed training in order to do their job.

Peoples Gas uses a field evaluation form or checklist for each audited field activity. Liberty noted that the checklists did not contain revision numbers and dates. Later, Liberty confirmed that Peoples Gas had not revised the activity checklists for several years to reflect any changes to company procedures. However, there were many changes to company procedures this year alone, as Liberty observed during OQ training at TTS. Peoples Gas needs to keep the auditing tools up to date and make sure that auditors are aware of procedure changes.

For a QA/QC program to be effective, auditors need to be experienced and trained. This is not the case for Peoples Gas, especially considering the newly added employees. Liberty found that

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<sup>210</sup> Data Response # 401

the two veteran auditors it accompanied were professional, very capable, and willing to perform their duties if given the proper training. They were aware that they could cause improvement in field activities that affect gas system safety, employee safety, and the quality of work. Overall, a fundamental weakness in Peoples Gas' QA/QC program is the lack of qualifications within the auditing group.

Additional items related to this recommendation were:

- Liberty could not confirm whether, and if so when, the ICC received the promised progress report.
- Peoples Gas had a target date of June 30, 2009, to hire additional auditors. The company did hire additional personnel in July and August, but again, the major issue is the training and experience of these people.

Peoples Gas indicated that it would make additional QA/QC improvements by the end of 2009.

In January 2010, Peoples Gas provided information on an expedited and comprehensive training program for all CMG auditors.<sup>211</sup> It listed the distribution, field services, and gas operations activities for which it will conduct CMG training. The information also provided the status of training for each CMG auditor. The training program appeared to be comprehensive and the training schedule aggressive.

In February 2010, Peoples Gas provided a progress report on improving the QAQC program.<sup>212</sup> The report covered several topics, including:

- Improvements to the QAQC database that Peoples Gas has made, and intends to make, during the first quarter of 2010. The enhancements include tools to make audits of contractors more convenient.
- Comprehensive training for auditors.
- Most audits are now unannounced. The report explained how auditors could determine the field personnel locations in real time without contacting crews before an audit.
- Annual reviews of audit checklists to ensure they are up to date with field procedures.
- A mechanism to provide audit deficiencies to the technical training staff.
- The addition of an experienced person to be the supervisor of the Compliance Monitoring Group.

The ICC Staff and Liberty met with Peoples Gas to review recent efforts to improve the QAQC program.<sup>213</sup> There are six active auditors, three of which have limited or no gas distribution experience. One auditor is on medical leave and there are two vacancies, leaving CMG very lean in work force and experience. Because of pension and medical benefit rules, there is little incentive for former union, field personnel to join management and CMG. Peoples Gas must overcome these limitations through training and guidance to auditors. Peoples Gas relies on

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<sup>211</sup> Updated response to Data Request #432.

<sup>212</sup> Supplemental response to Data Request #438.

<sup>213</sup> Interview #177, May 19, 2010.

“non-OQ” training sessions (full OQ training but with written and practical tests not credited for covered task qualifications) for auditors to achieve knowledge competency of audited activities for the purpose of initially enabling auditors to observe and audit field employee performance. Peoples Gas acknowledged the need for additional training (practice) and field experience performing the activities by these auditors to become fully knowledgeable about the activities, to develop skills and abilities to perform covered tasks related to these activities, and to allow for OQ qualification on some of these covered tasks, as planned, in the future.

In May 2010, Liberty and the ICC Staff attended non-OQ training classes for CMG auditors.<sup>214</sup> Qualified instructors using good handouts and hands-on training conducted the training. However, Liberty found that the classes covered too much material for the time available. Liberty and the ICC Staff then accompanied an auditor in a field audit. Liberty observed that it was not clear that the auditor’s checklist was up to date (Peoples Gas explained that the checklists were updated except the program revision to include the revision date on the electronic forms had not been carried out), that the auditor was not fully knowledgeable in the audited activities, and that the auditor had not received any distribution on-the-job training. The auditor was one of the three who have limited or no gas distribution experience. This individual had just completed the Distribution non-OQ training class attended by Liberty and the ICC staff.

Peoples Gas needs to improve its auditor training; Liberty suggested that Peoples Gas consider:

- Trainers accompany auditors in the field during an actual audit or exercise
- Auditors accompany construction technicians in the field
- Auditors accompany General Supervisors in the field
- Auditors receive training from experienced retirees with distribution knowledge
- Fill the two vacancies with experienced retirees.

Following the interviews, Peoples Gas said that it would create a “Ride-With Program,” in which an experienced instructor would provide field education to CMG personnel.

Liberty will continue to monitor Peoples Gas’ efforts to improve the qualifications of its auditors.

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<sup>214</sup> Interview #174, May 18-19, 2010.

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**Recommendation**

V-9

**Provide the means for, and require that, General Supervisors spend more time in the field on job sites with their crews.**

Liberty recommended that Peoples Gas identify means of increasing the effectiveness of their General Supervisors, eliminating tasks that keep them away from their primary activities, and increasing their on-site supervision of crews. Peoples Gas' Operations Field Support should continue to develop its planning applications function to perform routine planning for code compliance activities to relieve General Supervisors from performing tasks and activities in the office. In addition, Peoples Gas may need to hire more General Supervisors. Peoples Gas should develop a written plan for meeting this recommendation. The plan should include schedules and specific goals for General Supervisor on-site time.

**Background**

Liberty conducted a series of field inspections of district operations, meetings with managers and General Supervisors, and observations of crews performing various code-mandated activities such as planning routine code-mandated inspections.<sup>215</sup> Liberty's observations of crews in the field at work locations generally found that General Supervisors were not at the job site. Liberty often observed General Supervisors accomplishing paperwork in the district office or performing planning functions at their desks.

Liberty concluded that General Supervisors do not spend sufficient time on job sites with their crews.

General supervisors should spend the majority of their time on site with field crews. However, they have a variety of office duties that keep them otherwise occupied. During Liberty's observations, they were usually not at the job site. Many of the office duties are routine planning activities that the Field Support Planning group could perform. The solution may also require hiring more General Supervisors.

**Peoples Gas' Implementation Plan**

In its implementation plan, Peoples Gas stated it should be allowed to implement the Work and Asset Management System (WAM) system and staff the centralized planning group before making a decision on this recommendation. Consideration must also be given to acceptance of related recommendations within this audit.

Peoples Gas stated that it is in the process of implementing a new computer system to replace some of the legacy systems in use today. The system will handle many of the office tasks currently performed by General Supervisors such as permit management. The system will also eliminate the need to review time and work tickets. Peoples Gas expects that the system will in itself, increase the effectiveness of the General Supervisors, both in the field and in the office.

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<sup>215</sup> Inspections and observations made June 5-7, 2007, July 17-19, 2007, August 13-16, 2007, September 17-20, 2007, November 14-15, 2007, April 30, 2008, and May 1, 2008.

In conjunction with the WAM system, the centralized planning group will take over some of the daily tasks currently performed by general supervisors. These tasks include planning and assigning regulatory work, assigning locate requests and assigning valve inspections.

In addition to the above, the Compliance Monitoring Group (CMG) will take over responsibility for performing all field QA/QC audits. This will free up time for supervisors to spend more time directly supervising crews.

Peoples Gas implementation plan dates include:

- CMG to perform all shop QA/QC audits by August 30, 2009
- Centralized Planning to manage safety surveys by February 1, 2009
- Centralized Planning to manage valve inspections by February 1, 2009

### Verification Discussion and Conclusions

Peoples Gas is in the process of developing a new Work and Asset Management System (WAMS), an integrated computer system.<sup>216</sup> WAMS is a \$22 million system that will be able to, among other functions, issue electronic work tickets, and time tickets. Peoples Gas expected the system to be complete in September 2009. Common of a project of this nature, the completion date has been delayed from September 2009 to January 2010.<sup>217</sup> Details, goals, and milestones for the new Work and Asset Management System (WAMS) are lacking. Peoples Gas asks that it await WAMS implementation and staffing of the centralized planning group.

In the meantime, Peoples Gas has proposed to reduce and eliminate certain activities that the General Supervisors currently perform and shift some of these to the Compliance Monitoring Group (Quarterly personnel QA/QC audits), and safety surveys and valve inspections to the centralized planning group. These actions will no doubt help relieve the General Supervisors of duties that others can readily perform, freeing up time that can better be spent on job sites with their field crews to assist in accomplishing work.

Peoples Gas needs to go further in its review and identify other activities that can free up more general supervisors' time and get them to spend more time with their crews on job sites.

Liberty has identified the time and effort associated with the distribution crew refresher course given annually. Peoples Gas at its Training facility gives a course to General Supervisors entitled "Train the Trainers" associated with the Distribution Crew Refresher course. During 2008, TTS (Technical Training and Standards) instructors gave the course to six General Supervisors, representing two from each shop. The service department does not waste the time of its general supervisors in this manner. Instead, each shop sends their service personnel to TTS for training by TTS instructors. Whereas the distribution department sends their supervisors to TTS for training and they in turn go back to the shops and train their personnel, a function that can and should be accomplished by qualified instructors from the training facility. It takes seven to ten

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<sup>216</sup> Response to Data Request #248.

<sup>217</sup> June 19, 2009, E-mail from Peoples Gas.

days for supervisors to conduct the necessary training at the Districts' distribution crew refresher course presentations thus taking away valuable time from their primary activities.

TTS instructors are more familiar with changes in procedures and bulletins because they write them and they would be more capable to address questions or concerns from field personnel than to have supervisors present this information. Liberty believes that:

- TTS instructors are more efficient in instruction,
- Would ensure that training is consistent for all three shops,
- Be able to provide this training by the instructors who write the Bulletins and changes to the standards, and
- TTS trainers could give this instruction class at shop locations saving travel time for distribution personnel.

Liberty will continue to monitor Peoples Gas' efforts in providing means for its General Supervisors to spend more time in the field on job sites with their crews.

During November 2009, Liberty evaluated the additional tasks the company assigned General Supervisors during the preceding quarter that prevented them from spending more time supervising crews on site in the field. Liberty determined that additional duties that prevented General supervisors from supervising field crews such as leak crews involved:

- Qualifying crew leaders and dedicated line locators in the use of pipe locating equipment. Trainers from TTS should accomplish this instruction and qualifying work for consistency.
- Participating in WAMS implementation activities or activities involved with training the trainers for WAMS roll-out.
- Assisting in and training field service crews in using Navigate to access maps as part of responding to gas emergencies.

Peoples Gas indicated that it is in the process of developing and increasing the number of General Supervisors slated for the Districts and for the Planning function.<sup>218</sup> This will free up more supervisory time to spend with crews in the field.

During the fifth quarter, Liberty evaluated the progress Peoples Gas made in freeing its General Supervisors from work activities that keep them from spending more time on field locations supervising work crews. The intent of this recommendation was to increase the effectiveness of the General Supervisor in accomplishing safety goals such as code compliance activities and reducing the backlog of hazardous leaks.

Peoples Gas identified a series of activities intended to accomplish the intent of this recommendation.<sup>219</sup> These activities involve the additional development of tasks and activities that other work groups and employees may accomplish effectively. The Centralized Planning Group has been able to take over a number of planning tasks, assigning work activities, coordinating and communicating directly with employees accomplishing the work activities to

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<sup>218</sup> Interviews #149.

<sup>219</sup> Response to Data Request # 470.

enable General Supervisors to supervise the crews accomplishing the more difficult and skilled work activities. Listed below are some of those activities that Peoples Gas reassigned to other groups.

- Centralized Planning Group
  - a. Valve inspections
  - b. Safety surveys
  - c. Safety survey data revisions
- Compliance Monitoring Group
  - d. Audits of quality of work and personnel performance (Field Audits)
- Corrosion Group and System Integrity Group
  - Corrosion inspection oversight
  - Managing and scheduling of corrosion control corrective actions
- Call Center
  - Scheduling of service restoration and reconnects
- IVR system and Special Projects
  - Scheduling of small and large meter changes

Peoples Gas is in the process of implementing the following activities that will enable greater time for General Supervisors to spend in the field.

- Investigation of all third-party damages with the System Integrity Group – 3rd Quarter 2010
- Providing the capability to access remotely desktop computer systems from vehicles. – 3rd Quarter 2010
- Operations Specialist assigned to City Wide dispatch freeing up Service Department Supervisors for field assignment. – 2nd Quarter 2010
- Centralized Planning Group to route service orders in Advantex – 3rd Quarter 2010
- Crew Refresher Training and Service In-Grade training will be conducted by Technical Training and Services Instructors – 1<sup>st</sup> Quarter 2011.

As part of Peoples Gas computer upgrade associated with the Work and Asset Management System (WAM), General Supervisors will no longer accomplish the following list of activities.

- Ordering Permits
- Ordering of facility locates
- Scheduling work requests
- Leak ticket management
- Assigning Leak Rechecks
- Planning of Reconnect/Renewals
- Facility Locate routes will be assigned by the System Integrity Group beginning the 3<sup>rd</sup> Quarter

These reassigned work activities should enable General Supervisors to spend additional quality time on field locations supervising their work crews and result in improved work quality, safety, and effectiveness. Liberty will monitor their effectiveness in enabling General Supervisors to increase their field supervisory capabilities.

During the sixth quarter, Liberty reviewed the progress made in freeing up time of General Supervisors to provide the opportunity for supervisors to spend more time and improve crews' effectiveness on job sites.<sup>220</sup> It appears some greater amount of time has been made available by shifting work to other groups. The implementation of the Work Asset Management system is in transition and implementation and is beginning to accomplish some limited functions that took the time of General Supervisors in the past. It is still too early in this process to verify how effectively the freed up time made available to supervisors is being used. Additionally, the implementation of WAM to various processes still needs to address a number of functions and dates for this are scheduled for June through August 2010. WAM went on line March 24, 2010, removing access to some legacy systems. Reports that provide documentation and status of some work activities stopped during this transition period as controlling and scheduling certain functions is shifted to planning and scheduling groups. The general supervisors that Liberty has met with on job sites were observed to be interfacing effectively with their work crews.<sup>221</sup> The maintenance and construction functions are scheduled to be implemented during the August-September 2010 period. This may not allow Liberty to adequately verify the effectiveness of providing more time for supervisors to spend on job location sites with their crews.

Liberty will continue to monitor activities related to this recommendation.

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<sup>220</sup> Interviews #165 and #166, May 3, 2010

<sup>221</sup> Interviews #168 and #169, May 5-6, 2010

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**Recommendation**

V-10

**Upgrade the legacy computer systems as planned.****Background**

Peoples Gas' computer systems were cumbersome to access and use. Peoples Gas operates and maintains several legacy computer programs and databases in which it stores information about its system components. The systems are cumbersome to access and use to evaluate data from which Peoples Gas makes system management and work management decisions. Peoples Gas needs to replace these legacy systems, convert its data, and implement a new modern system that allows it to evaluate its system components and streamline its scheduling of inspections and manage its work.

**Peoples Gas' Implementation Plan**

At the time of Liberty's investigation, the planned completion date was March 2009. In its implementation plan, Peoples Gas indicated that the current estimate for the new system to be available is September 30, 2009.

**Verification Discussion and Conclusions**

During the sixth quarter, Liberty reviewed the progress Peoples Gas is making in upgrading its computer legacy systems to a modern Work Asset Management system.<sup>222</sup> This multifaceted project has been in progress or planning for at least the past three years. WAM Phase 1 and 2 Go Live took place during the week of March 25, 2010. The legacy computer systems have been retired. Scheduling and management of work activities has been transitioning to the Centralized Planning Group. Systems to upgrade and include or interface with WAM involve Peoples Gas':

- Compliance tracking system (CTS) that identifies and tracks code requirement related work inspections
- Facility Management Data Repository (FMDR) that captures data and records from previous computer data systems such as mains (DMOS), services (DMIS), line valves (GMOS), regulator stations, remote operated valves and gate stations in old access databases. FMDR has the ability to retain unlimited information for the life of the assets.
- Navigate system captures completed work requests data and maps and provides this to field remote terminals (which will remain) contains GIS data and information, GPS vehicle tracking capabilities, FIRS (older work and ticket information system), leak survey tickets, rectifier information, leak sketches, DIGGER one call locate requests.
- Work Management Information System (WMIS) that identifies work and provides this to work schedulers and engineers
- Resource Planners and Work Schedulers communicate and coordinate work with field personnel and work crews

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<sup>222</sup> Interviews #165, #166 and #170, May 3 and 6, 2010

- Business Performance and Metrics groups are responsible to periodically review and monitor performance of various functions and assets to focus inspections and maintenance on recurring problems
- Field RT ARM are remote field terminals available in work crews vehicles and trucks, and supervisors vehicles
- Wireless hand held devices to track and report the progress of work activities
- Series of outputs including updates on completed work requests that go back to WMIS and GIS, and data and maps in FMDR
- Output and work status reports that provide timely data for Operations and Engineering managers on the status of code requirements, and projects.

Reporting in WAM<sup>223</sup> has had many defects that are being prioritized and resolved. Peoples identified<sup>224</sup> some priorities for the system's ability to generate reports including:

- Leak reports and leak surveys by June 1, 2010
- Cast and ductile iron related retirements by July 1, 2010
- Corrosion related activities by July 1, 2010
- Leak sketches in Navigate, and leak repair tickets electronically distributed via Navigate/WAM, mobile go-live September 1, 2010
- Leak recheck history is currently available in WAM
- Maintenance history of valves for the life of the asset. Reporting for valves was pending and was to be resolved during May 2010.
- Maintenance and Construction late August/September, 2010.

As with any project with the scope of WAM, many delays, defects, and interface issues have been experienced and are being resolved. Liberty will continue to monitor this project and report on its progress during the remainder of this audit implementation phase.

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<sup>223</sup> Response to Data Request # 492.

<sup>224</sup> Interview #166, May 3, 2010.

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**Recommendation**

V-11

**Develop a structured process for long term planning.**

Peoples Gas should develop its long-term plans for the distribution system in a more formal, structured process. This includes having plans with greater specificity, and developing and updating long-term objectives, intermediate goals, and recommendations.

**Background**

The Engineering Distribution Design Group performs the functions of reviewing system assets, determining future system needs, determining what system design parameters it needs to achieve in terms of system load, system pressures, and design-day requirements, and developing a delivery system capable of providing those supply needs for the future. Those system plans involve an assessment of the materials and components that Peoples Gas will need to replace and a framework for doing so. The framework includes guidelines for identifying current replacements, integrating those efforts with third-party construction projects, and meeting short- and long-term goals.

Liberty concluded that Peoples Gas' informal long-term planning process identified the following long-term goals.<sup>225</sup>

- Remove all cast iron and wrought iron from the distribution system by the year 2050.
- Extend and loop the 150-psig interstation system to enhance system reliability.
- Replace as much of the low-pressure distribution system as practical through low-pressure to medium-pressure conversions, retiring low-pressure regulator vaults, replacing vulnerable segments, and identifying higher cost-benefit opportunities.
- Extend the medium-pressure feeder supply network for adequate for supply pressure and emergency shutdowns of segments on the system.

Peoples Gas applies to this process spatial analysis, which is a general geographic identification of areas of its system installed with similar factors (*e.g.*, age, materials, and leak rates).

Peoples Gas' long-term planning efforts lacked structure. It did not involve a systematic, comprehensive, and documented process describing the issues evaluated and the process' findings, conclusions, and recommendations.

Liberty recommended that Peoples Gas develop its long-term plans for the distribution system in a more formal, structured process. This includes having plans with greater specificity, and developing and updating long-term objectives, intermediate goals, and recommendations.

**Peoples Gas' Implementation Plan**

In its implementation plan, Peoples Gas stated that it would provide a formal structured process for long term planning. The documentation of the process will be completed by December 1, 2008 and the implementation within 6 months. The process will include long-term goals and vision as well as a process for the evaluation of projects towards those goals.

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<sup>225</sup> Interview with Engineering Distribution Design May 15, 2008, and September 19, 2007.

Development and documentation of the process:

- Completion of the long term analysis and design – March 1, 2009
- Implementation of process by April 1, 2009

### Verification Discussion and Conclusions

Liberty found that Peoples Gas provided a framework for its long-term planning process.<sup>226</sup> It needs to supply the details of its process steps to allow Liberty to evaluate the process. The process steps included in the framework appear to be the correct ones. Explanations provided during the audit confirmed this.<sup>227</sup> Peoples Gas' long-term process steps have included:

- Identify demand forecasts
- Supply/receipt points
- Evaluate Design days versus a fault analysis
- Its plans include a full network model of its future system
- All LP to MP is completed
- CI/DI is replaced
- Recommendation guidance on replacements and improvements to go to Medium Pressure delivery system
- Peoples Gas' design day/peak day is 91 degree day (minus 20 degrees F with a 2 degree variance)
- Long-term planning reviews every project 8" and above to determine if it meets current, intermediate, and future needs.

Liberty requested that Peoples Gas provide additional details of its long-term planning process steps. Peoples Gas responded by stating, "This action item has a scheduled completion date of 3/31/2009. PGL is requesting a new deliverable date of 4/30/2009 due to unforeseen medical leaves in Engineering."<sup>228</sup> On April 27, 2009, Peoples Gas requested an extension of the target completion dates for this recommendation. Peoples Gas requested extensions due to a long-term disability of one of the individuals assigned to this project. The new dates are:

- 1 – Completion of long tem analysis and design by May 29, 2009
- 2 – Implementation of the process by June 30, 2009.

During the fifth quarter, Liberty reviewed Peoples Gas' long-term plan. It revised the plan March 1, 2010, to reflect completion of the cast and ductile iron main replacement program in 2030 consistent with the Illinois Commerce Commissions Order in Docket 09-0167.<sup>229</sup>

The revised plan includes details of process steps, identifies a future state plan of high-pressure supply extensions, two additional gate stations, loop lines for redundancy and reliability, plans to extend medium-pressure backbone feeder lines, and eliminates all low-pressure systems in favor of a medium pressure delivery system. The long-term planning process provides for coordination

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<sup>226</sup> Response to Data Request # 331.

<sup>227</sup> Interview #106, January 23, 2009.

<sup>228</sup> Response to Data Request # 387.

<sup>229</sup> Response to Data Request #331, supplemental.

between the gas engineering and gas operations departments to keep the replacement of the existing system aligned with the development of the future state network.

Framework steps of the planning process are as follows:

**a. Long term planning (over 10 years)**

Annual review and comparison at year end to assess progress made and feasibility of completion by the year 2030. Adjust the future state model based upon any major changes. Compare assumptions (such as growth rates) in the model with actual rates encountered. Adjust the planning roadmap as necessary to account for changes in progress or assumptions.

**b. Mid term planning (5-10 years)**

Annual review and comparison at year end to assess progress made and feasibility of completion by the year 2030. Adjust the roadmap and associated projects. Establish timelines with engineering for long lead-time projects at the beginning of the midterm planning session. Ensure that any longer term goals have been incorporated in the mid term planning time line and are included in the budgeting forecast.

**c. Short term planning (1-4 years)**

In the short term planning window the Gas System support department will provide recommendations as to the system replacement and system improvement projects. The gas-engineering department will incorporate the planning projects in the design and construction around emergency and public improvement projects based upon capital budget.

**d. Daily review**

The Gas System support department reviews and approves all projects in the design stage that involve proposed main larger than 6” in diameter and/or the retirement of 12” in diameter. This review is to ensure that the projects will help achieve the vision for the future state system. To do this each project will be evaluated by looking at the proposed design as compared to the future design model. System analysis may need to be performed to ensure that the proposed project and design will meet the existing needs of the network and to limit area isolation faults

**Planning Road Map:**

The planning process includes planning roadmaps, that layout the replacement schedule for the entire system. The goal is to replace all cast iron and ductile iron mains and eliminate the entire low pressure in the PGL system by 2030. The initial focus is replace 4” and 6” cast iron mains due to higher failures such as cast iron breaks and cracks. The other short-term focus is to replace the ductile iron medium pressure mains based upon recommendations from the gas-distribution system design-task group.

The system expansion related to additional gate stations and the expansion of the high-pressure main network are scheduled for the mid term. This allows for future expansion of the medium pressure system to support continued replacement of the low-pressure system. The current medium pressure system will support replacement of low-pressure smaller mains until that time.

The tables below show the replacement road map for the entire project, and a short-term system-replacement road map that depicts the five year road map. This outlines the work in the planning process. The road maps are a guide to aid in the planning and budgeting of future work and will need to be revised as part of the annual strategic planning process based upon other constraints such as capital dollars, public improvement, and unforeseen changes to any assumptions.

**Replacement Program Road Map**

	2011-2015	2016-2020	2021-2025	2026-2030
Gate Station Installation				
High Pressure Extensions				
HP-MP Vaults off of Existing HP				
HP-MP Vaults off of Proposed HP				
Installation of MP mains				
Retirement of LP-MP Vaults				
Retirement of DIMP mains				
Retirement of CIMP large headers > 16"				
Retirement of CIMP large headers 10" and 12"				
Retirement of CIMP 4" , 6" and 8"				

**Short Term System Replacement Road Map**

	2011	2012	2013	2014	2015
Gate Station Installation					
High Pressure Extensions					
HP-MP Vaults off of Existing HP					
HP-MP Vaults off of Proposed HP					
Installation of MP mains					
Retirement of LP-MP Vaults					
Retirement of DIMP mains					
Retirement of CIMP large headers > 16"					
Retirement of CIMP large headers 10" and 12"					
Retirement of CIMP 4" , 6" and 8"					

Liberty’s review determined that Peoples Gas has accomplished the intent of this recommendation. Liberty will continue its review to ensure that Peoples Gas is implementing the process steps and plan details.

During the sixth quarter, Liberty reviewed Integrys’ engineering support provided to Peoples Gas in its implementation of Peoples Gas Long Range Planning.<sup>230</sup> As discussed above under Recommendation II-3 regarding increased cast iron main replacement rates in the North district, these recommendations are significantly affected by the Illinois Commerce Commission’s order in case number 09-0167, in which Peoples Gas has been ordered to replace its cast and ductile iron gas pipe by the year 2030 (a 20-year replacement program called System Modernization).

<sup>230</sup> Interview #170, May 6, 2010

Liberty attempted to verify how Peoples Gas is implementing the process steps and details contained in its long-range plan. The long-range plan was updated to address the expedited 20-year main replacements, and Liberty reviewed Integrys' engineering support for Peoples Gas. Liberty determined that during 2011 as well as the years following, Peoples Gas plans to retire 100 miles of cast/ductile iron main. (During 2008 Peoples Gas replaced approximately 20 miles and during 2010 only plans to replace 10-15 miles of cast and ductile iron main.)

At past annual levels of retirements, for every 3 miles of cast/ductile iron main retired, 4 miles of new plastic main has been installed due to the practical and economical approach of replacing old main with new main on both sides of the street. This will require Integrys engineering support for Peoples Gas will have to identify the 100 miles of cast and ductile iron mains to be retired based primarily on safety risk priorities, as well as engineering 130+ miles of new main installations annually for the foreseeable future.

Peoples Gas is in the early stages of implementing its System Modernization affecting some 1,850 miles of these relatively vulnerable materials. Peoples Gas/Integrys is in contractual relationship with Jacobs Engineering to help manage the oversight of the cast/ductile iron retirement program, and held a joint kick-off meeting April 20-25. Peoples Gas, with the assistance of Jacobs Engineering, is developing a master plan document that will address the various aspects of this system improvement program.

Regarding Peoples Gas' engineering support and how it is implementing its long-range plan, Integrys engineering is working on a 2-year plan as well as details of a five-year plan and the framework of a 10-year plan for main replacement project priorities that is meeting the details of Peoples Gas' long-range plan. Peoples Gas is identifying and ranking zone areas it intends to address earlier in the program. Many of the mains with higher maintenance issues, with higher leak rates, vulnerable service lines, and vulnerable mains installed prior to 1920, are located within the North District and will be assigned higher replacement priorities. Peoples plan includes installing plastic feeder lines as header mains up to 24-inch in diameter, however most header mains will be 8-inch and 12-inch in diameter. The plan is to operate a 22-psig medium pressure distribution system. The 2-year plan begins with medium pressure 4-inch and 6-inch cast and ductile iron replacements. As of May 1, 2010, engineering has completed design for approximately 45 miles and has identified 100 miles of projects. Integrys Gas Engineering has provided engineering support for Peoples Gas that is consistent with Peoples Gas Long Term Plan.

This work will be a significant increase in main construction, service line meter and regulator installation, converting and or retiring 15 pressure-regulating stations per year, as well as live gas tie in work. It will present a challenge to Peoples Gas and will require increased ICC Safety staff resource commitments to ensure safety code requirements are met.

Liberty expects that the work to implement the 20-year system modernization program will accomplish the intent of this recommendation. Liberty considers its verification of this recommendation complete.

**Recommendation**

V-12

**Develop and implement a procedure for up-rating low-pressure mains.****Background**

To upgrade its low-pressure system, Peoples Gas inserts or replaces low-pressure mains. Peoples Gas does not normally consider up-rating existing low-pressure mains. However, if Peoples Gas does up-rate pressure in segments of its system, its process must meet the requirements of 49CFR192 subpart K. This subpart requires that Peoples Gas' up-rating process include the evaluation of data on affected system components and their capability of withstanding new and higher pressures, as well as detailed procedures to increase safely operating pressures. Peoples Gas did not have a written procedure for the up-rating process (converting low-pressure mains to a higher operating pressure) that ensures the design and capability of system components are within the limits of the pressure up-rating.

**Peoples Gas' Implementation Plan**

Peoples Gas' Technical Training and Standards will revise Main Work Order 7.100 of the Distribution Manual to address up-rating mains in accordance with Pipe Safety Regulations Part 192.557, Subpart K by March 1, 2009.

**Verification Discussion and Conclusions**

During the third quarter, Liberty reviewed Peoples Gas' main work order 7.100 dated March 2, 2009, titled "Procedure for Uprating Steel Mains from Low Pressure to Medium Pressure." Liberty determined that the revised procedure contains requirements for Peoples Gas:

- Gas Engineering Department to review the design, operating, and maintenance history of all the main segments to be converted,
- Field Operations to complete a leak survey of the area of all the main segments to be converted and repair any leaks found and make any repairs, replacements or alterations in each segment of pipeline that are necessary for safe operation at the increased pressure.

Peoples Gas actions meet the requirements contained in the recommendation. Liberty considers its verification work on this recommendation complete.

**Recommendation**

V-13

**Review industry committee participation.****Background**

Peoples Gas employees participate in a number of industry committees, which provides the company with insight into industry work methods, and practices, as well as provides insight into standards development and enables the company to participate in research and development forums to ensure its designs and procedures keep abreast with the best approaches to operating gas systems.

However, the current assignments of personnel on various industry committees have resulted in too many committees assigned to the same individual.<sup>231</sup> The company has not reviewed its participation to limit the number of committees assigned to any one individual. Multiple memberships may overwhelm certain individuals and result in ineffective participation, negating the company's goals for its participation.

**Peoples Gas' Implementation Plan**

A review of AGA committee assignments will be conducted by 3/31/2009. Assignments of individuals to multiple committees will be verified to ensure that logic exists for multiple assignments and adequate time is allocated for effective participation.

**Verification Discussion and Conclusions**

During the second and third quarters, Liberty reviewed Peoples Gas actions<sup>232</sup> to address the participation in industry committees. Liberty verified that Peoples Gas is reviewing its employee's participation in industry committees on an annual basis. Liberty reviewed the committee assignments as of March 2009 and determined that Peoples Gas has diversified the committee assignments and is ensuring that employees participating are not overwhelmed with too many committee assignments and attending meetings. Peoples Gas is meeting the intent of this recommendation. Liberty considers its verification work on this recommendation complete.

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<sup>231</sup> Response to Data Request #246

<sup>232</sup> Interview #131, August 5, 2009.

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**Recommendation**

V-14

**Establish the combined Integrys successor to the Peoples Materials Standards Committee (MSC).****Background**

Following the acquisition of North Shore Gas, Peoples established a Materials Standards Committee (MSC) under ICC Peoples Gas Light and Coke Company Order #11. Order #11 established MSC responsibilities that included evaluation of new and existing materials, tools, and equipment, assuring proper disposition of inactive and obsolete materials, evaluating revised material procurement and delivery system, and making recommendations for improvement. With the merger with Integrys, the MSC was disbanded, to be replaced by a yet to be named committee as part of the Integrys Energy Group with a similar mission. Peoples Gas should ensure that the lack of continuity of this committee during the transition period does not compromise safety policies.

**Peoples Gas' Implementation Plan**

The successor Integrys committee for oversight of procedures and materials procurement processes for all Integrys gas distribution utilities was chartered on November 13, 2007, called the Gas Standards and Component Materials (GSCM) Committee. Its organizational meetings occurred in December 2007 and January 2008. Committee activity subsequently commenced. Two quarterly meetings were held in May and July 2008.

**Verification Discussion and Conclusions**

During the second and third quarters of 2009, Liberty evaluated Peoples Gas' actions to address its materials procurement processes. Liberty verified that under SAP, Peoples Gas<sup>233</sup> used the enterprise resource planning system for materials evaluation until January 2008. Peoples Gas followed a procedure to ensure that it checked fittings at the warehouse to ensure they met quality requirements and that it received the proper fittings. Liberty reviewed the minutes of Peoples Gas' GSCM Committee meeting held October 27, 2008,<sup>234</sup> as well as the minutes of the GSCM held April 23, 2009<sup>235</sup>, and verified that the GSCM Committee is meeting on a quarterly basis, and is addressing the materials and tools issues appropriately meeting the intent of its recommendation. Liberty considers its verification work on this recommendation complete.

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<sup>233</sup> Response to Data Request #236.

<sup>234</sup> Response to Data Request #332.

<sup>235</sup> Interview #131, August 5, 2009.

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**Recommendation**

VI-1

**Implement a modern and effective performance measures program.****Background**

Effective organizations measure progress towards achieving objectives, benchmark against comparable organizations, and use performance measures to identify good performance and problem areas, as well as to measure the effect of actions implemented to improve performance. Liberty found that while Peoples Gas departments use various forms of measurement to report on meeting goals or performance, Peoples Gas lacked a consistent, comprehensive system of measures that it shares across the company. Liberty recommended that Peoples Gas should:

- Identify key safety performance measures,
- Set acceptable levels of performance,
- Hold managers accountable for meeting those targets.

To address adequate safety performance, Liberty recommended that Peoples Gas, with expert assistance, develop a documented plan for improving its performance measures program. The plan should:

- Replace the obsolete systems that inhibit a useful performance measures system,
- Provide for comprehensive arrays of performance metrics,
- Significantly improve the completeness, presentation, and dissemination of performance reports,
- Contain a schedule for their implementation, and
- Commission a computer-system study that evaluates how best to integrate its systems data and generate reports.

**Peoples Gas' Implementation Plan**

In its implementation plan for this recommendation, Peoples Gas indicated that it contracted with Huron Consulting to develop the plan for identifying and reporting on performance metrics. This plan will include identifying industry best practices regarding definition of performance metrics. The plan will evaluate the most effective way to gather the required information and identify appropriate delivery mechanisms, including a schedule for implementation. Peoples Gas was not prepared to commit to commissioning a computer study because the data would be available from existing computer systems and it was not clear that a new system would be required.

Peoples Gas stated that:

- By March 31, 2009, it would complete defining performance metrics and provide a list to Liberty, and
- By June 30, 2009, it would complete an implementation plan for performance reporting metrics.

## Verification Discussion and Conclusions

During November 2009, Liberty discussed Peoples Gas' process and actions in identifying possible metrics, goals, and program initiatives for which metrics might apply and the groups within the company for which those metrics would be important.<sup>236</sup> Peoples Gas explained that its consultant performed a metrics/key performance indicator (KPI) survey and combined the results with a survey for damage prevention metrics.<sup>237</sup> The first column in the table below contains the major areas for which Peoples Gas compiled possible metrics from six gas companies, along with the number of metrics compiled for each major group area. The second column contains the reduced number of "Key" performance metrics Peoples Gas' process identified to date for its area groupings.

**Gas Operations Key Performance Indicators**

<b>Phase 1</b> (extensive list of possible metrics) # of metrics by area grouping	<b>Phase 2</b> (reduced list of KPIs – preliminary version created) # of metrics
Personnel Safety / Personnel – 10	Personnel Safety / Personnel – 4
Construction – 15	Construction – 3
Operations / Customer Service – 14	Operations / Customer Service – 11
Maintenance – 22	Maintenance – 6
Compliance – 7	Metering – 2
	Budget

Liberty reviewed the criteria Peoples Gas' senior gas operations management defined for establishing metrics.

- Metrics should be easy to track and clearly defined.
- Metrics should enable Peoples Gas to benchmark themselves against other natural gas distribution companies.
- Metrics should be actionable. Results of tracking these items should lead actions to improve performance
- Metrics should hold people accountable.

Liberty believes these criteria provide the basis for a sound approach in identifying metrics.

Liberty reviewed the lists of possible metrics and the preliminary reduced list of key performance indicators Peoples Gas' process identified to date. The accomplishments to date are a start, but Peoples Gas must identify additional metrics to make the system more robust to satisfy this recommendation. Peoples Gas stated that the following steps are in progress:

- Establishing a timetable for when data must be verified and submitted,
- Creating a sample report with graphical depiction of progress,
- Approving a final report format,

<sup>236</sup> Interview #147, November 10, 2009.

<sup>237</sup> Response to Data Request #455 – (6 companies responded to the survey).

- Creating and distributing the first KPI report for months end and 4<sup>th</sup> quarter of 2009 data. Target date is January 29, 2010.
- Converting and making KPI reports available on-line on PowerNet. Target date is March 2010.

Liberty's audit of engineering and operations areas found that Peoples Gas employs a number of metrics to track and manage its programs. Peoples Gas needs to integrate these into the metrics system under development. Liberty believes Peoples Gas' metrics approach needs to include complete arrays of metrics that present, in easy to understand and graphical formats, performance at varying levels of detail that management at various levels can effectively use to hold people accountable. The intent is to allow Peoples Gas to discern areas that need improvement, understand performance trends, and make adjustments in operations. The existing set of metrics begins that process and provides a framework by which Peoples Gas may meet these ends.

Liberty requested a copy of the study Peoples Gas conducted to identify and select performance metrics applicable to Peoples Gas' system and operations. Peoples Gas stated it used a systematic approach to identify and establish select performance metrics to satisfy to Liberty's recommendation of creating and tracking Key Performance Indicators (KPIs).<sup>238</sup> Peoples Gas identified the process it used as follows.

- Research was done to look at how other companies and internal departments track and report on performance metrics. Common themes and standards were established to set a base line of data to track.
- An extensive list of possible metrics to establish was created based on the research done. Clear areas of concentration were established to group common possible metrics.
- A meeting of Peoples Gas senior gas operations management was held to define criteria for establishing metrics. The following criteria were agreed upon:
  - Metrics should be easy to track and clearly defined.
  - Metrics should enable Peoples Gas to benchmark themselves against other natural gas distribution companies.
  - Metrics should be actionable. Results of tracking these items should lead actions to improve performance
  - Metrics should hold people accountable.
- Based on the criteria established above, the extensive list was reduced to "Key" performance metrics and definitions were established for each measure.
- Goals, frequency, and responsible persons were established for the individual Key Performance Indicators.
- A preliminary version of the metrics report was created and distributed.

Liberty requested a copy of Peoples Gas' implementation plan for performance metrics, and Peoples Gas provided the following.<sup>239</sup> It identifies the steps Peoples Gas intends to take to implement the new performance metrics strategy and reporting:

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<sup>238</sup> Response to Data Request #455.

<sup>239</sup> Response to Data Request #456.

- Once performance metrics (KPIs) are defined, the individuals responsible for the gathering and reporting the data of the individual components will be notified. (Completed)
- A timetable for when data must be verified and submitted will be established. All reporting will be either quarterly or monthly depending on data required and frequency available.(In Progress)
- Sample report with graphical depiction of progress will be created and distributed for approval. (In Progress)
- Final report format is approved and distributed. (Dec. 2009)
- First KPI report is created and distributed for months end and 4<sup>th</sup> quarter of 2009 data. (Jan. 29, 2010)
- KPI reports will be converted and made available on-line on PowerNet. (March 2010)

Peoples Gas also provided selected individual performance goals from their annual reviews (2009) so that Liberty could evaluate whether additional detail and accountability were in this part of overall performance measures. Peoples Gas management pay is a combination of both individual performance and their Division/Group KPI for the bonus. The previous discussion focused on the KPI or bonus component. There have also been changes and improvements in the individual goals to support the company's overall goals and more importantly its targeted goal of compliance with all ICC and US DOT safety regulations and requirements. These individual goals follow the SMART basis in that they are Specific, Measurable, Attainable, Realistic, and Timely. They cover the basic areas of individual's performance such as compliance issues, safety issues, process improvements, and costs. A review of selective performance goals for the Vice President of Operations and several reports and their reports along found that the goals follow both a bottom-up and top-down approach. In other words, the goals for subordinates are additive for the supervisor. Thus, if a manager has a goal to meet some compliance issue, his superior also has that goal along with other compliance goals from his other subordinates and thus goals flow upward and likewise downward from the vice president level.

Below is an example of that goal setting based on the 2009 goals<sup>240</sup>.

- **Two Levels below VP:** "Effectively utilize designated resources to complete the Inside Safety Inspection (ISI) campaign accurately and on schedule."
- **One Level below VP:** "Demonstrate actions to improve Gas Operations - Meet operational targets for the department (as appropriate for the position) - Specific expectations will be identified for the employee based on their specific role or the needs of the department (e.g. ISI completions; DNP targets; leak response times; pending leak counts; CEA levels; hits on other utilities; etc)."
- **At VP Level:** "Maintain strong, excellent relationships with key external partners (e.g. ICC, CDOT & CDOE).

Liberty conducted interviews with a cross section of engineering and operations managers and officers to determine how well they received the KPI and individual metrics.<sup>241</sup> Most

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<sup>240</sup> Response to Data Request #458.

<sup>241</sup> Interviews #151 to #161 in February 2010.

interviewees commented that having both group and individual goals and metrics was an improvement over past methods of holding individuals accountable and responsible for safety and compliance mandates. Engineering does not have KPIs, but is working to including some in the near future. Operations has many KPIs, some of which touch each operating group. In addition, there are specific, measurable, attainable, realistic, and timely goals for all of the managers in operations.

There needs to be more consistency in reporting and following up on goals. A new central group under the Vice President of Operations called Business Performance is being set up from individuals who assisted in the implementation of the new business computer system WAMS. This group will be developing and reporting on both KPI and individual metrics for all of operations. Engineering also believes such a group should be set up for all of engineering or the entire company.

Based on the data obtained through various data requests and these recent interviews, Peoples Gas has implemented all of recommendation VI-1.

## Appendix A – Peoples Gas' Implementation Plan

#: I-1 Updated 1/22/2009

**Recommendation:**  
 Improve the management-level organization.

Peoples Gas should have one manager for each of the functions listed below, who would have matrix responsibility for that function for all three divisions, and report to the Vice President on that function: Damage Prevention, Corrosion Control, Leak Management, Operator Qualification and Training, Quality Assurance and Performance Monitoring

**Owner:** Ed Doerk / Reply be T. Lenart  
**Owner's Email:** [tlenart@peoplesgasdelivery.com](mailto:tlenart@peoplesgasdelivery.com)

**Required Timeline, per Liberty Audit:** ONE YEAR

**PGL's Position:** Accept/Reject/Counter? COUNTER

**If Counter, Please Explain:**  
 The Company agrees that centralizing damage prevention and assigning a manager/leader of System Integrity makes good sense. Separate management of Operator Qualification and Training is under review. The Compliance Monitoring Group will be taking on responsibility of the Quality Assurance under existing CMG leadership. Corrosion Control is currently under direct leadership of an assigned manager. Performance management will be assigned to Compliance Monitoring under current leadership. Leak management is best handled through district shop management as it exists today.

**Support Accept/Reject Position:**  
 New federal rules being promulgated regarding distribution integrity management will be leading us to be even more proactive regarding damage prevention. A manager/leader and staff will be assigned this responsibility. All other initiatives have individual manager ownership with the exception of leak management. Because leak management is so closely tied to the daily maintenance work for each shop, we feel it is most effective to keep management of leaks under the direct control of individual district management.

<b>Action Items to Complete:</b>		(MM/DD/YYYY)	Complete?
1- Obtain authorization for the additional headcount to staff new System Integrity group - See II-5	Target Date:	10/31/2008	Yes
2- Technical Training and Standards reorganization to address operator qualification and training issues	Target Date:	3/31/2009	Revised
3- Quality Assurance transition to the CMG see action plans listed for implementation plan V-8.	Target Date:	See V-8	No
4- Hire Manager of System Integrity -See II-5	Target Date:	3/31/2009	-
5- Hire / assign staffing for System Integrity - See II-5	Target Date:	6/30/2009	-

**Resources Needed:**  
 Internal  
 Sr. management support  
 HR staffing  
 External

<b>Cost/Benefit Analysis</b>		<b>Est. Costs</b>		<b>Est. Benefits</b>	
	One-Time	Annual		One-Time	Annual
O&M		\$792,632	O&M		
Capital			Capital		

Comments: Fully loaded cost for one manager, one admin. assistant, and 4 engineers

**Deliverable Items:**  
 Establish new System Integrity group effective 3/31/2009

**Questions for Liberty Staff:**

**Comments:**

#: II-1

Updated

1/22/2009

**Recommendation:**

Change replacement weighting factors to assign a higher priority to vulnerable components and those with greater risks.

Peoples Gas needs to re-evaluate the values assigned to the various factors in its main evaluation process. It should assign higher values to components with a higher probability and consequence of failure. Peoples Gas' processes should result in elimination of vulnerable facilities that could affect structures such as schools, hospitals, and nursing homes. Peoples Gas should implement this recommendation within six months of the date of this report.

**Owner:**

Brad Haas

**Owner's Email:**

[bdhaas@integrysgroup.com](mailto:bdhaas@integrysgroup.com)

**Required Timeline, per Liberty Audit:**

SIX MONTHS

**PGL's Position:** Accept/Reject/Counter?

Accept

**If Counter, Please Explain:**

**Support Accept/Reject Position:**

Peoples Gas considers and weighs many factors before making repair/replacement decisions regarding its infrastructure. The majority of these decisions are based on identifying components with a higher probability and consequence of failure. Current evaluation criteria includes an analysis of the material, pressure and maintenance history of the gas carrying component, as well as the maintenance history of similar gas carrying components. Peoples Gas also considers pending leaks, meter location, ground cover, number and type of low pressure regulators servicing an area, customer loads, backfeeds to an area and changing urban fabric. Peoples Gas concurs that facilities such as hospitals, schools and nursing homes require unique considerations and agrees to analyze its infrastructure adjacent to these types of facilities and if appropriate adjust the weighting values accordingly.

**Action Items to Complete:**

		(MM/DD/YYYY)	Completed
1-	Obtain Landbase data identifying schools, hospitals and nursing homes from the City of Chicago	Target Date: 11/10/2008	Yes
2-	Update PGL's Geographic Information System (GIS) with landbase information	Target Date: 10/17/2008	Yes
3-	Run queries in GIS to determine types and scope of PGL facilities (Cast/Ductile iron) that are adjacent to schools hospitals and nursing homes.	Target Date: 12/1/2008	Yes
4-	Assess weighting values.	Target Date: 1/5/2009	Yes
5-	Implement changes	Target Date: 3/2/2009	

**Resources Needed:**

Internal  
Sr. GIS Specialist, Database Administrator, Manager of Distribution Design - South

External  
City of Chicago - GIS Department

**Cost/Benefit Analysis**

	Est. Costs			Est. Benefits	
	One-Time	Annual		One-Time	Annual
O&M	\$5,000	\$1,000	O&M	N/A	N/A
Capital			Capital		

Comments:

**Deliverable Items:**

The Engineering-Distribution Design Section will coordinate with the City of Chicago's GIS section to obtain data regarding the location of facilities such as schools, hospitals & nursing homes. A number of Geographic Information System (GIS) queries will be performed to determine the proximity and characteristics of PGL's infrastructure adjacent to these types of facilities. The project ranking software will be modified to accept new weighting factors.

**Questions for Liberty Staff:**

Comments:

#: II-2

Updated

1/22/2009

**Recommendation:**

Improve the coupon-sampling program.

## Peoples Gas should ensure that:

- 1- The coupon collection and analysis program continues
- 2- The results of coupon sampling analyses are integrated with pipe condition information reported by its field crews
- 3- The coupon collection is representative of main conditions in all areas of its system
- 4- The program's results are incorporated systematically into the main replacement process.

**Owner:**

Brad Haas

**Owner's Email:**[bdhaas@integrysgroup.com](mailto:bdhaas@integrysgroup.com)**Required Timeline, per Liberty Audit:**

SIX MONTHS

**PGL's Position:**

Accept/Reject/Counter?

Accept

**If Counter, Please Explain:****Support Accept/Reject Position:**

Peoples Gas currently has a procedure in the Operating & Maintenance Plan (Corrosion Control Order 8.137) that specifies when a coupon sample is to be obtained. Addressing Liberty's recommendations in the order listed above:

1. Peoples Gas currently has no plans to discontinue the coupon analysis program.
2. The results of the coupon sampling analysis is currently integrated with pipe condition information reported by field crews.
3. The coupon collection is representative of all low pressure mains identified as "poor" in all areas of the distribution system.
4. The results of the coupon analysis is currently incorporated into the main replacement process.

**Action Items to Complete:**

(MM/DD/YYYY)

- |   |              |            |         |
|---|--------------|------------|---------|
| 1- Perform an internal review of records to validate adherence to Corrosion Control Order 8.137 regarding coupon sampling.  | Target Date: | 12/15/2008 | Yes     |
| 2- Provide training / communication if procedure is not being followed properly.  | Target Date: | 3/31/2009  | Revised |
| 3- A report of coupons collected for 2009 and beyond will be generated quarterly to demonstrate the program's consistency and effectiveness.                          | Target Date: | 3/31/2009  | No      |
| 4- Revise corrosion order 8.137 to include coupon sampling of medium pressure gas main segments that have been evaluated and identified as "poor" by field personnel. | Target Date: | 3/31/2009  | No      |
| 5-  |              |            |         |

**Resources Needed:**

Internal

Technician, Engineer, Instructor

External

**Cost/Benefit Analysis**

		Est. Costs				Est. Benefits	
		One-Time	Annual			One-Time	Annual
O&M	\$6,000		N/A	O&M	N/A		N/A
Capital	N/A		N/A	Capital	N/A		N/A

Comments:

**Deliverable Items:**

The Distribution Design Section will perform an internal review of 2008 Main Maintenance Tickets to validate that coupons were taken (or if main was replaced) in accordance with Corrosion Control Order 8.137. Distribution Design will work with the Technical Training & Standards Section to provide follow-up training / communication to field crews as appropriate.

**Questions for Liberty Staff:**

Comments:

#: II-3

Updated

1/22/2009

**Recommendation:**

Evaluate cast iron replacement policies and increase replacement rates in the North district.

Within three months of the date of this report, Peoples Gas should document a plan for cast iron replacements.

**Owner:**

Brad Haas

**Owner's Email:**

[bdhaas@integrysgroup.com](mailto:bdhaas@integrysgroup.com)

**Required Timeline, per Liberty Audit:**

THREE MONTHS

**PGL's Position:**

Accept/Reject/Counter?

Counter

**If Counter, Please Explain:**

Peoples Gas agrees that cast/ductile iron replacement rates in the South & Central district territories has out paced that of the North district territory and will evaluate their cast/ductile iron replacement criteria. However Peoples Gas believes it should upgrade its system based on a set of criteria that considers system integrity and risk rather than

**Support Accept/Reject Position:**

Peoples Gas will evaluate their cast/ductile iron replacement criteria and modify the GIS project selection program to include new weighting criteria.

**Action Items to Complete:**

(MM/DD/YYYY)

1-	Identify and assess risks in the gas distribution system infrastructure.	Target Date:	11/10/2008	Yes
2-	Capture and update the geographic Information System (GIS) database with the necessary attributes to query and quantify risks.	Target Date:	11/10/2008	Yes
3-	Assign a weighting value to identified risks.	Target Date:	12/1/2008	Yes
4-	Modify the existing GIS project selection program to include new weighting criteria and issue final report.	Target Date:	3/2/2009	No
5-		Target Date:		

**Resources Needed:**

**Internal**

Sr. GIS Technician, Database Administrator, GIS Technician, Programmer, Distribution Managers

**External**

Sr. GIS Technician is currently assigned the WAM project. May need to obtain temporary staff to perform GIS queries.

**Cost/Benefit Analysis**

	Est. Costs			Est. Benefits	
	One-Time	Annual		One-Time	Annual
O&M	\$27,300	N/A	O&M	N/A	N/A
Capital	N/A	N/A	Capital	N/A	N/A

**Comments:**

**Deliverable Items:**

The final report will be based on the findings and recommendations of the Gas Distribution System Design Task Group. The task group was formed on April 24, 2008 and is charged with identifying and consolidating the processes utilized to evaluate and select gas main construction projects to meet the company objective of upgrading the gas distribution system in the most cost effective manor while managing risk and maintaining system integrity. The process will take a holistic view and consider and weigh multiple components by assigning greater values to those components with a higher probability of failure.

**Questions for Liberty Staff:**

**Comments:**

#: II-4

Updated

1/22/2009

**Recommendation:**

Implement a systematic replacement program of vulnerable service lines.

Within six months of the date of this report, Peoples Gas should document a well-defined plan for the systematic replacement of vulnerable service lines. Peoples Gas needs to implement a replacement program to target the more vulnerable services lines that pose the highest threat to the public.

**Owner:**

Brad Haas

**Owner's Email:**[bdhaas@integrysgroup.com](mailto:bdhaas@integrysgroup.com)**Required Timeline, per Liberty Audit:**

SIX MONTHS

**PGL's Position:**

Accept/Reject/Counter?

Accept

**If Counter, Please Explain:****Support Accept/Reject Position:**

Peoples gas currently has a process in place to identify and target vulnerable service lines. Typically these services are replaced in conjunction with the Low-to-Medium Pressure conversion projects. Peoples Gas will review the failure rates of vulnerable service pipes and modify the weighting factor as appropriate. Peoples Gas also agrees to perform a study to identify service pipes that pose the highest threat to the public and document a plan for their replacement.

**Action Items to Complete:**

		(MM/DD/YYYY)	Complete
1-	Perform a number of database queries to validate statistics on replacement and failure rates of CI/DI, copper, bare steel & CAB services.	Target Date: 11/10/2009	Yes
2-	Perform a number of Geographic Information System (GIS) queries to identify geographic location of service pipes with higher probability and consequence of failure.	Target Date: 11/17/2009	Yes
3-	Analyze data and develop plan.	Target Date: 12/1/2008	Yes
4-	Document plan for systematic replacement of the more vulnerable service lines that pose the highest threat to the public.	Target Date: 3/2/2009	No
5-		Target Date:	

**Resources Needed:**

## Internal

Sr. GIS Specialist, Database Administrator, Programmer

## External

Sr. GIS Technician is currently assigned the WAM project. May need to obtain temporary staff to perform GIS queries.

**Cost/Benefit Analysis**

	Est. Costs			Est. Benefits	
	One-Time	Annual		One-Time	Annual
O&M	\$8,000	N/A	O&M	N/A	N/A
Capital	N/A	N/A	Capital	N/A	N/A

Comments: Cost estimate is to perform the study.

**Deliverable Items:**

Develop statistics on failure rates of CI/DI, copper, bare steel & CAB services. Perform a geographic query to determine proximity of vulnerable service lines to buildings of public assembly. Provide long term planning document for the systematic replacement of vulnerable service lines.

**Questions for Liberty Staff:****Comments:**

#: II-5

UPDATED: 1/22/2009

**Recommendation:**

Designate a manager with overall responsibility for the excavation damage-prevention program.

Peoples Gas should designate a senior executive within the company to have overall authority and responsibility for the excavating damage prevention program, including implementing the recommendations described herein and ensuring consistency among the districts and the related support services (e.g., Technical Training). Peoples Gas should implement this recommendation within three months of the date of this report.

**Owner:**

Ed Doerk / Reply by T. Lenart

**Owner's Email:**

[tlenart@peoplesgasdelivery.com](mailto:tlenart@peoplesgasdelivery.com)

**Required Timeline, per Liberty Audit:**

THREE MONTHS

**PGL's Position:**

Accept/Reject/Counter?

ACCEPT

**If Counter, Please Explain:**

**Support Accept/Reject Position:**

This recommendation is accepted as described in the response to recommendation I-1. The new System Integrity group will be created on or before March 31, 2009 with responsibilities including excavation damage prevention.

**Action Items to Complete:**

	(MM/DD/YYYY)	Complete?
1- Obtain authorization for the additional headcount to staff new System Integrity group	Target Date: 10/31/2008	Yes
2- Hire Manager of System Integrity	Target Date: 3/31/2009	No
3- Hire / assign staffing for System Integrity	Target Date: 6/30/2009	No
4- -	Target Date: -	-
5- -	Target Date: -	-

**Resources Needed:**

Internal

External

**Cost/Benefit Analysis**

	Est. Costs			Est. Benefits	
	One-Time	Annual		One-Time	Annual
O&M			O&M		
Capital			Capital		

Comments:

**Deliverable Items:**

**Questions for Liberty Staff:**

Comments:

#: II-6

UPDATED

1/22/2009

**Recommendation:**

Work with DIGGER to develop and maintain a complete list of excavation contractors.

Peoples Gas and DIGGER need to work together to develop a system for maintaining and updating a list of active contractors. The list should be updated in real time as either party becomes aware of new contractors and other excavators and Peoples Gas should use it for its annual or more frequent general communications with excavators. Peoples Gas should ensure that the new, complete list is available within three months of the date of this report.

**Owner:**

Ed Proctor

**Owner's Email:**[Eproctor@Peoplesgasdelivery.com](mailto:Eproctor@Peoplesgasdelivery.com)**Required Timeline, per Liberty Audit:**

THREE MONTHS

**PGL's Position:**

Accept/Reject/Counter?

ACCEPT

**If Counter, Please Explain:****Support Accept/Reject Position:**

CDOT maintains a listing of licensed public way contractors working in the City of Chicago on their CDOT website. This website is updated weekly by CDOT personnel. Peoples Gas will undertake to stay abreast of any CDOT updates to the listing. CDOT personnel were also receptive to communication from Peoples Gas of any unlicensed excavating contractors working in the City of Chicago that Peoples Gas might encounter in the course of business.

**Action Items to Complete:**

		(MM/DD/YYYY)	Complete?
1- Initial meeting with CDOT DIGGER/Permit personnel	Develop process to ensure Peoples Gas has updated listing of licensed excavating contractors in the City of Chicago and communicate to the City of Chicago the names of unlicensed excavating contractors found by Peoples Gas to be working in the City of Chicago. Key to this process would be to match contractors requesting locates versus the names of contractors on the CDOT listing. This would be an on-going process and include any contractors that may damage Peoples Gas facilities.	9/23/2008	Yes
2- Maintain updated list of contractors on regular basis and re-issue Peoples Gas Education letters at required.	Communicate with the City of Chicago the names of any contractors working in the City of Chicago discovered by Peoples Gas in the course of business.	12/31/2008	Yes
3- Revise Distribution Dept. General Order 0.800 Procedure and Policies for the Prevention of Damage to (Underground) Gas Company facilities with new procedure for discovery of unlicensed excavating contractors working in the City of Chicago.	Develop training material and provide training to Union and Management personnel.	12/31/2008	Yes
4- Develop training material and provide training to Union and Management personnel.		3/31/2009	No
5- Develop training material and provide training to Union and Management personnel.		3/31/2009	No

**Resources Needed:****Internal**

Administrative Assistant working fulltime devoting one quarter of their time throughout the year to maintaining these communications. Communication would be via, e-mail, spreadsheets, telephone and U.S. Postal Service.

**External****Cost/Benefit Analysis**

	Est. Costs			Est. Benefits	
	One-Time	Annual		One-Time	Annual
O&M		21392*	O&M		
Capital			Capital		

Comments: This cost is already captured in I-1, Administrative Assistant spending 1/4 of their time on this task throughout the year.

**Deliverable Items:**

Meet with CDOT DIGGER/Permit personnel. Process to maintain communication with CDOT to ensure Peoples Gas has updated knowledge of licensed excavating contractors working in the City of Chicago. Maintain updated list of licensed licensed contractors working in the City of Chicago on a regular basis. Revise Distribution Dept. General Order 0.800. Develop training material and provide training to Union and Management personnel.

**Questions for Liberty Staff:****Comments:**

An Administrative Assistant would have to, maintain contact with CDOT personnel and issue Peoples Gas Education letters to licensed excavating contractors and additionally, provide communication back to CDOT personnel with the names of any unlicensed excavating contractors Peoples Gas may become aware of in the course of regular business. This activity would be performed on a regular basis throughout the course of the year. Field personnel would be the eyes and ears in this process.

#: II-7

UPDATED

1/22/2009

**Recommendation:**

Work with DIGGER to develop a program to screen out bogus emergency-locate requests.

Peoples and DIGGER should develop a protocol to enable DIGGER to distinguish between bona fide emergency requests and bogus requests, and to institute penalties for excavators who abuse the emergency locate service. Peoples Gas should make every effort to establish the protocol and implement the notifications within three months of the date of this report. Within six months of the date of this report, Peoples Gas should report to the ICC regarding efforts to implement a penalty system for abuses of emergency locate requests.

**Owner:**

Ed Proctor

**Owner's Email:**

[Eproctor@Peoplesgasdelivery.com](mailto:Eproctor@Peoplesgasdelivery.com)

**Required Timeline, per Liberty Audit:**

IMPLEMENT NOTIFICATIONS: THREE MONTHS. ICC REPORT: SIX MONTHS

**PGL's Position:**

Accept/Reject/Counter?

ACCEPT

**If Counter, Please Explain:**

**Support Accept/Reject Position:**

CDOT DIGGER personnel were receptive to communications from Peoples Gas regarding our discovery that excavating contractors may have abused the emergency locate request criteria. CDOT personnel maintained that they are interested in minimizing this abuse also and would contact those abusers.

**Action Items to Complete:**

		(MM/DD/YYYY)	Complete?
1-	Initial meeting with CDOT DIGGER persone	9/23/2008	Yes
2-	Process to communicate with DIGGER personnel, excavating contractors working via emergency locate requests that are not emergencies. Process for communication would be via e-mail/spreadsheet.	12/31/2008	Yes
3-	Revise Distribution Department General Order 0.800 Procedures and Policies for the Prevention of Damage to (Underground) Gas Co. Facilities with new process.	3/31/2009	No
4-	Develop training material and provide training for Union and Management personnel to implement new procedure.	3/31/2009	No
5-	Work with DIGGER, Greater Chicago Damage Prevention Council(GCDPC), and the ICC staff to develop a process for compliance via penalty and/or education. One potential penalty may be to delay issuing permits to excavators that have a record of bogus locate requests.	3/31/2009	No
6-	Process to communicate with DIGGER personnel, excavating contractors working on emergency locate numbers that are not emergencies via enhancement to the Navigate/DIGGER programming. This will require programming changes that will need more in depth analysis.	9/30/2009	No

**Resources Needed:**

Internal

One locator per Shop spending one quarter of their time documenting bogus emergency locates. One General Supervisor per Shop spending one tenth of their time organizing bogus emergency locate communications. Currently not doing this work.

External

**Cost/Benefit Analysis**

	Est. Costs			Est. Benefits	
	One-Time	Annual		One-Time	Annual
O&M		\$107,887	O&M		
Capital			Capital		

Comments: Resource equivalent to 1 FTE

**Deliverable Items:**

Meet with CDOT DIGGER/Permit personnel. Develop process to communicate with DIGGER the names of excavating contractors abusing the emergency locate request. Revise Distribution Dept. General Order 0.800 with new process. Develop training material for provide training to both Union and Management personnel. Investigate the use of Navigate system to make communication with DIGGER personnel more electronic.

**Questions for Liberty Staff:**

**Comments:**

For calendar year 2007, Peoples Gas received 14,045 emergency locate requests . For calendar year 2008 to date, Peoples Gas has received 8,496 emergency locate requests. These numbers do not include Peoples Gas emergency locate request. The number of bogus emergency locate requests is unknown.

#: II-8

UPDATED: 2/10/2009

**Recommendation:**

Upgrade the training program for locators.

As a group, Peoples Gas' locators need more and better training. Peoples Gas should design and implement the improved training program within six months of the date of this report. All locators should receive the new training within one year of the date of this report.

**Owner:**

Fred Ulanday

**Owner's Email:**[ASUlanday@integrysgroup.com](mailto:ASUlanday@integrysgroup.com)**Required Timeline, per Liberty Audit:**

IMPLEMENTATION: SIX MONTHS. NEW TRAINING: ONE YEAF

**PGL's Position:**

Accept/Reject/Counter?

ACCEPT

**If Counter, Please Explain:**

TTS will review and will adopt facets of the program(s) which apply to locates for underground natural gas facilities.

**Support Accept/Reject Position:**

TTS will review the NULCA program and will adopt facets of the program which apply to locates for underground natural gas facilities. CGA Best Practices with respect to locates will also be reviewed and best practices implemented in the same manner. The design and implementation will be completed within the Recommendation timeline.

**Action Items to Complete:**

	(MM/DD/YYYY)	Complete?
1- Review NULCA program and identify gaps in PGL training program.	Target Date: 12/31/2008	Yes
2- Review CGA best practices and identify gaps in PGL training program.	Target Date: 12/31/2008	Yes
3- Design revisions to the PGL program and develop training materials.	Target Date: 3/31/2009	No
4- Training for PGL instructors.	Target Date: 4/15/2009	No
5- Conduct new training for locators: 5/1 thru 9/30	Target Date: 5/01/2009 through 10/30/09	No
6- Measure effectiveness of training using root cause analysis and evaluations from QA/QC audits.	Target Date: 12/31/2009	No

**Resources Needed:**

Internal

External

Training Workshop for Instructor. Possible additional day of training for students

**Cost/Benefit Analysis**

		Est. Costs				Est. Benefits	
		One-Time	Annual			One-Time	Annual
O&M	\$2000 (Training Workshop for Two Instructors, 30 hrs each)		8 hrs/day x 2 days add'l training x 238 locators x \$59/hr top locator loaded rate = \$224,672 incremental cost for add'l locator training	O&M			
Capital				Capital			

Comments: Cost based on assumed 2 additional days of training for locators.

**Deliverable Items:**

Instructor NULCA training completion certificates; Gap comparison reports; Revised locator training curricula/lesson plan and training materials; completed locator training records

**Questions for Liberty Staff:****Comments:**

This recommendation also answers Recommendation II-13. Darin Burke commented on importance of connective hook-up where feasible for using locating instruments. Also verification of locates after excavation and insuring accurate maps.

#: II-9

UPDATED: 1/22/2009

**Recommendation:**

Develop and implement a communications and training protocol for the City of Chicago municipal workers and private contractors.

Peoples Gas should develop and implement a program for meetings with municipal and private excavators to educate and train them about the damage prevention program. Excavators should be required to attend such meetings. Peoples Gas should implement this recommendation prior to May 2009.

**Owner:**

Fred Ulandav

**Owner's Email:**

ASUlandav@inteqrysaroup.com

**Required Timeline, per Liberty Audit:**

NINE MONTHS

**PGL's Position:**

Accept/Reject/Counter?

ACCEPT

**If Counter, Please Explain:**

TTS will work with GCDPC and our representatives on the council to strongly recommend the described training.

**Support Accept/Reject Position:**

Enforcement by means of regulation is also a key part of underground facility excavation damage prevention. The Greater Chicago Damage Prevention Council (GCDPC) was formed for the express purpose of prevention of underground damage through identification, education and communication between facility owners, excavators and the municipality. PGL membership and participation (operations personnel and risk management personnel are members) through this committee provides a centralized forum for communicating to municipal and private excavators the need to prevent excavation damage to underground gas facilities. Training conducted by PGL on underground damage prevention to gas facilities had been provided in coordination with the GCDPC. Additional training for municipal excavators will be strongly recommended through this forum.

**Action Items to Complete:**

		(MM/DD/YYYY)	Complete?
1-	Prepare a letter to GCDPC strongly recommending training by TT&S to municipal and private excavators.	11/17/2008	Yes
2-	Schedule training sessions from responses from GCDPC members	12/31/2008	Yes
3-	Conduct training: 1/05 thru 05/29/2009	1/05 thru 04/30/2009	No
4-	Propose agenda item to extend invitation for training at upcoming GCDPC meeting.	12/31/2009	Yes
5-	Seek out support from other utility members of GCDPC to attend training	3/31/2009	Yes
6-	Recommend to GCDPC that excavators causing damage be required to attend training	3/31/2009	Yes

**Resources Needed:**

Internal

1/2 FTE Senior Instructor

External

**Cost/Benefit Analysis**

		Est. Costs		Est. Benefits	
		One-Time	Annual	One-Time	Annual
O&M			\$69,037 (salary with loadings for 1/2 FTE (Level 12) for		
Capital					

Comments:

**Deliverable Items:**

**Questions for Liberty Staff:**

**Comments:**

If this training for the City is pushed forward, it would require an additional 1/2 FTE Senior Instructor dedicated to this function in order to go to city locations, work facilities and jobsites.

PGL will invite Liberty to attend a training class and develop an "end of training" survey to identify areas of improvement for the following year's class. Please Note: PGL has no leverage to require excavators attendance.

#: II-10

UPDATED

2/1/2009

**Recommendation:**

Develop and implement a procedure for monitoring directional boring activities.

Peoples Gas should develop a procedure for identifying and monitoring directional boring activities and train its locators or other monitors in the specific requirements and hazards associated with directional bores. Peoples Gas should pay particular attention to those contractors who have caused damage in previous boring operations. Peoples Gas should have the new procedure in place within three months of the date of this report.

**Owner:**

Ed Proctor

**Owner's Email:**

[Eproctor@Peoplesgasdelivery.com](mailto:Eproctor@Peoplesgasdelivery.com)

**Required Timeline, per Liberty Audit:**

THREE MONTHS

**PGL's Position:**

Accept/Reject/Counter?

ACCEPT

**If Counter, Please Explain:**

**Support Accept/Reject Position:**

Peoples Gas will implement a procedure to enhance our monitoring of directional boring activities in the City of Chicago. These enhancements would include working with the DIGGER office and Greater Chicago Damage Prevention Council(GCDPC) to ensure that excavators and office personnel understand the importance of and accuracy of information when locates are requested. Enhancements will include identifying evidence that contractor is using test holes and visiting a sample of locations with boring activities to insure test hole procedures are being implemented.

**Action Items to Complete:**

		(MM/DD/YYYY)	Complete?
1-	Develop criteria for enhanced monitoring of directional boring activities.	12/31/2008	Yes
2-	Revise Distribution Dept. General Order 0.800 Policies and Procedures for the Prevention of Damage to (Underground) Gas Company Facilities with new criteria for monitoring directional boring activities.	3/31/2009	No
3-	Work with DIGGER office and GCDPC to ensure that excavator and Digger office personnel understand the importance of communicating boring activities when locates are requested.	3/31/2009	No
4-	Develop training material and provide training to Union and Management personnel covering new monitoring requirements for directional boring.	5/1/2009 - 10/31/2009	Revised
-	-	-	-
-	-	-	-

**Resources Needed:**

Internal

One additional locator per Shop to monitor enhanced damage prevention criteria on projects where directional boring is the method of installation.

External

**Cost/Benefit Analysis**

	Est. Costs			Est. Benefits	
	One-Time	Annual		One-Time	Annual
O&M		\$238,179	O&M		
Capital			Capital		

Comments: Costs equivalent to 3 FTEs

**Deliverable Items:**

Develop enhanced criteria for directional boring activities. Update and revise Distribution Dept. General Order 0.800. Develop training material and provide training.

**Questions for Liberty Staff:**

**Comments:**

At this time data is not available to determine the approximate number of projects/footage of installations where directional boring is the method of installation in the City of Chicago. Consequently, additional locator requirements are based on educated estimate.

#: IL-11

UPDATED

1/22/2009

**Recommendation:**

Develop and implement criteria and a procedure for conducting inspections of excavating sites.

Peoples Gas should develop criteria for inspecting excavation sites, including a determination and ranking of relative risk of various types of excavations and development of a realistic and achievable sampling protocol. Peoples Gas should implement the procedure within six months of the date of this report.

**Owner:**

Ed Proctor

**Owner's Email:**[Eproctor@Peoplesgasdelivery.com](mailto:Eproctor@Peoplesgasdelivery.com)**Required Timeline, per Liberty Audit:**

SIX MONTHS

**PGL's Position:**

Accept/Reject/Counter?

ACCEPT

**If Counter, Please Explain:****Support Accept/Reject Position:**

Peoples Gas will enhance our criteria for inspection of excavation sites. Contractors with history of violations will be sampled more frequently.

**Action Items to Complete:**

		(MM/DD/YYYY)	Complete?
1-	Develop more reasonable criteria and guidelines for performing inspections at excavation sites.	Target Date: 12/31/2008	Yes
2-	Revise Distribution Dept. General Order 0.800 Policies and Procedures for the Prevention of Damage to (Underground) Gas Facilities with new inspection guidelines.	Target Date: 3/31/2009	No
3-	Develop training material and provide training to Union and Management personnel	Target Date: 5/1/2009 - 10/31/2009	Revised
4-	Provide locators with business cards to help improve communication with excavators in order to impliment new inspection guidelines.	Target Date: 3/31/2009	No
5-	Develop report to verify the company is achieving sampling requirements contained in new guidelines.	Target Date: 9/30/2009	No

**Resources Needed:**

## Internal

Produce business cards for locators.

## External

**Cost/Benefit Analysis**

	Est. Costs			Est. Benefits	
	One-Time	Annual		One-Time	Annual
O&M	\$1,000	\$238,179	O&M		
Capital			Capital		

Comments: Additional 3 FTEs

**Deliverable Items:**

Develop more reasonable criteria and guidelines for performing inspections at excavation sites. Update Distribution General Order 0.800. Develop training material and provide training to Union and Management personnel. Produce and distribute business cards to locators.

**Questions for Liberty Staff:****Comments:**

#: II-12

UPDATED: 1/22/2009

**Recommendation:**

Develop and implement a procedure for sealing exposed cast iron joints that are subject to pressures of 25 psig or less.

Peoples Gas needs to include this code requirement in its procedures, make its field personnel aware of the requirement, and implement a process to provide for such sealing. This is a code requirement and Peoples Gas should implement it within 30 days of the date of this report.

**Owner:**

Fred Ulanday

**Owner's Email:**

[ASUlanday@integrysgroup.com](mailto:ASUlanday@integrysgroup.com)

**Required Timeline, per Liberty Audit:**

ONE MONTH

**PGL's Position:**

Accept/Reject/Counter?

ACCEPT

**If Counter, Please Explain:**

**Support Accept/Reject Position:**

PGL will make changes to applicable orders to reflect that fact that whenever a cast iron or ductile iron bell joint subject to pressures of 25 psig or less is exposed, it must be sealed (leaking or not) using means other than caulking (i.e. aneorobic sealeant or encapsulant).

**Action Items to Complete:**

		(MM/DD/YYYY)	Complete?
1-	Issue a bulletin.	Target Date: 11/26/2008	Yes
2-	Conduct tailgate information sessions.	Target Date: 12/31/2008	Yes
3-	Update appropriate O&M Orders.	Target Date: 3/31/2009	No
4-	-	Target Date: -	-
5-	-	Target Date: -	-

**Resources Needed:**

Internal

External

**Cost/Benefit Analysis**

	Est. Costs			Est. Benefits	
	One-Time	Annual		One-Time	Annual
O&M	N/A		O&M		
Capital			Capital		

**Comments:**

**Deliverable Items:**

New bulletin, accompanying tailgates, and revised orders.

**Questions for Liberty Staff:**

**Comments:**

Cost for training is perhaps fixed. However, there may be an additional cost in material (permabond) for the added joint sealing. The practice of sealing exposed joints is well known but this recommendation puts it into writing. For this reason it is not believed there will be substantial increase in the use of Permabond.

#: II-13

UPDATED

11/17/2008

**Recommendation:**

Review and implement Common Ground Alliance (CGA) best practices not in place.

As part of the overall upgrading of the program discussed in this chapter, Peoples should review the CGA compilation of best practices, discuss them with the ICC, and determine which it should implement. Peoples Gas should complete the review and propose an implementation schedule to the ICC within six months of the date of this report.

**Owner:**

Ed Proctor

**Owner's Email:**[Eproctor@Peoplesgasdelivery.com](mailto:Eproctor@Peoplesgasdelivery.com)**Required Timeline, per Liberty Audit:**

SIX MONTHS

**PGL's Position:**

Accept/Reject/Counter?

Accept

**If Counter, Please Explain:****Support Accept/Reject Position:**

Peoples Gas is currently, via Huron Consulting Group, soliciting responses from peer utility companies in effort to ascertain CGA best practices used in the natural gas industry. To the extent that third party cooperation is required to implement some best practices, our adoption must be flexible to allow for the situations where others do not fully cooperate.

**Action Items to Complete:**

	(MM/DD/YYYY)	Complete?
1- Complete survey of peer utility companies	Target Date: 11/30/2008	Yes
2- Determine and compile CGA best practices used in the natural gas industry and decide those best practices that Peoples Gas will implement.	Target Date: 3/31/2009	No
3- Prepare report of CGA best practices and implementation plan for ICC review.	Target Date: 6/30/2009	Revised
4- Revise procedures to implement CGA best practices at Peoples Gas.	Target Date: 9/30/2009	No
5- Incorporate new best practices in training curriculum.	Target Date: 3/31/2010	No

**Resources Needed:**

Internal

External

Huron Consulting Group soliciting responses from peer utilities

**Cost/Benefit Analysis**

	Est. Costs			Est. Benefits	
	One-Time	Annual		One-Time	Annual
O&M	????	????	O&M		
Capital			Capital		

**Comments:****Deliverable Items:**

Complete survey of peer utilities.

**Questions for Liberty Staff:****Comments:**

Do not know cost for Huron Consulting Group to perform survey.

#: IL-14

UPDATED

1/22/2009

**Recommendation:**

Develop and implement a root cause analysis program.

As part of the previous recommendation regarding the general upgrade of its damage prevention program, Peoples Gas should supplement its existing data collection. It should incorporate the information from the DIRT root cause form into Peoples Gas' Form 7086, Report of Facility Damage. Using that data, it should develop and implement a root-cause analysis program. Peoples Gas should have the program in place within six months of the date of this report.

**Owner:**

Ed Proctor

**Owner's Email:**[Eproctor@Peoplesgasdelivery.com](mailto:Eproctor@Peoplesgasdelivery.com)**Required Timeline, per Liberty Audit:**

SIX MONTHS

**PGL's Position:**

Accept/Reject/Counter?

ACCEPT

**If Counter, Please Explain:****Support Accept/Reject Position:**

Peoples Gas will develop a root-cause analysis program. Currently Integrys Business Support under Insurance and Claims is already in the process of developing a new form titled "Accident Report Field Copy" Form 159-2856 Rev 9/08. The new form includes "root cause" data boxes. In addition, Integrys Business Support has purchased a software program to tabulate this data. The software is made by Valley Oaks and is called "IVOS Claims Management System". Proposed root-causes on the new form virtually match those listed on the "DIRT" root cause form.

**Action Items to Complete:**

		(MM/DD/YYYY)	Complete?
1-	Develop training material and provide training for Union and Management personnel for additional data collection.	Target Date: 3/31/2009	No
2-	Develop process and criteria for analyzing root cause data collected.	Target Date: 3/31/2009	No
3-	Maintain root cause data and continuously monitor data to improve performance in preventing damage to gas facilities.	Target Date: 9/30/2009	No
4-	Determine the necessity of utilizing the "IVOS Claims Management System" as stand alone or in addition, continue to utilize current in-house access database that is used to collect gas facility damage data with root cause data modifications.	Target Date: 6/30/2009	No
5-	Generate report to document root cause analysis.	Target Date: 9/30/2009	No

**Resources Needed:**

Internal

One Manager, Three General Supervisors and two Engineers to develop analysis of root cause data and ultimately maintain operation on regular basis. Regular operation would include, collecting data, analyzing data, implementing and developing new procedures/practices and ensuring that procedures/practices are enforced.

External

**Cost/Benefit Analysis**

		Est. Costs		Est. Benefits	
		One-Time	Annual	One-Time	Annual
O&M					
Capital					

Comments: Costs for new Damage Prevention group are already reflected in I-1

**Deliverable Items:**

Develop training material and provide training for Union and Management personnel. Develop process and criteria for analyzing root cause data collected. Maintaining root cause data and continuously monitor data to improve performance in preventing damage to gas facilities. Determination of need to utilize both "IVOS Claims Management System" and in-house access database.

**Questions for Liberty Staff:****Comments:**

#: IL-15

UPDATED

11/17/2008

**Recommendation:**

Develop a system for tracking performance metrics for the damage prevention program.

As part of its general upgrade of its damage prevention program, Peoples Gas should develop a system for collecting and tracking performance metrics, including a comparison with a peer group of utilities. Peoples Gas should accomplish this within one year of the date of this report. The ICC may want to consider requiring Peoples Gas (and utilities under its jurisdiction) to report to it all damages or probable violations of the Illinois Underground Utility Facilities Damage Prevention Act using the DIRT "root causes." This would enable the ICC to analyze damage prevention activities and step up enforcement in certain areas.

**Owner:**

Ed Proctor

**Owner's Email:**

[Eproctor@Peoplesgasdelivery.com](mailto:Eproctor@Peoplesgasdelivery.com)

**Required Timeline, per Liberty Audit:**

ONE YEAR

**PGL's Position:**

Accept/Reject/Counter?

Accept

**If Counter, Please Explain:**

**Support Accept/Reject Position:**

Peoples Gas is currently, via Huron Consulting Group, soliciting responses from peer utility companies in effort to ascertain types of performance metrics, data collection methods and enforcement typically used in the natural gas industry.

**Action Items to Complete:**

	(MM/DD/YYYY)	Complete?
1- Complete survey of peer utilities.	Target Date: 11/30/2008	Yes
Determine and compile performance metrics and make decision on utilizing those metrics that will enhance Peoples Gas performance in preventing damage to gas facilities. Peoples Gas will work with the ICC in developing these performance metrics.	Target Date: 3/31/2009	No
2- Implement performance metrics	Target Date: 9/30/2009	No
3- -	Target Date: -	-
4- -	Target Date: -	-
5- -	Target Date: -	-

**Resources Needed:**

Internal

External

Huron Consulting Group soliciting responses from peer utilities.

**Cost/Benefit Analysis**

		Est. Costs		Est. Benefits	
		One-Time	Annual	One-Time	Annual
O&M	????		????		
Capital					

**Comments:**

**Deliverable Items:**

Complete survey of peer utilities.

**Questions for Liberty Staff:**

**Comments:**

Do not know the cost for Huron Consulting Group to perform survey.

#: IL-16

UPDATED: 1/22/2009

**Recommendation:**

Bring experience and stability to the corrosion control organization.

Peoples Gas should regard its buried gas pipes as valuable assets to be protected from decay and damage. In this regard, Peoples Gas should upgrade the experience and knowledge of the personnel taking the cathodic protection readings. These people are currently the lowest paid and lowest skilled level of employees at Peoples Gas and are frequently moved and promoted out of this classification or assignment. Because their tenure is limited and this classification is considered a "dead end," there is little or no incentive to do much beyond the barely acceptable and wait until they are either rotated out or promoted. The Peoples Gas corrosion control program needs to be staffed with individuals who are dedicated to corrosion control. All corrosion control personnel need to have completed either specialized training or have experience in the corrosion control field. The Peoples Gas corrosion control program should have experienced leadership. The corrosion control program should have an executive champion who provides sufficient leadership to ensure success and to overcome obstacles from other organizations.

**Owner:**

Joe Carlstrom

**Owner's Email:**

jcarlstrom@inteqrvsroup.com

**Required Timeline, per Liberty Audit:**

ONE YEAR

**PGL's Position:**

Accept/Reject/Counter?

ACCEPT

**If Counter, Please Explain:****Support Accept/Reject Position:**

PGL formulated a plan in November 2007 to address the stability and knowledge concerns of the Corrosion Control Group through leadership restructuring and the hiring of additional Corrosion Control Technicians to perform the function of the pipe-to-soil readings that are performed by the Operations Apprentice classification. This plan proceeded and continued to develop during the Liberty Consulting audit and addresses this recommendation. As of August 18th, 2008 Peoples Gas (PGL) has hired an additional 5 Corrosion Control Technicians with a minimum of a two year technical electronics degree. There is a current total of 8 PGL Corrosion Control Technicians that are dedicated to ensuring the cathodic protection of the distribution system. These technicians will not be rotated to other departments but will have opportunities to grow in the PGL Corrosion Control Group (CCG). The technicians will receive in house training from experienced staff as well as NACE certifications to enhance their development and expertise. As of August 2008 the (8) Corrosion Control Technicians are currently performing the majority of pipe-to-soil readings of mains and service pipes that were performed by the Operations Apprentice job classification in prior years. All pipe-to-soil readings will be performed by Corrosion Control Technicians beginning in the 2009 calendar year.

**Action Items to Complete:**

		(MM/DD/YYYY)	Complete?
1- Completion of NACE CP1 Certification Course	Target Date:	1/30/2009	Yes
2- -	Target Date:	-	-
3- -	Target Date:	-	-
4- -	Target Date:	-	-
5- -	Target Date:	-	-

**Resources Needed:**

Internal

NACE certification attendance for (12) Corrosion Technicians (includes NSG), (2) Engineers, (2) Managers, (2) TTS Instructors

External

NACE Instructor

**Cost/Benefit Analysis**

	Est. Costs			Est. Benefits	
	One-Time	Annual		One-Time	Annual
O&M	\$79,100		O&M		
Capital			Capital		

Comments: Cost of NACE CP1 certification course.

**Deliverable Items:**

CCG Completion of NACE CP1 Certification Course

**Questions for Liberty Staff:****Comments:****SUPPORT CONT:**

The Vice-President of Gas Operations as well as the General Manager of Field Support are engaged by conducting regular meetings with the CCG leadership to assess progress and ensure that resources, both internally and externally are available to achieve goals. The CCG team leadership consists of a dedicated manager (Special Projects Field Services Manager) and a Senior Engineer that supervises the Corrosion Control Technicians. In addition, an engineer has been assigned to the CCG team that addresses and coordinates the remedial activities associated with poor cathodic pipe-to-soil readings. Currently both engineers and (3) technicians have received NACE training and all CCG members will attend the NACE CP1 Certification Course in the coming months.

#: II-17

UPDATED: 10/01

**Recommendation:**

Improve the accuracy of corrosion control readings.

If OAs are to take readings at insulators, then Peoples Gas should improve their training so that they are able to determine which side of the insulator they are reading and, if the readings are the same, they will suspect that either there is a shorted insulator or they are reading the same side. Peoples Gas should install test stations on cathodically protected services whenever work is performed on such services, such as installing an anode or repairing a buried service valve. This will provide Peoples Gas with a more consistent and true reading of the cathodic potential and the status of the service. All future steel services should be installed with either a test station or a means to take corrosion readings without using a bar on the service valve. An independent organization, like the Compliance Monitoring Group, should monitor the accuracy of corrosion control readings. Peoples Gas should establish goals and metrics to monitor those goals regarding the accuracy of the readings. Peoples Gas should be able to demonstrate significant progress on the implementation of this recommendation within six months of the date of this report.

**Owner:**

Joe Carlstrom

**Owner's Email:**

[jcarlstrom@integrysgruop.com](mailto:jcarlstrom@integrysgruop.com)

**Required Timeline, per Liberty Audit:**

SIX MONTHS

**PGL's Position:**

Accept/Reject/Counter?

ACCEPT

**If Counter, Please Explain:**

PGL has replaced the Operations Apprentice with dedicated Corrosion Control Technicians as the job classification performing pipe-to-soil readings.

**Support Accept/Reject Position:**

The first point in the recommendation is to increase the accuracy of the pipe to soil readings. This is being addressed with the more technically proficient Corrosion Control Technicians taking the pipe-to-soil readings.

The second point in the recommendation will be addressed by the following: Technical Training & Standards (TTS) will revise the anode installation procedures to require that a test station and test wires are installed on any new steel services installed or existing steel services when installing an anode. Note that PGL rarely installs new steel services.

The third point is addressed because since 2006, PGL has had an internal audit group, the Compliance Monitoring Group (CMG) that reports to the General Manager of Field Support. The CMG performs a trailing audit of 15% of the pipe-to-soil readings taken annually and in addition performs stand by audits of employees taking readings to ensure the understanding and adherence to the proper procedures. Follow-up deficiency information is communicated to the Corrosion Control Group (CCG) to ensure corrective actions.

**Action Items to Complete:**

		(MM/DD/YYYY)	Complete?
1-	TTS will revise anode installation procedures	3/1/2009	No
2-	-	-	-
3-	-	-	-
4-	-	-	-
5-	-	-	-

**Resources Needed:**

Internal

TTS Senior Instructor

External

**Cost/Benefit Analysis**

		Est. Costs		Est. Benefits	
		One-Time	Annual	One-Time	Annual
O&M	\$1,200				
Capital					

Comments:

**Deliverable Items:**

Revised anode installation procedures

**Questions for Liberty Staff:**

**Comments:**

PGL formulated a plan in November 2007 to address the stability and knowledge concerns of the Corrosion Control Group through leadership restructuring and the hiring of additional Corrosion Control Technicians to perform the function of the pipe-to-soil readings that are performed by the Operations Apprentice classification. This plan preceded and continued to develop during the Liberty Consulting audit.

#: IL-18

UPDATED: 1/22/2009

**Recommendation:**

Improve the methods and timeliness of corrective actions.

The Peoples Gas method of performing corrective actions on corrosion control problems is slow and cumbersome at best and ineffective and wasteful at worst. Peoples Gas should re-evaluate its automatic corrective action response of putting an anode on each service or main that has a low reading and possibly consider doing diagnostic testing. Troubleshooting corrosion control problems needs to be handled by individuals and not scheduled by a computer with a "one response fits all" solution. Corrosion control problems need to be anticipated in a proactive mode rather than addressed in a reactive mode only after compliance is missed. Peoples Gas should develop a listing of buildings of public assembly (e.g., hospitals, schools, day care centers, senior centers, churches) that have services that could fail and cause a gas release. Corrective actions for these facilities should receive priority scheduling. Peoples Gas needs to anticipate that these high consequence buildings may need additional testing and increased surveillance so as to either reduce the likelihood of a gas release or minimize the consequences. Peoples Gas should implement this recommendation within six months of the date of this report.

**Owner:**

Joe Carlstrom

**Owner's Email:**

[jcarlstrom@integrysgroup.com](mailto:jcarlstrom@integrysgroup.com)

**Required Timeline, per Liberty Audit:**

SIX MONTHS

**PGL's Position:**

Accept/Reject/Counter?

ACCEPT

**If Counter, Please Explain:**

**Support Accept/Reject Position:**

The Corrosion Control Technicians have three major responsibilities; taking pipe to soil readings, diagnosing poor reads and issuing work orders for corrective actions. This recommendation is being addressed by the following: Corrosion Control Technicians are currently being trained by experienced personnel in techniques of trouble shooting poor reads. The technicians will also attend NACE certification schools to further enhance their skills. The Corrosion Control Technicians will diagnose poor reads when discovered and recommend corrective action accordingly; instead of the past practice of installing anodes on all poor readings.

The second point in the recommendation is being addressed by the engineering group mapping buildings of public assembly (e.g hospitals, schools, day care centers, senior centers, churches, etc.) onto the company's GIS system. The Corrosion Control Technicians will prioritize the execution of corrective action using a risk based approach; therefore any corrective action required in a building of public assembly will be made priority.

**Action Items to Complete:**

		(MM/DD/YYYY)	Complete?
1-	Engineering Group mapping buildings of public assembly (BPA)	Target Date: 12/1/2008	Yes
2-	-	Target Date: -	-
3-	-	Target Date: -	-
4-	-	Target Date: -	-
5-	-	Target Date: -	-

**Resources Needed:**

Internal

NA – Engineering Group Cost

External

**Cost/Benefit Analysis**

		Est. Costs		Est. Benefits	
		One-Time	Annual	One-Time	Annual
O&M					
Capital					

Comments:

**Deliverable Items:**

Engineering Group mapping buildings of public assembly (BPA)

**Questions for Liberty Staff:**

**Comments:**

PGL formulated a plan in November 2007 to address the stability and knowledge concerns of the Corrosion Control Group through leadership restructuring and the hiring of additional Corrosion Control Technicians to perform the function of the pipe-to-soil readings that are performed by the Operations Apprentice classification. This plan preceded and continued to develop during the Liberty Consulting audit.

#: IL-19

UPDATED: 10/01

**Recommendation:**

Evaluate atmospheric corrosion inspection practices.

Peoples Gas must re-evaluate its atmospheric and Bridge and Tunnel inspections to ensure that all areas are properly inspected. Air-ground interfaces are particularly prone to corrosion. In addition, Peoples Gas should include an improved engineering standard for specifying how this interface is to be protected from corrosion and improve the training of personnel performing atmospheric and Bridge and Tunnel inspections so that they are aware of the critical nature of the air-soil (or water for tunnels) interface. Peoples Gas should retrain its personnel doing atmospheric and Bridge and Tunnel inspections within six months of the date of this report. Additionally, all atmospheric and Bridge and Tunnel inspections should be re-performed within three months of the retraining. Within nine months of the date of this report, new engineering standards for handling the air-ground interface should be available for future installations and for retrofitting of existing locations.

**Owner:**

Joe Carlstrom

**Owner's Email:**[jcarlstrom@integrys.com](mailto:jcarlstrom@integrys.com)**Required Timeline, per Liberty Audit:**

RE-TRAIN: SIX MONTHS, THREE MONTHS AFTER RE-TRAIN: RE-INSPECTION, NEW ENGINEERING STANDARDS: NINE MONTHS

**PGL's Position: Accept/Reject/Counter?**

ACCEPT

**If Counter, Please Explain:****Support Accept/Reject Position:**

The O&M plan section for bridge and tunnel inspections will be revised by Technical Training Services. It will be revised to consist of two categories; atmospheric and patrolling inspections. The corrosion control group will be responsible for all atmospheric inspections on bridges and tunnels to be performed on a three year basis, (not exceeding 39 months) in accordance with standard 192.481, and the district shop crews will perform the patrolling inspections quarterly in accordance with standard 192.721. Technical Training & Standards will investigate engineering standards for air-soil (or water for tunnels) interfaces related to bridge and tunnel pipelines and improve the training of CCG personnel performing these atmospheric inspections.

**Action Items to Complete:**

		(MM/DD/YYYY)	Complete?
1-	Technical Training & Standards research engineering standard for air-soil (or water for tunnels) interface	Target Date: 3/31/2009	No
2-	Technical Training & Standards revise O&M	Target Date: TBD	No
3-	Technical Training & Standards re-training district shop personnel (patrolling bridge and tunnel) and CCG personnel (atmospheric bridge & tunnel)	Target Date: TBD	No
4-	-	Target Date: -	-
5-	-	Target Date: -	-

**Resources Needed:**

Internal

TTS Manager &amp; Senior Instructor

External

**Cost/Benefit Analysis**

	Est. Costs			Est. Benefits	
	One-Time	Annual		One-Time	Annual
O&M	\$16,440		O&M		
Capital			Capital		

Comments:

**Deliverable Items:**

An engineering standard for air-soil (or water for tunnels) interface

Revise O&amp;M plan distinguishing patrolling from atmospheric inspections

Re-training of district shop personnel (patrolling) and CCG personnel (bridge &amp; tunnel)

**Questions for Liberty Staff:****Comments:**

#: II-20

Updated

11/17/2008

**Recommendation:**

Test casings to ensure electrical isolation from the carrier pipe.

Peoples Gas should ensure that all of its casings are electrically isolated from the carrier pipe. Peoples Gas should give the responsibility to corrosion technicians to test all of the casings in Peoples Gas system to ensure that they are electrically isolated from the carrier pipe as required by the code. Peoples Gas should implement this recommendation within three months of the date of this report and perform all the necessary corrective actions within nine months of the date of this report.

**Owner:**

Joe Carlstrom

**Owner's Email:**

[jcarlstrom@integrysgroup.com](mailto:jcarlstrom@integrysgroup.com)

**Required Timeline, per Liberty Audit:**

IMPLEMENTATION: THREE MONTHS, CORRECTIVE ACTIONS: NINE MONTHS

**PGL's Position:**

Accept/Reject/Counter?

Accept

**If Counter, Please Explain:**

**Support Accept/Reject Position:**

A casing project will be assigned to an Engineer to test and ensure isolation of carrier pipe from casing pipe. The project will consist of steps of ensuring the identification of all casings within the transmission and distribution systems, identification of all test points on the casings and carrier piping, utilizing a risk based approach to prioritize workload and coordinating remedial actions. This will be an ongoing project to start in January 2009 and have a five year life cycle until 2014. There are many unknowns associated with this project pertaining to the identification of test stations, casing shorts and corrective actions. In addition the costs associated with the project are difficult to budget because of these unknowns.

**Action Items to Complete:**

(MM/DD/YYYY)

- |    |  |              |           |
|----|--|--------------|-----------|
| 1- | Approval and assignment of an engineer to the casing project.  | Target Date: | 3/31/2009 |
| 2- | Identifying all casings within the transmission and distribution system.                                     | Target Date: | 1/1/2010  |
| 3- | Identifying all test point locations and performing remedial action to install test point locations.         | Target Date: | 1/1/2014  |
| 4- | Identifying all casing shorts, proposing remedial actions to clear shorts and coordinating remedial actions. | Target Date: | 1/1/2014  |
| 5- | Completion of all remedial actions to ensure casing to carrier pipe isolation.                               | Target Date: | 1/1/2014  |

**Resources Needed:**

**Internal**

Full time engineer, company crews/contractor to perform remedial actions

**External**

Contractor Crews to perform remedial actions

**Cost/Benefit Analysis**

		Est. Costs		Est. Benefits	
		One-Time	Annual	One-Time	Annual
O&M	NA			O&M	
Capital				Capital	

Comments: Ongoing cost calculations and budget determinations will be an ongoing process throughout the project lifecycle.

**Deliverable Items:**

- 1.) Assigning a project coordinator, (Engineer), and project implementation.
- 2.) Identification of all casings within the transmission and distribution systems.
- 3.) Test station identification and installations of casings and carrier pipes.
- 4.) Identification of casing shorts and completion of remedial activities.

**Questions for Liberty Staff:**

NA

**Comments:**

#: II-21

Updated

1/29/2009

**Recommendation:**

Improve organizational communications.

The corrosion control group within Peoples Gas needs to be integrated within the Peoples Gas organization so that information flows freely and decisions are made with all of the facts with regard to corrosion (e.g., leaks, main and service replacements, pipe storage). Peoples Gas should implement this recommendation within six months of the date of this report.

**Owner:**

Joe Carlstrom

**Owner's Email:**

[jcarlstrom@integrysgroup.com](mailto:jcarlstrom@integrysgroup.com)

**Required Timeline, per Liberty Audit:**

SIX MONTHS

**PGL's Position:**

Accept/Reject/Counter?

Accept

**If Counter, Please Explain:**

**Support Accept/Reject Position:**

In 2007, the Corrosion Control Group (CCG) was restructured to become part of operations. The Corrosion Control Group (CCG) Senior Engineer is in constant communication with the operational managers and district shop supervisors to identify and resolve corrosion related issues where information pertaining to leaks, main replacements and service replacements can be discussed. The CCG generates a weekly report that specifies the corrosion related corrective actions that are pending within the district shops. Shop Managers review leak ticket information and communicate any corrosion leak related information to CCG.

**Action Items to Complete:**

(MM/DD/YYYY)

- |   |              |            |     |
|---|--------------|------------|-----|
| 1- Copy of weekly report to Liberty for 1st Quarter Review. Meetings are held on an as needed basis depended on corrective actions.   | Target Date: | 12/31/2008 | Yes |
| 2- Shop management will review leak ticket and work ticket information for corrosion related issues on cathodically protected steel. Issues on cathodically protected pipe will be communicated to the CCG. | Target Date: | 2/28/2009  | Yes |
| 3-  | Target Date: |            |     |
| 4-  | Target Date: |            |     |
| 5-  | Target Date: |            |     |

**Resources Needed:**

Internal

NA

External

NA

**Cost/Benefit Analysis**

		Est. Costs		Est. Benefits	
		One-Time	Annual	One-Time	Annual
O&M	NA				
Capital					

Comments:

**Deliverable Items:**

N/A

**Questions for Liberty Staff:**

NA

Comments:

#: II-22

UPDATED: 1/22/2009

**Recommendation:**

Improve corrosion control training.

Peoples Gas' training did not transfer to actions in the field. Peoples Gas needs to make changes to the content, delivery, frequency, or methods of training to overcome this fault. Peoples Gas should monitor field activities to feed back to training for improvements. Continual training of corrosion control personnel needs to be undertaken. A method to determine the effectiveness of the training is through the performance of trailing audits on corrosion readings conducted within 4 weeks of the original reading. Significant differences between the two sets of readings could reflect on the effectiveness of training. Peoples Gas should implement revised corrosion control training and implement trailing audits within six months of the date of this report. Feedback from the audits to training should be continuous.

**Owner:**

Joe Carlstrom

**Owner's Email:**

[jcarlstrom@integrys.com](mailto:jcarlstrom@integrys.com)

**Required Timeline, per Liberty Audit:**

SIX MONTHS

**PGL's Position:**

Accept/Reject/Counter?

ACCEPT

**If Counter, Please Explain:**

**Support Accept/Reject Position:**

This recommendation is partially addressed with the transfer of the pipe-to-soil workload to the Corrosion Control Technician classification. In addition, during the time period parallel with the Liberty Consulting audit the Operator Qualification requirements for pipe-to-soil readings was enhanced to include the learning of theory in the classroom, a practical evaluation and five-day field training/evaluation, (classroom/practical re-qualification is required annually). Corrosion Control Technicians will also be required to attend various NACE courses and receive their NACE CP1 Certification.

To address the second point in this recommendation, the Compliance Monitoring Group (CMG) has been performing trailing audits since 2006 on 15% of all pipe-to-soil readings. Audit results are analyzed by the CMG, CCG and TTS to determine problem areas and adjust training accordingly to ensure employees are proficient in corrosion related

**Action Items to Complete:**

		(MM/DD/YYYY)	Complete?
1-	Completion of NACE CP1 Certification Course	Target Date: 1/30/2009	Yes
2-	-	Target Date: -	-
3-	-	Target Date: -	-
4-	-	Target Date: -	-
5-	-	Target Date: -	-

**Resources Needed:**

Internal

External

**Cost/Benefit Analysis**

	Est. Costs			Est. Benefits	
	One-Time	Annual		One-Time	Annual
O&M			O&M		
Capital			Capital		

Comments:

**Deliverable Items:**

**Questions for Liberty Staff:**

**Comments:**

#: IL-23

Updated

11/17/2008

**Recommendation:**

Improve corrosion control record keeping.

The Peoples Gas corrosion control program must be given tools with which it can perform its function. These tools include computer programs to track and measure performance, equipment to perform its duties, and training to improve the caliber and knowledge base of its members. The records that Peoples Gas uses for corrosion control are disjointed and not functional with regard to determining what corrective actions have been performed, and where they are performed and need to be improved. The record keeping quality of the corrosion control is significantly below what is expected of an urban utility with over 500,000 customers. Peoples Gas needs to investigate whether a new dedicated corrosion control database computer system can be installed to track, record, and notify corrosion control personnel when readings are overdue, when segments are near falling below code-mandated readings, and to track corrective actions. Such a new system must have the history of each segment loaded so that there is historic data that can be used to track current conditions. Peoples Gas should immediately start the investigation and should have a new system on line within 18 months of the date of this report.

**Owner:**

Joe Carlstrom

**Owner's Email:**

[jcarlstrom@integrysgroup.com](mailto:jcarlstrom@integrysgroup.com)

**Required Timeline, per Liberty Audit:**

INVESTIGATION: IMMEDIATELY, NEW SYSTEM: 18 MONTHS

**PGL's Position:**

Accept/Reject/Counter?

Accept

**If Counter, Please Explain:**

**Support Accept/Reject Position:**

A new record keeping system titled the Work Asset Management (WAM) system is currently being developed and will go live in 2009 replacing our legacy systems. The Corrosion Control Group (CCG) will work with the WAM team to design a system to rectify challenges faced by users of the current IT systems involving corrosion related record keeping. The WAM system will maintain all corrosion related data for the pipelines, store the data for the pipeline, allow scheduling corrective action work, track the corrective action work performed and alert to compliance deadlines.

**Action Items to Complete:**

		(MM/DD/YYYY)
1-	Ongoing CCG interaction with WAM team	Target Date: 1/1/2010
2-	Ongoing WAM development ensuring CCG compliance record keeping needs, such as storing data for the life of the pipe, scheduling corrective action work, tracking corrective action work and notify of compliance due dates.	Target Date: 1/1/2010
3-		Target Date:
4-		Target Date:
5-		Target Date:

**Resources Needed:**

Internal  
SP-FS Manager & CCG Senior Engineer interaction with WAM team.

External

**Cost/Benefit Analysis**

		Est. Costs		Est. Benefits	
		One-Time	Annual	One-Time	Annual
O&M	NA			O&M	
Capital				Capital	

Comments: WAM costs have been accounted for in project design.

**Deliverable Items:**

WAM system with improvements to address the deficiencies of the current corrosion related record keeping systems.  
WAM system that stores corrosion related compliance records, stores data for the life of the pipe, schedules corrective action work, tracks corrective action work and notifies of compliance due dates.

**Questions for Liberty Staff:**

NA

**Comments:**

#: II-24

UPDATED

1/22/2009

**Recommendation:**

Improve pipe storage practices.

Peoples Gas should remove and scrap or recoat all of the FBE coated pipe in the pipe yard that is older than two years. If it cannot be determined what date the pipe was received, then that pipe must also be recoated or scrapped. Within three months of the date of this report, Peoples Gas should start logging in all FBE coated pipe and placing it under a tarp or paint it with white latex paint prior to being stored in sunlight.

**Owner:**

Kelly Kuffel

**Owner's Email:**

[KJKuffel@integrsgroup.com](mailto:KJKuffel@integrsgroup.com)

**Required Timeline, per Liberty Audit:**

THREE MONTHS

**PGL's Position:**

Accept/Reject/Counter?

ACCEPT

**If Counter, Please Explain:**

**Support Accept/Reject Position:**

About \$300,000 worth of pipe is in stock, and is greater than 2 years old. Most of this pipe is needed, and should not be scrapped. Replacing this pipe would cost about \$400,000. A solution for protecting coated pipe in the future and inventory tracking will be developed.

**Action Items to Complete:**

	(MM/DD/YYYY)	Complete?
1- Cover all Steel Coated Pipe	Target Date: 10/31/2008	Yes
2- Recoat all pipe greater than 2 years old	Target Date: 4/30/2009	Revised
3- Develop plan to protect coated pipe	Target Date: 12/31/2008	Yes
4- Implement coated pipe protection plan	Target Date: 6/30/2009	Yes
5- -	Target Date: -	-

**Resources Needed:**

**Internal**

Accounting for pipe coating and transportation - appx \$80K. Much of the pipe will need to be loaded and unloaded with a crane.

**External**

Freight - transportation

**Cost/Benefit Analysis**

Est. Costs		Est. Benefits	
One-Time	Annual	One-Time	Annual
O&M \$80,000		O&M \$260,000	
Capital		Capital	

**Comments:**

**Deliverable Items:**

All pipe will be covered. Pipe Greater than 2 years old will be recoated.

**Questions for Liberty Staff:**

**Comments:**

Considerable effort and logistics will be needed to have old pipe recoated. Much of which will need to be loaded and unloaded with a crane.

#: **II-25** Updated 1/23/2009

**Recommendation:**  
 Demonstrate implementation of best practices.

Peoples Gas should provide demonstrable evidence to the ICC that it has implemented AGA best practices with regard to corrosion control or provide convincing argument of why it should not implement certain of these practices. Peoples Gas should complete this recommendation within six months of the date of this report.

**Owner:** Joe Carlstrom **Owner's Email:** [jcarlstrom@integrysgroup.com](mailto:jcarlstrom@integrysgroup.com)

**Required Timeline, per Liberty Audit:** SIX MONTHS

**PGL's Position:** Accept/Reject/Counter? **Accept**

**If Counter, Please Explain:**

**Support Accept/Reject Position:**  
 Special Projects Field Service Manager of the Corrosion Control Group (CCG) is an active member of the AGA Corrosion Control Committee. An AGA best practices document does not exist, but there is documentation on the corrosion control related practices of AGA member utilities in a round table format. A gap analysis document of these practices as compared to PGL corrosion control practices will be created by Huron Consulting and AGA member corrosion control practices will be evaluated by PGL corrosion control staff for implementation. The CCG will create documentation as to the rational of practice implementation or rational for not implementing. The documentation, without AGA member utility information (names), will be presented to the Illinois Commerce Commission.

<b>Action Items to Complete:</b>		(MM/DD/YYYY)	
1-	Huron Consulting and PGL evaluation of corrosion control practices of AGA members.	Target Date:	11/30/2008 Yes
2-	Assess Huron Consulting AGA corrosion control practice gap analysis report and determine the practices to implement. In addition, supply supporting rational for practices that are not implemented.	Target Date:	2/28/2009 No
3-	Provide Implementation plan of agreed upon best practices and produce documentation to ICC.	Target Date:	3/31/2009 No

**Resources Needed:**  
 Internal  
 Special Projects Field Service Manager  
 External  
 Huron Consulting

<b>Cost/Benefit Analysis</b>							
		Est. Costs				Est. Benefits	
		One-Time	Annual			One-Time	Annual
O&M	NA			O&M			
Capital				Capital			

**Comments:**

**Deliverable Items:**  
 Gap Analysis document of practices performed by AGA members.  
 Determination and documented rational of implementing practices.  
 Documentation without AGA member names or information given to the ICC.

**Questions for Liberty Staff:**

NA

**Comments:**

NA

#: III-1

Updated

11/14/2008

**Recommendation:**

Determine the resources necessary to ensure all annual valve inspections are accomplished within scheduled timeframes.

The group that performs valve inspections does not appear to have adequate resources to ensure annual inspection schedules are met. Peoples Gas needs to determine its workforce needs, both for GOS valve inspections, and for valve inspections performed by distribution field forces, based on work activities. It then needs to assign adequate personnel to complete the annual valve inspections. Peoples Gas should complete the assessment of workforce needs within three months of the date of this report and make the appropriate adjustments within one year of the date of this report.

**Owner:**

Dawn Neely

**Owner's Email:**

[DPNeely@integrvsgroup.com](mailto:DPNeely@integrvsgroup.com)

**Required Timeline, per Liberty Audit:**

COMPLETE ASSESSMENT: THREE MONTHS, ADJUSTMENTS: ONE YEAF

**PGL's Position:**

Accept/Reject/Counter?

COUNTER

**If Counter, Please Explain:**

Peoples believes that this is not a resource issue. The overdue valve inspection information provided in the data request included valves that were completed on the same day the inspection was due. Only 6 overdue valve inspection in 2006 and 1 in 2007, compared to the initial 38 and 7 reported. Since 2007 the company has been closely monitoring all inspections and has been reporting all overdue inspections to the ICC on a monthly basis. In addition, a new area, Centralize Planning, was formed to schedule, route and monitor inspections for all company. Centralize Planning focus will be to ensure all inspections get completed on time.

**Support Accept/Reject Position:**

**Action Items to Complete:**

		(MM/DD/YYYY)	Complete?
1-	Centralize Planning Group to Monitor Inspections	Target Date: 10/1/2008	Yes
2-	Centralize Planning Group to Schedule and Route Inspections for North and Central Shop	Target Date: 10/1/2008	Yes
3-	PGL will create monthly and YTD valve inspection report.	Target Date: 2/28/2009	No
4-	Centralize Planning Group to Schedule and Route all Inspections for the Company Sprng 2010 (WAM)	Target Date: 3/1/2010	Revised
5-	-	Target Date: -	-

**Resources Needed:**

Internal

External

**Cost/Benefit Analysis**

		Est. Costs		Est. Benefits	
		One-Time	Annual	One-Time	Annual
O&M					
Capital					

Comments:

**Deliverable Items:**

**Questions for Liberty Staff:**

**Comments:**

#: III-2

UPDATED: 1/22/2009

**Recommendation:**

Develop a means to track and report histories of valve inspections to identify valves that cause continual problems, and to focus the inspections and maintenance on those problems.

Peoples Gas should create a valve-inspection history report to track valves that cause continual problems so that GOS might focus its inspections and maintenance. Peoples Gas should implement this recommendation within six months of the date of this report.

**Owner:**

John Just / Reply by T. Lenart

**Owner's Email:**

[tlenart@peoplesgasdelivery.com](mailto:tlenart@peoplesgasdelivery.com)

**Required Timeline, per Liberty Audit:**

SIX MONTHS

**PGL's Position:**

Accept/Reject/Counter?

ACCEPT

**If Counter, Please Explain:**

**Support Accept/Reject Position:**

With the implementation of WAM , a complete history of maintenance on valves will be captured with reporting capabilities to satisfy this recommendation.

**Action Items to Complete:**

		(MM/DD/YYYY)	Complete?
1-	Implement WAM	3/31/2010	Revised
2-	-	-	-
3-	-	-	-
4-	-	-	-
5-	-	-	-

**Resources Needed:**

Internal

External

**Cost/Benefit Analysis**

	Est. Costs			Est. Benefits	
	One-Time	Annual		One-Time	Annual
O&M			O&M		
Capital			Capital		

Comments:

**Deliverable Items:**

**Questions for Liberty Staff:**

Comments:

#: III-3

UPDATED: 1/22/2009

**Recommendation:**

Resolve interface problems with the chartless recorders.

To take full advantage of chartless technology and to ensure there are no operating problems at its pressure regulation stations, Peoples Gas needs to identify and resolve the interface issues. Peoples Gas should implement this recommendation within six months of the date of this report.

**Owner:**

Bob Parker

**Owner's Email:**

[rbparker@peoplesgasdelivery.com](mailto:rbparker@peoplesgasdelivery.com)

**Required Timeline, per Liberty Audit:**

SIX MONTHS

**PGL's Position:**

Accept/Reject/Counter?

ACCEPT

**If Counter, Please Explain:**

**Support Accept/Reject Position:**

Software revisions have been implemented which resolved incompatibilities between PDCs and computers. Gas Operations stands ready to demonstrate that previous interface issues have been resolved.

**Action Items to Complete:**

		(MM/DD/YYYY)	Complete?
1-	Updated revisions were installed in computers and PDCs in May of 2007	Target Date: N/A	Yes
2-	Q1 Liberty Review - Demonstration	Target Date: 12/31/2008	Yes
3-	-	Target Date: -	-
4-	-	Target Date: -	-
5-	-	Target Date: -	-

**Resources Needed:**

Internal

N/A

External

N/A

**Cost/Benefit Analysis**

		Est. Costs		Est. Benefits	
		One-Time	Annual	One-Time	Annual
O&M					
Capital					

**Comments:**

**Deliverable Items:**

**Questions for Liberty Staff:**

**Comments:**

PGL will schedule a demonstration for Liberty during their Q1 review/visit.

#: III-4

UPDATED

1/22/2009

**Recommendation:**

Analyze the gas system to determine sampling sites that will ensure proper concentrations of odorant reaches all parts of the system.

Peoples Gas needs to review the locations it tests to verify its odorant levels are adequate. The locations sampled need to include adequate representation at the extremities of the system to ensure odorant levels throughout the system are at code required levels. Peoples Gas should implement this recommendation within six months of the date of this report.

**Owner:**

Mark Kinzle

**Owner's Email:**

[MWKinzle@integrysgroup.com](mailto:MWKinzle@integrysgroup.com)

**Required Timeline, per Liberty Audit:**

SIX MONTHS

**PGL's Position:**

Accept/Reject/Counter?

ACCEPT

**If Counter, Please Explain:**

**Support Accept/Reject Position:**

Peoples Gas will perform an evaluation of the system and select sites from the medium pressure system and low pressure system that represent the extremities of the system. This will be done through analysis of the furthest points from the gate stations in which there is a zero flow condition. In these areas odorometer test sites will be selected and testing will be performed on a weekly basis. Peoples Gas will discontinue the practice of bi-weekly inspections through olfactory testing.

**Action Items to Complete:**

	(MM/DD/YYYY)	Complete?
1- Analysis and evaluation of the system.	Target Date: 12/1/2008	Yes
2- Give Liberty a copy of engineering report for new locations	Target Date: 2/1/2009	No
3- Purchase of equipment and site determination and coordination with key customers.	Target Date: 2/1/2009	No
4- Training of additional employees and Implementation.	Target Date: 3/1/2009	No
5- Provide Liberty a copy of test results	Target Date: 3/31/2009	No

**Resources Needed:**

Internal

Engineering, Marketing, Service Department

External

**Cost/Benefit Analysis**

Est. Costs		Est. Benefits	
One-Time	Annual	One-Time	Annual
O&M 76 hours: \$9,200		O&M	
Capital 4 devices: \$9,600	\$960	Capital	

Comments: Assumption is that additional sites and frequency of testing with odormeter would be offset by discontinuing the olfactory testing

**Deliverable Items:**

Odor Survey Map. Procedure for weekly odor survey.

Copy of Engineering report for new locations and provide copy of test results to Liberty

**Questions for Liberty Staff:**

**Comments:**

#: III-5

UPDATED: 10/01

**Recommendation:**

Develop a schedule and verify that personnel who perform "sniff" tests possess normal olfactory senses.

Peoples Gas' odorant monitoring program includes regular performance of sniff tests. Peoples Gas needs to implement a program to verify periodically that those employees performing the sniff tests are qualified to do so. Peoples Gas should implement this recommendation within six months of the date of this report.

**Owner:**

Cal Arroyo

**Owner's Email:**

[CArroyo@northshoregasdelivery.com](mailto:CArroyo@northshoregasdelivery.com)

**Required Timeline, per Liberty Audit:**

SIX MONTHS

**PGL's Position:**

Accept/Reject/Counter?

ACCEPT

**If Counter, Please Explain:**

**Support Accept/Reject Position:**

Peoples Gas intends to significantly expand the more rigorous sampling of odorant concentrations utilizing odorometer instruments as described in response to recommendation III-4. Since odorometer tests are much more accurate than rudimentary sniff tests, sniff tests will be discontinued. Peoples Gas has contracted with Huron Consulting to determine industry best practices for qualifying individuals to conduct odorometer tests which will include testing for normal olfactory senses.

**Action Items to Complete:**

		(MM/DD/YYYY)	Complete?
1- Analysis and evaluation of the method of testing employees olfactory senses.	Target Date:	2/1/2009	No
2- Purchase of equipment (sniff cards)	Target Date:	2/1/2009	Yes
3- Training	Target Date:	3/1/2009	No
4- Create a test schedule	Target Date:	3/1/2009	No
5- Perform & monitor test	Target Date:	3/1/2009	No

**Resources Needed:**

Internal

ITS, Technical Training, Gas Operations

External

**Cost/Benefit Analysis**

	Est. Costs			Est. Benefits	
	One-Time	Annual		One-Time	Annual
O&M			O&M		
Capital			Capital		

Comments: Assumption is that additional sites and frequency of testing with odorometer would be offset by discontinuing the

**Deliverable Items:**

**Questions for Liberty Staff:**

**Comments:**

It is possible that a schedule could be implemented to verify an individual's olfactory sense so that individuals performing this task could be tested once per month.  
<http://www.sensonics.com/shop/pc/viewPrd.asp?idcategory=5&idproduct=14>

#: III-6

UPDATED: 10/01

**Recommendation:**

Conduct adequate training for Gas Operations Section (GOS) on valves and regulators.

This recommendation is a place marker for Liberty's review of this training in the next phase of this investigation.

**Owner:**

Bob Parker

**Owner's Email:**

[rbparker@peoplesgasdelivery.com](mailto:rbparker@peoplesgasdelivery.com)

**Required Timeline, per Liberty Audit:**

N/A

**PGL's Position:**

Accept/Reject/Counter?

Accept

**If Counter, Please Explain:**

**Support Accept/Reject Position:**

**Action Items to Complete:**

		(MM/DD/YYYY)	Complete?
1-	GOS Refresher training is scheduled for December 16, 2008.	Target Date:	-
2-	-	Target Date:	-
3-	-	Target Date:	-
4-	-	Target Date:	-
5-	-	Target Date:	-

**Resources Needed:**

Internal

External

**Cost/Benefit Analysis**

		Est. Costs		Est. Benefits	
		One-Time	Annual	One-Time	Annual
O&M					
Capital					

**Comments:**

**Deliverable Items:**

**Questions for Liberty Staff:**

**Comments:**

Training on regulators and valves are performed annually. Operator Qualifications for regulator and valves are conducted every three years as a DOT requirement.

#: III-7

Updated

1/23/2009

**Recommendation:**

Re-evaluate the odorant sampling and documentation paper system and convert it to an electronic format.

The paper system in use is inefficient, bulky, and time-consuming. Peoples Gas should investigate the possibility of scheduling and recording odor tests through its Navigate system to eliminate the paper records created by the existing system. Peoples Gas should develop a plan to implement this recommendation within three months of the date of this report.

**Owner:**

Cal Arroyo

**Owner's Email:**

[CArroyo@northshoregasdelivery.com](mailto:CArroyo@northshoregasdelivery.com)

**Required Timeline, per Liberty Audit:**

THREE MONTHS

**PGL's Position:**

Accept/Reject/Counter?

Accept

**If Counter, Please Explain:**

**Support Accept/Reject Position:**

To implement this recommendation involves changes to PGL's & NSG's customer billing system along with the mobile date system computer system (Advantex), which is used to route these orders to the employees in the field. Advantex is a computer system maintained by an outside vendor. Lastly, this modification needs to be deployed onto each vehicle's Gobook computer laptop. This process can not be implemented within the three months Liberty recommended. Currently, a cost estimates is being put together from both internal resources for the required changes to Cfirst and external resources for changes to be performed by Advantex. Once the work request to Advantex is made for their work, all of the required changes will designed, built, tested and deployed. Training will also occur prior to deployment.

**Action Items to Complete:**

	(MM/DD/YYYY)	Complete?
1- Analysis of required Cfirst & MDSI changes.	Target Date: 10/31/2008	Yes
2- Written Plan for implementing changes	Target Date: 12/31/2008	Yes
3- Design and build changes	Target Date: 11/30/2009	No
4- Testing changes	Target Date: 12/31/2009	No
5- Conduct training	Target Date: 1/31/2010	No
6- Implementation	Target Date: 1/31/2010	No

**Resources Needed:**

Internal

ITS, Technical Training & Gas Operations

External

Advantex

**Cost/Benefit Analysis**

		Est. Costs		Est. Benefits	
		One-Time	Annual	One-Time	Annual
O&M					
Capital					

**Comments:**

**Deliverable Items:**

Gas Odor Survey Map. Procedure for weekly gas odor survey. Reduce cost of printing and storing paper documentation

**Questions for Liberty Staff:**

**Comments:**

#: III-8

UPDATED: 10/01

**Recommendation:**

Increase the frequency of employee emergency-plan training.

Peoples Gas conducts initial EOP training for new employees every year, provided there are a sufficient number of new employees. In 2005, Peoples Gas conducted classroom training and in 2007, it provided on-line training modules. The complexity and detail provided in the EOP combined with regular personnel turnover or position changes demand that key emergency response personnel be made familiar with the EOP more often than every two years. Peoples Gas should conduct refresher training at least annually. Peoples Gas should implement this recommendation within six months of the date of this report.

**Owner:**

Fred Ulanday

**Owner's Email:**[ASUlanday@integrysgroup.com](mailto:ASUlanday@integrysgroup.com)**Required Timeline, per Liberty Audit:**

SIX MONTHS

**PGL's Position:**

Accept/Reject/Counter?

ACCEPT

**If Counter, Please Explain:**

An additional two months for hands-on scenario case development would be required.

**Support Accept/Reject Position:**

A formal 2-day program will be given every two years, with a refresher "e-learning" program to be given on alternate years. For new employees joining gas operations, they will take the e-learning module within 90 days if formal program is not offered during that year. H.R. will be responsible for including in new-employee manual. Implementation will start in 2009 and PGL will attempt to have the program designed by six months of date of this report, however, additional time for hands-on scenario case development would be required.

**Action Items to Complete:**

		(MM/DD/YYYY)	Complete?
1- Program development.	Target Date:	4/30/2009	No
2- Conduct training.	Target Date:	5/29/2009	No
3- Include program policies and procedures in the H.R manual for new employees	Target Date:	5/29/2009	No
4- -	Target Date:	-	-
5- -	Target Date:	-	-

**Resources Needed:**

Internal

Additional personnel and Subject Matter Experts (SME) will be needed to help with facilitation of the program as well as with program development.

External

**Cost/Benefit Analysis**

	Est. Costs			Est. Benefits	
	One-Time	Annual		One-Time	Annual
O&M		\$34,519 (salary, loaded 0.25 FTE Level 12 Senior Instructor for case development & training delivery; \$41,135 (salaries, loaded 0.3 SME from district shops for program facilitation; 8 hrs x 237 mgmt attendees = 1896 additional trainee manhours every even year @ \$68/hr loaded blended rate = \$198,928. Total cost is \$274,582 every 2 yrs or \$137,291 annual average cost.	O&M		
Capital			Capital		

Comments:

**Deliverable Items:**

2009 Hands-on Scenario Case and other agenda material; Completed training records

**Questions for Liberty Staff:**

Comments:

#: III-9

UPDATED: 1/22/2009

**Recommendation:**

Perform joint training with outside responders.

The EOP should require that there is some formal joint training between company and non-company first responders to an incident. This training would assist in developing an even stronger working relationship between Peoples Gas and the outside responders. Such a training exercise would also highlight any deficiencies in the Peoples Gas' EOP. Peoples Gas should conduct training exercises yearly until all lessons learned are resolved and each group is cognizant of the capabilities of the other. People Gas should start such training in 2009.

**Owner:**

Fred Ulanday

**Owner's Email:**

[ASUlanday@integrysgroup.com](mailto:ASUlanday@integrysgroup.com)

**Required Timeline, per Liberty Audit:**

2009

**PGL's Position:**

Accept/Reject/Counter?

ACCEPT

**If Counter, Please Explain:**

**Support Accept/Reject Position:**

In conjunction with the response to III-8, staff from the Chicago Fire Department Office of Fire Investigation (CFD OFI) will be invited on odd-numbered years, beginning in 2009, to join company management personnel in the second day of the 2-day full training program for emergency response, where a mock Incident Command exercise is conducted. CFD OFI will similarly be invited on even-numbered years, beginning in 2010, to the refresher training for emergency response, which will include discussion of recent gas emergencies. Separate training classes on gas safety and gas incident investigation will be offered to the Chicago Police Department Bomb and Arson Section (CPD) on an annual basis.

**Action Items to Complete:**

		(MM/DD/YYYY)	Complete?
1-	Invitation to CFD (and ICC P/L Safety Staff) for the emergency response training program; Invitation to the CPD for the gas safety and gas incident investigation program.	2/28/2009	Yes
2-	Conduct training.	5/31/2009	No
3-	-	-	-
4-	-	-	-
5-	-	-	-

**Resources Needed:**

Internal

Resources will be determined in large part by the participation of the CFD-OFI and CPD.

External

**Cost/Benefit Analysis**

	Est. Costs			Est. Benefits	
	One-Time	Annual		One-Time	Annual
O&M			O&M		
Capital			Capital		

Comments:

**Deliverable Items:**

Training completion records.

**Questions for Liberty Staff:**

Recommendations III-9, 10, and 11 appear to be very closely related. Peoples Gas is not clear what Liberty expect to see in the different action plans.

Comments:

#: III-10

UPDATED: 10/01

**Recommendation:**

Perform realistic drills with outside responders.

The EOP should require that some formalized drills be prepared based on lessons learned from actual incidents and these drills include most of the functions within the Peoples Gas organization who respond to emergencies and non-company organizations, such as the Chicago Fire Department and the Chicago Emergency Planning organization.

**Owner:**

Fred Ulanday

**Owner's Email:**

[ASUlanday@integrysgroup.com](mailto:ASUlanday@integrysgroup.com)

**Required Timeline, per Liberty Audit:**

N/A

**PGL's Position:**

Accept/Reject/Counter?

ACCEPT

**If Counter, Please Explain:**

**Support Accept/Reject Position:**

The actions responsive to this Recommendation III-10 are included in the response to Recommendation III-9.

**Action Items to Complete:**

		(MM/DD/YYYY)	Complete?
1-		Target Date:	-
2-		Target Date:	-
3-		Target Date:	-
4-		Target Date:	-
5-		Target Date:	-

**Resources Needed:**

Internal

External

**Cost/Benefit Analysis**

	Est. Costs			Est. Benefits	
	One-Time	Annual		One-Time	Annual
O&M			O&M		
Capital			Capital		

**Comments:**

**Deliverable Items:**

**Questions for Liberty Staff:**

**Comments:**

See response located in III-9.

#: III-11

UPDATED: 10/01

**Recommendation:**

Increased training for outside first responders.

Peoples Gas should increase the frequency and the scope of training for outside first responders (i.e., Chicago Fire Department, Chicago Police Department, and Chicago Water and Sewer Department) to handle personnel turnover and new individuals and to improve and cover not only the normal response but also lessons learned from the most recent incidents.

**Owner:**

Fred Ulanday

**Owner's Email:**

[ASUlanday@integrysgroup.com](mailto:ASUlanday@integrysgroup.com)

**Required Timeline, per Liberty Audit:**

N/A

**PGL's Position:**

Accept/Reject/Counter?

ACCEPT

**If Counter, Please Explain:**

**Support Accept/Reject Position:**

With regard to the CFD and the CPD, see the response to Recommendations III-9 and III-10. With regard to the City Water and Sewer Departments, information on actions in case of gas emergencies (Hits) is conveyed to these agencies through GCDPC coordinated training, which may include training delivered by TT&S personnel, in conjunction with damage prevention training (see response to Recommendation II-9).

**Action Items to Complete:**

		(MM/DD/YYYY)	Complete?
1-	-	Target Date:	-
2-	-	Target Date:	-
3-	-	Target Date:	-
4-	-	Target Date:	-
5-	-	Target Date:	-

**Resources Needed:**

Internal

External

**Cost/Benefit Analysis**

	Est. Costs			Est. Benefits	
	One-Time	Annual		One-Time	Annual
O&M			O&M		
Capital			Capital		

**Comments:**

**Deliverable Items:**

**Questions for Liberty Staff:**

**Comments:**

See responses to recommendations III-9, III-10, and II-9.

#: III-12

UPDATED: 10/01

**Recommendation:**

Provide map access for service section personnel.

The service section should have access to maps in Navigate as does gas operations. This could speed the response to some emergencies and would reduce the load on Citywide Dispatch during the emergency.

**Owner:**

Glannie Teng

**Owner's Email:**

[GATeng@peoplesgasdelivery.com](mailto:GATeng@peoplesgasdelivery.com)

**Required Timeline, per Liberty Audit:**

N/A

**PGL's Position:**

Accept/Reject/Counter?

ACCEPT

**If Counter, Please Explain:**

**Support Accept/Reject Position:**

PGL questions whether providing service personnel access with maps is going to benefit the company enough to spend an additional \$130,000 per year. All distribution employees and management employees have access to the map that can assist a service person during emergencies. However if the ICC Staff and Liberty remain convinced, access can be provided by upgrading the wireless service for field service employees to provide greater bandwidth at an annual cost of \$130K in addition to the \$35K one time cost to download Navigate software to field service employees.

**Action Items to Complete:**

		(MM/DD/YYYY)	Complete?
1-	Contract for increased bandwidth wireless service for field service employees	Target Date: 6/30/2009	No
2-	Complete downloading Navigate to Field Service Employees	Target Date: 9/30/2009	No
3-	-	Target Date: -	-
4-	-	Target Date: -	-
5-	-	Target Date: -	-

**Resources Needed:**

**Internal**

Atlas and Navigate Training for all Service Personnel. As well as load navigate software to all service gobooks

**External**

Upgrade all Data Line for all service modems to a 40MB pool plan

**Cost/Benefit Analysis**

	Est. Costs			Est. Benefits	
	One-Time	Annual		One-Time	Annual
O&M	35000	130000	O&M		
Capital			Capital		

Comments: Benefits are not based on \$.

**Deliverable Items:**

**Questions for Liberty Staff:**

**Comments:**

#: III-13

UPDATED: 1/23/2009

**Recommendation:**

Evaluate business district boundaries.

Peoples Gas has not reviewed the boundaries of its business districts within recent memory. Peoples Gas should have a process that periodically evaluates its business districts. The nature of neighborhoods and businesses change over time and Peoples Gas' procedures should define a frequency within which it identifies its business districts for leak survey and pipe replacement purposes. Peoples Gas should implement this recommendation within one year of the date of this report.

**Owner:**

Brad Haas

**Owner's Email:**

[BDHaas@integrysgroup.com](mailto:BDHaas@integrysgroup.com)

**Required Timeline, per Liberty Audit:**

ONE YEAR

**PGL's Position:**

Accept/Reject/Counter?

ACCEPT

**If Counter, Please Explain:**

**Support Accept/Reject Position:**

Peoples Gas completed an extensive review on the boundaries of business districts in 2007. The 2008 inspection cycle was based on those updated records. The Distribution Design Section utilized aerial photography from four (4) different sources to audit the business classification in addition to performing numerous site surveys. Huron Consulting will be surveying other large urban gas utilities for best practices regarding the frequency of re-surveying business district boundaries.

**Action Items to Complete:**

		(MM/DD/YYYY)	Complete?
1-	Exhibit IV (Safety Inspection Program) of Peoples Gas' Operating and Maintenance plan will be updated to reflect appropriate review cycle.	Target Date: 3/31/2009	No
2-	-	Target Date: -	-
3-	-	Target Date: -	-
4-	-	Target Date: -	-
5-	-	Target Date: -	-

**Resources Needed:**

Internal

External

**Cost/Benefit Analysis**

		Est. Costs		Est. Benefits	
		One-Time	Annual	One-Time	Annual
O&M					
Capital					

Comments:

**Deliverable Items:**

Update Exhibit IV (Safety Inspection Program) of Peoples Gas' Operating and Maintenance plan to reflect the ten year review cycle.

**Questions for Liberty Staff:**

Comments:

#: III-14 Updated 11/17/2008

**Recommendation:**  
 Improve leak response times.

Peoples Gas needs to evaluate and determine how it may best improve its leak profile, specifically the percentage of response times of calls responded to within 30 minutes and within 45 minutes. Peoples also needs to reduce the number of calls responded to in excess of 60 minutes. Peoples should evaluate alternatives for improving its leak response profile within three months of the date of this report. The evaluation should include specific recommendations, a schedule, and monthly performance reviews for meeting specific response time profile goals. The Company should implement those recommendations within six months.

**Owner:** Lance Raigne **Owner's Email:** [LL.Raigne@peoplesgasdelivery.com](mailto:LL.Raigne@peoplesgasdelivery.com)

**Required Timeline, per Liberty Audit:** EVALUATION: THREE MONTHS, IMPLEMENTATION: SIX MONTHS

**PGL's Position:** Accept/Reject/Counter? Counter

**If Counter, Please Explain:**  
 Peoples rejects the findings and analysis that the 30 and 45 minute target has not been met. Peoples accepts the recommendation to reduce the leaks in excess of 60 minutes and will adopt performance goals for leaks responded to within increments of 30, 40 and 60. Peoples will endeavor to improve through analyzing excessive response times, and allocating more resources if justified to reduce the number of responses greater than 60 minutes. The company will also increase the awareness from our employees in responding to more leaks under 60 minutes through training.

**Support Accept/Reject Position:**  
 Peoples Gas will submit an update to the table for response times to correct the percentage of calls responded to within 30 and 45 minutes. For the 30 minute target Peoples Gas achieved the 75% response goal in 2007 and for the first 10 months of 2008. However, Peoples did not achieve the 75% response goal for all calls in 2005 and 2006. For the 45 minute target Peoples achieved the 90% response goal for the highest priority calls and all calls in 2005, 2006, 2007 and 2008 YTD. Although the number of calls responded in within 60 minutes by Peoples far exceeded the standard established by New York State, Peoples recognizes the seriousness of lengthy leak response times.

<b>Action Items to Complete:</b>		(MM/DD/YYYY)	Complete?
1-	Emergency Response Time Meeting with all Managers, Supervisors and Engineers	Target Date: 12/1/2008	Yes
2-	Tailgate Meetings for Field Service Union	Target Date: 12/2/2008	Yes
3-	Complete analysis of response to leak calls exceeding 60 minutes. Complete a statistical analysis to estimate the probable reduction in Response time for varying increases in resources. Diminishing returns will be very significant in this analysis in that many resources may be required to achieve only a marginal improvement in response time greater than 60 minutes.	Target Date: 12/31/2008	Yes
4-	Based on results of statistical review, allocate additional crews to shifts that are shown to have the greatest benefit from increased resources.	Target Date: 6/30/2009	Revised
5-	Establish and adopt performance goals for leaks responded to within 30, 40 and 60 minutes.	Target Date: 1/31/2009	Yes

**Resources Needed:**  
 Internal  
 Additional resources may be justified.  
 External

<b>Cost/Benefit Analysis</b>					
		Est. Costs		Est. Benefits	
		One-Time	Annual	One-Time	Annual
O&M					
Capital					

Comments:

**Deliverable Items:**

**Questions for Liberty Staff:**

**Comments:**

#: III-15

UPDATED: 10/01

**Recommendation:**

Improve Inside Safety Inspection procedures and training.

Inside service line leak survey inspections should include inspection for corrosion at the point of entry. This should include inspection of the "heel" of service inside of the building (between the building wall and the inlet to the meter/regulator set). Peoples Gas should revise its current procedure and training materials, and implement the new procedure within six months of the date of this report.

**Owner:**

Fred Ulanday

**Owner's Email:**

[ASUlanday@integrysgroup.com](mailto:ASUlanday@integrysgroup.com)

**Required Timeline, per Liberty Audit:**

SIX MONTHS

**PGL's Position:**

Accept/Reject/Counter?

ACCEPT

**If Counter, Please Explain:**

**Support Accept/Reject Position:**

PGL will revise its training procedure and training materials for ISIs, adding emphasis in instructions to operations personnel to inspect for corrosion at the heel of the service, explaining the vulnerability to corrosion at this location due to changes in oxygen levels, soils, materials, and chemicals leaching from the foundation wall. Visual, physical examples of corrosion will also be provided in training.

**Action Items to Complete:**

		(MM/DD/YYYY)	Complete?
1-	Revise training documents.	Target Date: 12/31/2008	Yes
2-	-	Target Date: -	-
3-	-	Target Date: -	-
4-	-	Target Date: -	-
5-	-	Target Date: -	-

**Resources Needed:**

Internal

External

**Cost/Benefit Analysis**

	Est. Costs			Est. Benefits	
	One-Time	Annual		One-Time	Annual
O&M			O&M		
Capital			Capital		

Comments:

**Deliverable Items:**

**Questions for Liberty Staff:**

**Comments:**

Revisions complete and incorporated into the present training.

#: III-16 Updated 1/22/2009

**Recommendation:**  
 Improve leak management practices.

Peoples Gas can improve leak management practices through a number of actions: 1- Increase the percentage of repairs as opposed to investigations. In part, this will be accomplished through an increased presence of Peoples Gas supervision on site. 2- Improve the consistency of leak-area investigation documentation. 3- Ensure crews evaluate and use information contained on leak repair sketches and barhole reading histories. 4- Re-evaluate Peoples Gas' practice of reducing leak hazard classifications without making repairs at leak locations. Specific questionable practices include venting a leak area or placing a vented manhole cover over a manhole without continuous repair activities. 5- Re-evaluate Peoples Gas' practice of clearing leaks without repairs. 6- Institute a leak recheck of recently repaired leaks to verify the effectiveness of repairs. Peoples Gas should develop a written plan for meeting these recommendations within six months of the date of this report. The plan should include revised procedures, training, implementing schedules, and specific quality assurance inspections to verify their implementation within one year.

**Owner:** Lance Rainge **Owner's Email:** LLRainge@peoplesgasdelivery.com

**Required Timeline, per Liberty Audit:** WRITTEN PLAN: SIX MONTHS, IMPLEMENTATION: ONE YEAR

**PGL's Position:** Accept/Reject/Counter? Counter

**If Counter, Please Explain:**  
 1. Effective drilling, testing and pinpointing through aeration are sound practices that eliminate unnecessary excavation over dry holes particularly in high traffic arterial streets.

**Support Accept/Reject Position:**  
 Accept items 2 through 5

Action Items to Complete:	Target Date:	(MM/DD/YYYY)	Complete?
1- Leak sketches are created in Navigate when a leak is discovered while performing a leak survey or during the initial recheck of a leak initially investigated by an employee who was not assigned a leak survey order. Distribution General Supervisors will print out the latest leak sketch available in Navigate for an active leak and make it available for the Crew Leader assigned to repair the leak. Crew leaders will be instructed to use the information captured in previous leak sketches to more effectively pinpoint and repair leaks.	Target Date:	11/1/2008	Yes
2- The work management team has proposed to configure the system to attach the latest leak sketch to the leak repair order.	Target Date:	3/31/2010	No
3- The company does not consider the venting of a below ground, outside gas leak as a temporary repair. This activity is discouraged, but on those limited occasions where it is deemed necessary to either vent or allow a temporary repair on a below ground, outside gas leak, the following procedures will be followed. Manager or higher approval will be required and the manager will be responsible for documenting and tracking the number of days until a permanent repair is made. Permanent repairs will typically be made within five (5) business days, but not to exceed ten (10) business days. Daily rechecks will be conducted on all leaks vented or temporarily repaired. The ICC pipeline safety group will be notified if permanent repairs will be delayed for more than 10 days.	Target Date:	11/1/2008	Yes
4- No leak will be cleared in LKMS prior to an Operations Manager or Construction Manager's review of known work in the area which could account for the leak being cleared.	Target Date:	11/1/2008	Yes
5- Upon implementation of the new work management system, Peoples will require two (2) successive zero readings before the leak can be cleared after a repair. Additional rechecks must be made no sooner than 3 days and no later than 7 days after the repair. An inquiry will be made as to the feasibility of re-instituting this process in the legacy LKMS system prior to the implementation of the new work management system.	Target Date:	3/31/2010	No
6- Revise Distribution Department General Order 0.300 to add clarity to Action Items Numbers 1, 3, 4 and 5.	Target Date:	3/31/2009	No

**Resources Needed:**  
 Internal  
 Work Management Team and Gas Operations Management and hourly field employees.

External

**Cost/Benefit Analysis**

	Est. Costs			Est. Benefits	
	One-Time	Annual		One-Time	Annual
O&M			O&M		
Capital			Capital		

Comments:

**Deliverable Items:**

**Questions for Liberty Staff:**

**Comments:**  
 Liberty comments include;

#: III-17

Updated

11/17/2008

**Recommendation:**

Reduce the year-end leak backlog.

Peoples Gas needs to repair more leaks and reduce the level of backlogs at year-end. In both relative terms, compared to its peers, and absolute numbers of leaks outstanding, Peoples Gas' leak backlog is too high. Peoples Gas should reduce the backlog so that the percentage of the leaks in backlog at year-end is less than 10 percent of the number of leaks repaired during the year. Peoples Gas should develop and implement a written plan for meeting this recommendation within three months of the date of this report. The plan should include specific goals for reducing leak backlogs and repairing more leaks, including target levels for leak backlogs at year-end for the current and following two years.

**Owner:**

Lance Rainge

**Owner's Email:**

[LLRainge@peoplesgasdelivery.com](mailto:LLRainge@peoplesgasdelivery.com)

**Required Timeline, per Liberty Audit:**

THREE MONTHS

**PGL's Position:**

Accept/Reject/Counter?

Accept

**If Counter, Please Explain:**

**Support Accept/Reject Position:**

Peoples current pace of leaks repaired versus leaks received is 110%. We plan to continue this rate of leaks repaired versus leaks received through the end of 2009, achieving a reduction in the backlog so that the percentage of leaks in backlog at year-end 2009 is below 10%. We currently have a report that keeps a yearly cumulative total of leaks cleared and leaks repaired.

**Action Items to Complete:**

		(MM/DD/YYYY)	Complete?
1-	Reduce the number of underground leaks by increasing leaks repaired versus leaks received.	10/1/2008	Yes
2-	Provide copy of November 19, 2008 report on Status of Leak Indications	11/21/2008	Yes
3-			
4-			
5-			

**Resources Needed:**

Internal

40 Two Person Distribution Crews at PGL times 2,080 hours

External

**Cost/Benefit Analysis**

		Est. Costs				Est. Benefits	
		One-Time	Annual			One-Time	Annual
O&M			\$ -	O&M			
Capital				Capital			

Comments:

**Deliverable Items:**

**Questions for Liberty Staff:**

Comments:

**Recommendation:**

Implement practical testing of leak investigation personnel.

Leak investigation is not a textbook exercise. While there is a role for a written test in evaluating competence in the required activities, a practical test is also necessary to determine that the employees are able to perform adequately in the field. Peoples Gas should begin to develop plans to address this recommendation within three months of the date of this report, and complete its implementation within one year of the date of this report.

**Owner:**

Fred Ulanday

**Owner's Email:**

[ASUlanday@integrysgroup.com](mailto:ASUlanday@integrysgroup.com)

**Required Timeline, per Liberty Audit:**

PLAN DEVELOPMENT: THREE MONTHS. IMPLEMENTATION: ONE YEAR

**PGL's Position:**

Accept/Reject/Counter?

ACCEPT

**If Counter, Please Explain:**

**Support Accept/Reject Position:**

PGL will investigate the use of the electronic leak simulation software that was mentioned in conclusion supporting the recommendation. Field training sites will also be researched such as other utility facilities (Ameren and Nicor), construction of in house leak fields, or use real life field examples.

**Action Items to Complete:**

	Target Date:	(MM/DD/YYYY)	Complete?
1- Review leak simulation software.		1/31/2009	Yes
2- Research field training sites		2/28/2009	No
3- Integrate the leak simulation software or field training (if feasible by this date) into leak investigation training curriculum and lesson plans.		3/31/2009	No
4- Complete new training for leak investigation personnel.		9/30/2009	No
5- -		-	-
6- -		-	-

**Resources Needed:**

Internal

External

**Cost/Benefit Analysis**

		Est. Costs		Est. Benefits	
		One-Time	Annual	One-Time	Annual
O&M			4 hrs leak sim s/w training/testing per person x		
Capital	\$5,000 - software cost				

Comments:

**Deliverable Items:**

Revised leak investigation training curriculum and lesson plans; Leak investigation personnel training completion records.

**Questions for Liberty Staff:**

Comments:

#: IV-1

UPDATED: 1/23/2009

**Recommendation:**

Develop specific and comprehensive job descriptions.

The positions of General Manager of Construction, Construction Manager, and Construction Technician do not have job descriptions, so incumbents are aware of their job duties and responsibilities. Peoples Gas should implement this recommendation within six months of the date of this report.

**Owner:**

John Goetz

**Owner's Email:**

[jgoetz@peoplesgasdelivery.com](mailto:jgoetz@peoplesgasdelivery.com)

**Required Timeline, per Liberty Audit:**

SIX MONTHS

**PGL's Position:**

Accept/Reject/Counter?

ACCEPT

**If Counter, Please Explain:**

**Support Accept/Reject Position:**

Job Descriptions for General Manager & Manager of Construction will be reviewed and revised to better describe job duties and reporting relationships. The job description for Technician is rather new and needs no revision. The majority of employees in these roles are incumbents and have either worked in or closely with others in the position and know what is expected of them as employees in their roles. However Peoples Gas agrees that it would be beneficial to have more comprehensive written descriptions.

**Action Items to Complete:**

		(MM/DD/YYYY)	Complete?
1-	Review Job Descriptions for General Manager, Manager, of Technician of Construction	Target Date: 12/31/2008	Yes
2-	Revise Job Descriptions for General Manager & Manager of Construction	Target Date: 12/31/2008	Yes
3-	Review Job Descriptions for General Manager, Manager, of Technician of Construction with respective personnel	Target Date: 12/31/2008	Yes
4-	-	Target Date: -	-
5-	-	Target Date: -	-

**Resources Needed:**

Internal

HR Representative & Gen. Manager of Construction - 40 hours , Const. Managers - 1 hour each, Technicians - 5 hours

External

**Cost/Benefit Analysis**

		Est. Costs		Est. Benefits	
		One-Time	Annual	One-Time	Annual
O&M	\$5,000				
Capital					

Comments:

**Deliverable Items:**

Revised Job Descriptions for General Manger of Construction, Manager of Construction, Technician

**Questions for Liberty Staff:**

**Comments:**

#: IV-2

UPDATED: 1/23/2009

**Recommendation:**

Review and formalize contractor requirements documents.

Part IV Engineering Specifications (Revised 10-25-07), should include a Peoples Gas letterhead and a document number or numbered engineering specification. Furthermore, documents containing contract requirements should have specific reference to appropriate Peoples' specifications or standards, other than just reference to "General Detail Drawing(s)." Peoples Gas should implement this recommendation within six months of the date of this report.

**Owner:**

John Goetz

**Owner's Email:**

[jgoetz@peoplesgasdelivery.com](mailto:jgoetz@peoplesgasdelivery.com)

**Required Timeline, per Liberty Audit:**

SIX MONTHS

**PGL's Position:**

Accept/Reject/Counter?

ACCEPT

**If Counter, Please Explain:**

**Support Accept/Reject Position:**

Part IV Engineering Specifications will be revised and printed on Company letterhead . Its function will serve chiefly in the procurement process for bidding work. It will be supplemented with a useful Contractor Procedures Manual .

**Action Items to Complete:**

		(MM/DD/YYYY)	Complete?
1-	Revise Engineering Part IV Specifications & Print on new letterhead	Target Date: 12/31/2008	Yes
2-	Assemble and construct a Manual for Contractors whose basis is extracted from the Distribution Department Manual .	Target Date: 12/31/2008	Yes
3-	Distribute Contractor Manual to Contractor for Distribution	Target Date: 12/31/2008	Yes
4-	-	Target Date: -	-
5-	-	Target Date: -	-

**Resources Needed:**

Internal

Construction General Manager 40 hours Engineer 40 hours , Paper, CD , Books

External

**Cost/Benefit Analysis**

		Est. Costs		Est. Benefits	
		One-Time	Annual	One-Time	Annual
O&M	\$1,200		\$250		
Capital					

Comments:

**Deliverable Items:**

1. Revised Part IV Engineering Specifications
2. Contractor Procedures Manual - Hard Copy & CD

**Questions for Liberty Staff:**

Comments:

#: IV-3

Updated

1/23/2009

**Recommendation:**

Develop detailed construction inspection checklists for construction inspectors.

Inspectors need detailed checklists to enable them to evaluate systematically and comprehensively contractor construction crews' quality of work and compliance with Peoples Gas' construction standards and procedures. Peoples Gas should implement this recommendation within nine months of the date of this report.

**Owner:**

John Goetz

**Owner's Email:**

[jgoetz@peoplesgasdelivery.com](mailto:jgoetz@peoplesgasdelivery.com)

**Required Timeline, per Liberty Audit:**

NINE MONTHS

**PGL's Position:**

Accept/Reject/Counter?

ACCEPT

**If Counter, Please Explain:**

**Support Accept/Reject Position:**

A detailed Construction checklist will be created and filled out for each job a technician watches. These will be turned in with their weekly job recap sheets to the Construction Engineer.

**Action Items to Complete:**

	(MM/DD/YYYY)	Complete?
1- Create Detailed Construction Checklist	Target Date: 11/15/2008	Yes
2- Review form with Technicians	Target Date: 11/30/2008	Yes
3- Begin Use of Checklist	Target Date: 11/30/2008	Yes
4- -	Target Date: -	-
5- -	Target Date: -	-

**Resources Needed:**

Internal

Engineer 24 Hours Technician 5 hours

External

None

**Cost/Benefit Analysis**

		Est. Costs		Est. Benefits	
		One-Time	Annual	One-Time	Annual
O&M	\$1,500		\$300		
Capital					

**Comments:**

**Deliverable Items:**

Construction Checklist

**Questions for Liberty Staff:**

**Comments:**

#: IV-4

UPDATED: 1/23/2009

**Recommendation:**

Re-evaluate and justify the number of contractor construction projects assigned to its Construction Technicians.

To ensure their ability to perform comprehensive evaluations of contractors' code compliance at each construction site, Peoples Gas should reduce construction technicians' workloads to allow them to focus on a manageable number of projects. Peoples Gas should implement this recommendation within six months of the date of this report.

**Owner:**

John Goetz

**Owner's Email:**[jgoetz@peoplesgasdelivery.com](mailto:jgoetz@peoplesgasdelivery.com)**Required Timeline, per Liberty Audit:**

SIX MONTHS

**PGL's Position:**

Accept/Reject/Counter?

ACCEPT

**If Counter, Please Explain:****Support Accept/Reject Position:**

The company accepts this recommendation and prior to receiving it was taking steps to increase the technician staff by 2 people to allow for greater supervision . One technician was hired and another is planned to start on 10/06/08. It is anticipated that 3 additional Technicians will be added . This will bring the total technician complement to 6. This should allow for an average day coverage of 2 jobs per technician and allow for adequate training and development time.

**Action Items to Complete:**

	(MM/DD/YYYY)	Complete?
1- Review workload , analyze, and make staffing recommendation	Target Date: 10/31/2008	Yes
2- Complete the hiring of 2 Technicians that originated in 2008	Target Date: 12/31/2008	Yes
3- Hire additional technicians (Current staffing is adequate based of forecasted workload for 2009)	Target Date: 3/31/2009	Yes
3-		
4-	Target Date: -	-
5-	Target Date: -	-

**Resources Needed:**

## Internal

Engineer, Gen. Manager Construction, HR Professional , Construction Managers

## External

**Cost/Benefit Analysis**

	Est. Costs			Est. Benefits	
	One-Time	Annual		One-Time	Annual
O&M			O&M		
Capital	\$250,000	\$240,000	Capital		\$240,000

## Comments:

**Deliverable Items:**

Analysis and Recommendation of Staffing Levels , Add 3 people to staff and equip them and make them functional .

**Questions for Liberty Staff:****Comments:**

#: IV-5 Updated 11/14/2008

**Recommendation:**  
 Require contracting crews to cut out and destructively test the first fusion joint of each day's work.

To ensure sound plastic fusion joints, Peoples Gas needs to implement the best practice of requiring contractors performing fusion joints to verify the quality of their equipment by cutting out and destructively testing the first fusion joint of the day. Peoples Gas should implement this recommendation within nine months of the date of this report.

**Owner:** John Goetz **Owner's Email:** [jgoetz@peoplesgasdelivery.com](mailto:jgoetz@peoplesgasdelivery.com)

**Required Timeline, per Liberty Audit:** NINE MONTHS

**PGL's Position:** Accept/Reject/Counter? Counter

**If Counter, Please Explain:**  
 Liberty's proposed practice was discussed at the Fall Meeting of the American Gas Association's Plastic Materials Committee, comprised of member gas companies, plastic manufacturers, and other experts in the industry. None of the companies represented use that practice, nor did they feel it was workable. Procedures for use of pyrometers, visual inspections, equipment inspection, and cut-out requirement are contained in Distribution Manual Section 9.04.

**Support Accept/Reject Position:**  
 The recommended practice is not widely used in the industry and is not a best practice. Peoples Gas agrees with Liberty that the integrity of fusion joints is important, and, to achieve the goal of this recommendation, Peoples Gas proposes to increase the level of supervision crews receive. In addition each technician will be equipped with a pyrometer and check the temperature of heating plates a minimum of once per day. They will visually inspect joints and cut out joints that they feel are questionable. They will inspect contractor equipment daily for certification tags by TTC and visually check equipment for signs of damage or misalignment. They will also check the fuser's qualification card and status to insure that only qualified personnel are performing fusion joints.

<b>Action Items to Complete:</b>		(MM/DD/YYYY)	Complete?
1- Purchase pyrometers for technicians	Target Date:	12/31/2008	Yes
2- Modify Construction check list as needed to capture inspections of fusing equipment.	Target Date:	1/31/2009	Yes
3- Provide Liberty a quarterly report of all fusion joints that failed pressure tests.	Target Date:	1/31/2009	No
4-	Target Date:		
5-	Target Date:		

**Resources Needed:**  
 Internal  
 External

**Cost/Benefit Analysis**

	Est. Costs			Est. Benefits	
	One-Time	Annual		One-Time	Annual
O&M			O&M		
Capital			Capital		

Comments:

**Deliverable Items:**

**Questions for Liberty Staff:**

**Comments:**

#: IV-6

UPDATED: 10/01

**Recommendation:**

Develop a means to determine the qualifications of individuals performing covered tasks on job sites.

To assist its personnel in verifying the qualifications of contractor personnel on job sites, Peoples Gas should develop a system to allow its inspectors to examine qualifications while on site. Peoples Gas should implement this recommendation within one year of the date of this report.

**Owner:**

John Goetz/ Reply by T. Lenart

**Owner's Email:**

[tlenart@peoplesgasdelivery.com](mailto:tlenart@peoplesgasdelivery.com)

**Required Timeline, per Liberty Audit:**

ONE YEAR

**PGL's Position:**

Accept/Reject/Counter?

ACCEPT

**If Counter, Please Explain:**

**Support Accept/Reject Position:**

Provide broadband wireless access to Construction Technicians to access the LAN based database for qualification records.

**Action Items to Complete:**

		(MM/DD/YYYY)	Complete?
1-	Provide wireless remote access to LAN for Construction Technicians	9/30/2009	No
2-	-	-	-
3-	-	-	-
4-	-	-	-
5-	-	-	-

**Resources Needed:**

Internal

External

**Cost/Benefit Analysis**

	Est. Costs			Est. Benefits	
	One-Time	Annual		One-Time	Annual
O&M			O&M		
Capital			Capital		

Comments:

**Deliverable Items:**

**Questions for Liberty Staff:**

Comments:

#: IV-7

UPDATED: 1/23/2009

**Recommendation:**

Conduct audits of contractor crews as required.

Peoples Gas should evaluate why it has not been conducting audits of its construction contracting crews in accordance with its Compliance Monitoring Group requirements, and remedy the problem to ensure it completes audits of all its contractor construction crews. Peoples Gas should implement this recommendation within three months of the date of this report.

**Owner:**

Rich Echoles

**Owner's Email:**

[RECHOLES@integrysgroup.com](mailto:RECHOLES@integrysgroup.com)

**Required Timeline, per Liberty Audit:**

THREE MONTHS

**PGL's Position:**

Accept/Reject/Counter?

ACCEPT

**If Counter, Please Explain:**

**Support Accept/Reject Position:**

Peoples Gas proposed plan and response to Liberty Recommendation V-8 also addresses Liberty Recommendation IV-7 "Contractor audits of contractor crews as required in QAQC Program Manual."

**Action Items to Complete:**

	(MM/DD/YYYY)	Complete?
1- Full transition - CMG Group performing all shops QAQC audits including contractor	6/30/2009	Revised
2- -	-	-
3- -	-	-
4- -	-	-
5- -	-	-

**Resources Needed:**

Internal

External

**Cost/Benefit Analysis**

	Est. Costs			Est. Benefits	
	One-Time	Annual		One-Time	Annual
O&M			O&M		
Capital			Capital		

Comments:

**Deliverable Items:**

**Questions for Liberty Staff:**

**Comments:**

#: V-1

UPDATED: 10/1/23/2009

**Recommendation:**

Review and improve the curricula of all training classes.

Liberty noted several deficiencies in training curricula and materials. Peoples Gas should conduct, or have conducted, a complete review of training curricula and materials. It should complete this review within one year of the date of this report.

**Owner:**

Fred Ulanday

**Owner's Email:**

[ASUlanday@integrysgroup.com](mailto:ASUlanday@integrysgroup.com)

**Required Timeline, per Liberty Audit:**

ONE YEAR

**PGL's Position:**

Accept/Reject/Counter?

ACCEPT

**If Counter, Please Explain:**

**Support Accept/Reject Position:**

Lesson plans are reviewed every year -- before classes are taught. Input from QA/QC findings will be used to fine tune classes. This year particular attention will be paid to Locating and Marking and Inside Safety Inspections. PGL will review training curricula and materials during the year subsequent to date of this report and update as necessary.

**Action Items to Complete:**

		(MM/DD/YYYY)	Complete?
1-	The review and revision of the training plan for Inside Safety Inspections has been completed. See the response form for Recommendation III-15.	Target Date: N/A	Yes
2-	See action items for Recommendation II-8 for Locator Training Program review. The target completion date for this specific training program review and update is:	Target Date: 12/31/2008	Yes
3-	Complete review of Lesson Plans (Periodically from start date)	Target Date: 10/31/2008 to 9/30/09	No
4-	Revise Lesson Plans as per results of the reviews (Periodically from start date)	Target Date: 10/31/2008 to 9/30/09	No
5-	-	Target Date: -	-

**Resources Needed:**

**Internal**

An additional 0.25 FTE Senior Instructor will be required.

**External**

**Cost/Benefit Analysis**

		Est. Costs				Est. Benefits	
		One-Time	Annual			One-Time	Annual
O&M			\$34,519 (salary with loadings, 0.25 FTE Senior Instructor)	O&M			
Capital				Capital			

**Comments:**

**Deliverable Items:**

Revised locator training curricula and training materials for Inside Safety Inspection and for Locator training classes; Revised or unchanged curricula and training materials for all other training classes as a result of the reviews of all other classes.

**Questions for Liberty Staff:**

**Comments:**

#: V-2

UPDATED: 2/11/2009

**Recommendation:**

Review and reduce non-training job duties of instructors.

The primary duty of the instructors is to instruct. This requires that the instructors take appropriate training themselves, both initially and with regular refresher classes, to become expert in the subjects they teach, and to maintain that expertise on a current basis. As currently configured, their job duties allow no time for their training. Peoples Gas should conduct this review within six months of the date of this report and complete the implementation of changes within 18 months of the date of this report.

**Owner:**

Fred Ulanday

**Owner's Email:**

ASUlanday@integrysgroup.com

**Required Timeline, per Liberty Audit:**

COMPLETE REVIEW: SIX MONTHS. COMPLETION: 18 MONTHS

**PGL's Position:**

Accept/Reject/Counter?

ACCEPT

**If Counter, Please Explain:**

**Support Accept/Reject Position:**

Plans for the continuing education for PGL instructors will be established in order to maintain their expertise and expand their knowledge applicable to gas operations. An increase of Technical Training and Standards staffing levels will be considered in order to make these activities possible within the timeframe cited in the Recommendation. This includes the possibility of increased staffing for operations technical support and/or reducing the workload in some non-training duties at TT&S.

**Action Items to Complete:**

		(MM/DD/YYYY)	Complete?
1-	Analyze and determine the continuing education needs of TT&S instructors.	Target Date: 11/28/2008	Yes
2-	Research internal and external training programs for instructor staff, and complete the scheduling of training .	Target Date: 2/15/2009	No
3-	Review technical support resource needs to handle current non-training duties of instructors.	Target Date: 12/31/2008	Yes
4-	Final determination of need for additional technical support FTE.	Target Date: 1/31/2009	Yes
5-	Latest start date for the possible one additional technical support FTE.	Target Date: 3/31/2009	No
6-	Instructors relieved of non-training duties.	Target Date: 8/31/2009	No
7-	Review and reassessment of further additional technical support resources needs.	Target Date: 8/31/2009	No
8-	Add further additional technical support resource FTE, if found required from reassessment.	Target Date: 10/30/2009	No
9-	Complete the first cycle of continuing education training for TT&S instructors.	Target Date: 3/31/2010	No

**Resources Needed:**

Internal

One additional technical support FTE possible based on analysis of training needs and scheduling of training for instructors.

External

**Cost/Benefit Analysis**

	Est. Costs			Est. Benefits	
	One-Time	Annual		One-Time	Annual
O&M		\$119,366 (salary , loaded, for 1 Technician FTE)	O&M		
Capital			Capital		

Comments:

**Deliverable Items:**

Results of Continuing Education Needs Assessment for TT&S instructors; results of training program research; training completion records.

**Questions for Liberty Staff:**

Comments:

#: V-3

UPDATED: 1/23/2009

**Recommendation:**

Revise the testing methods for evaluations of qualifications to perform covered tasks.

Peoples Gas should re-evaluate its covered tasks to include practical evaluation of critical tasks such as leak surveys in addition to written tests. Peoples Gas should also remove "work performance history review" as an evaluation method. Peoples Gas should revise the Distribution Covered Task Evaluation Technique in Appendix A of the OQ Program to reflect the above changes. Peoples Gas should also review its written tests to ensure that those tests evaluate the overall knowledge of the subject, rather than concentrating heavily on individual areas. Peoples Gas should implement this recommendation within one year of the date of this report, in conjunction with Recommendation V-1.

**Owner:**

Fred Ulanday

**Owner's Email:**

ASUlanday@integrygroup.com

**Required Timeline, per Liberty Audit:**

ONE YEAR

**PGL's Position:**

Accept/Reject/Counter?

ACCEPT

**If Counter, Please Explain:****Support Accept/Reject Position:****Action Items to Complete:**

		(MM/DD/YYYY)	Complete?
1-	Review new Leak Investigation Simulation Software.	Target Date: 10/31/2008	Yes
2-	Presuming viability of the Leak Investigation Simulation Software, incorporate its use in practical evaluation for the leak survey function.	Target Date: 2/28/2009	No
3-	Research the viability/concept design/budget costing of a "Leak Street" facility for personnel practical evaluation as an alternative to Leak Investigation Simulation software	Target Date: 4/30/2009	No
4-	Review Operator Qualification Program Documents and remove references to "Work Performance History Review."	Target Date: 12/31/2008	Yes
5-	Review covered tasks and associated practical exams, develop and include practical exams where none exist for covered tasks that are deemed critical. Develop and include practical exams for less critical covered tasks if appropriate.	Target Date: 10/31/08 to 9/30/09	No
6-	Review covered tasks and associated written exams, revise exams where appropriate to ensure that those exams evaluate the overall knowledge of the subject.	Target Date: 10/31/08 to 9/30/09	No

**Resources Needed:**

Internal

External

**Cost/Benefit Analysis**

	Est. Costs			Est. Benefits	
	One-Time	Annual		One-Time	Annual
O&M			O&M		
Capital	\$5,000 (Leak Survey training software)		Capital		

Comments:

**Deliverable Items:**

Evaluation of new Leak Investigation Simulation Software and its applicability; Revised lesson plans where new Practical exams have been included; Revised OQ Program documents.

**Questions for Liberty Staff:**

PGL requests clarification of instances (covered tasks), if audit data is available, where PGL written tests may not evaluate the overall knowledge of the subject.

Comments:

#: V-4

UPDATED: 1/23/2009

**Recommendation:**

Ensure that all contractors have acceptable Operator Qualification Plans.

Peoples Gas should implement this recommendation immediately.

**Owner:**

Fred Ulanday

**Owner's Email:**

[ASUlanday@integrysgroup.com](mailto:ASUlanday@integrysgroup.com)

**Required Timeline, per Liberty Audit:**

IMMEDIATELY

**PGL's Position:**

Accept/Reject/Counter?

ACCEPT

**If Counter, Please Explain:**

**Support Accept/Reject Position:**

All contractor OQ plans are current at PGL. This Recommendation is considered implemented.

**Action Items to Complete:**

		(MM/DD/YYYY)	Complete?
1-	This Recommendation is considered implemented.	-	Yes
2-	Q1 Liberty Review	12/31/2009	No
3-	-	-	-
4-	-	-	-
5-	-	-	-

**Resources Needed:**

Internal

External

**Cost/Benefit Analysis**

		Est. Costs		Est. Benefits	
		One-Time	Annual	One-Time	Annual
O&M	N/A				
Capital					

Comments:

**Deliverable Items:**

**Questions for Liberty Staff:**

Comments:

#: V-5

UPDATED: 1/23/2009

**Recommendation:**

Analyze crew leader retest failures.

Peoples Gas should perform an analysis to determine in what areas (covered tasks) crew leaders are failing retests. Peoples Gas should re-evaluate each of the areas (covered tasks) that might necessitate training more often (less than three years) due to the infrequent or repetitive nature of performing a covered task identified by the retest analysis. Peoples Gas should complete an initial review of such failures within six months of the date of this report and make this analysis a continuing part of the qualification process.

**Owner:**

Fred Ulanday

**Owner's Email:**[ASUlanday@integrysgroup.com](mailto:ASUlanday@integrysgroup.com)**Required Timeline, per Liberty Audit:**

SIX MONTHS

**PGL's Position:**

Accept/Reject/Counter?

ACCEPT

**If Counter, Please Explain:****Support Accept/Reject Position:**

PGL will conform with this Recommendation. PGL will include retraining in the covered tasks identified by the retest analysis during the annual Crew Refresher and Field Service Ingrade training.

**Action Items to Complete:**

		(MM/DD/YYYY)	Complete?
1-	Initial Review of covered tasks failures for the most recent OQ Period	11/26/2008	Yes
2-	Review of covered tasks failures for the past 3 years	12/31/2008	Yes
3-	Revise material for Upcoming Refresher Training covering area of failures	1/31/2009	No
4-	Follow-up Review of covered tasks failures for the subsequent OQ Period	11/25/2009	No
5-		-	-

**Resources Needed:**

Internal

External

**Cost/Benefit Analysis**

		Est. Costs		Est. Benefits	
		One-Time	Annual	One-Time	Annual
O&M			150 wage earners per shop =450 man-days X 8hr/day=		
Capital					

Comments:

**Deliverable Items:**

Initial Review of covered tasks failures for the most recent OQ Period. Review of covered tasks failures for the past 3 years. Revised material for Refresher Training covering area of failures. Follow-up Review of covered tasks failures for the subsequent OQ Period. Darin Burk suggested more remedial training be considered during triennial re-qualification if significant improvement is not experienced over first 3 year cycle.

**Questions for Liberty Staff:****Comments:**

Additions to the training curriculum may result in an additional day of training.

#: V-6

UPDATED: 10/01

**Recommendation:**

Modify requalification interval practices.

Peoples Gas should change its OQ Plan (Section 5.2 Evaluation of Qualifications, page 8) to require requalification within 3 years or not to exceed 39 months, rather than up to 3 years 11 months as currently allowed. Peoples Gas should implement this change within three months of the date of this report.

**Owner:**

Fred Ulanday

**Owner's Email:**

[ASUlanday@integrysgroup.com](mailto:ASUlanday@integrysgroup.com)

**Required Timeline, per Liberty Audit:**

THREE MONTHS

**PGL's Position:**

Accept/Reject/Counter?

ACCEPT

**If Counter, Please Explain:**

**Support Accept/Reject Position:**

PGL will conform with this Recommendation, with Operations sending personnel in for requalification by their due date.

**Action Items to Complete:**

		(MM/DD/YYYY)	Complete?
1-	Update the OQ Plan document and communicate the policy change to district gas operations management.	12/31/2008	Yes
2-		-	-
3-		-	-
4-		-	-
5-		-	-

**Resources Needed:**

Internal

External

**Cost/Benefit Analysis**

	Est. Costs			Est. Benefits	
	One-Time	Annual		One-Time	Annual
O&M	N/A		O&M		
Capital			Capital		

**Comments:**

**Deliverable Items:**

Updated OQ Plan document and policy change communications

**Questions for Liberty Staff:**

**Comments:**

New time frames to begin at the start of the 2009 training year.

#: V-7

UPDATED: 2/10/2009

**Recommendation:**

Address the new Pipeline and Hazardous Materials Safety Administration (PHMSA) training requirements.

Peoples Gas should train instructors and add to course curricula the new requirements and guidelines contained in the PHMSA Advisory bulletins.

**Owner:**

Fred Ulanday

**Owner's Email:**

[ASUlanday@integrysgroup.com](mailto:ASUlanday@integrysgroup.com)

**Required Timeline, per Liberty Audit:**

N/A

**PGL's Position:**

Accept/Reject/Counter?

ACCEPT

**If Counter, Please Explain:**

**Support Accept/Reject Position:**

The topics covered in PGL training for field personnel for excavation damage prevention were compared by training staff management to the requirements and guidelines covered in the subject advisory bulletins, at the time of publication of the bulletins. Requirements were found to be in place in the current training program, but instructors were not specifically informed of the bulletins.

Instructors will be informed of the Advisories' requirements and guidelines, and these requirements and guidelines will again be reviewed to assure company compliance. Damage prevention best practices advocated by the Common Ground Alliance will be compared to current practices. Current practices will be updated for conformance to

**Action Items to Complete:**

		(MM/DD/YYYY)	Complete?
1-	Comparative study of the requirements and guidelines from Advisory Bulletins 06-01 and 06-03 to current course curricula related to excavation damage prevention.	Target Date: 10/31/2008	Yes
2-	Identify gaps in current training curricula shown by the comparative study to ADB 06-01 and 06-03 requirements and guidelines.	Target Date: 11/28/2008	Yes
3-	Review and compare the CGA Best Practices to current excavation damage prevention processes training curricula; and the NULCA locator training standards and practices to current training curricula.	Target Date: 11/28/2008	Yes
4-	Identify gaps in current training curricula shown by the comparative studies to CGA Best Practices and NULCA locator training standards.	Target Date: 1/31/2009	Yes

**Resources Needed:**

Internal

Supervisor OQ/Gas Training, PGL Senior Engineer - for comparative study of Advisory Bulletins 06-01 and 06-03 to curricula.

External

Consultant, PGL Senior Engineer - for comparison of CGA Best Practices to current excavation damage prevention processes

**Cost/Benefit Analysis**

		Est. Costs		Est. Benefits	
		One-Time	Annual	One-Time	Annual
O&M	Consultant Cost ?				
Capital					

Comments:

**Deliverable Items:**

Gap analysis results from comparative study of Advisory Bulletins 06-01 and 06-03 to curricula. Gap analysis results from comparison of CGA Best Practices and NULCA locator training standards, to current curricula for excavation damage prevention processes training and locator training. (Note: Updated lesson plans will be prepared by March 31, 2009, in associated with Recommendation II-8.)

**Questions for Liberty Staff:**

Comments:

#: V-8 Updated 11/14/2008

**Recommendation:**  
 Improve the Quality Assurance / Quality Control (QA/QC) Program.

While the new QA program is under development and implementation, Peoples Gas should make necessary improvements in the existing program. These include: 1- Ensure that it audits all fieldwork activities, not just those taking place when the auditor happens to be on site, 2- Assign sufficient staff to conduct audits, 3- Track audit results and required corrective actions to completion, 4- Perform more independent audits using an expanded CMG or other personnel not from the shop performing the audited activity. Peoples Gas should begin to make these changes immediately and report of progress to the ICC within six months of the date of this report.

**Owner:** Rich Echoles **Owner's Email:** [recholes@integrysgroup.com](mailto:recholes@integrysgroup.com)

**Required Timeline, per Liberty Audit:** START: IMMEDIATELY. PROGRESS REPORT TO ICC: SIX MONTHS

**PGL's Position:** Accept/Reject/Counter? ACCEPT

**If Counter, Please Explain:**

**Support Accept/Reject Position:**

- 1) Peoples Gas propose to make changes to its Quality Assurance and Quality Control (QAQC) Program requiring that each field activity be audited once (1) per quarter - requiring that all QAQC database checklist questions for each activity be audited, not just the questions pertaining to the tasks that the Auditor observes when he happens to be on site. These activities are listed in the November 2007 version of the QAQC Program manual and are in the following departments: Distribution, Field Services, Gas Operations (GOS) and Special Projects Field Services.
- 2) Peoples Gas propose to increase the CMG staff by 6 Auditors.
- 3) Peoples Gas propose to track audit results and corrective actions to completion in the current QAQC database. The database features will be enhanced to allow this functionality.
- 4) Peoples Gas propose to have the CMG (expanded staff) perform all the QAQC Performance Audits. These groups will be independent of the shops.
- 5) The CMG Group will also perform all contractor QAQC Performance Audits at the frequency specified in the QAQC Program manual (November 2007) - 1 per quarter per job type performed. The transition schedule (Actions items to Complete-section below) is the same for the contractor audits as for the shop audits.

Action Items to Complete:	(MM/DD/YYYY)	Complete?
1- Plan must be approved by PGL Management	Target Date: 10/31/2008	Yes
2- 1) Logistics/Planning - transition audits from shops to CMG Group 2) Enhance QAQC Database	Target Date: 11/30/2008	No
3- Hire additional Auditors & Training	Target Date: 6/30/2009	Revised
4- Gradually begin performing the shops' QAQC audits including contractor audits	Target Date: 5/30/2009	Revised
5- Full transition - CMG Group performing all shops QAQC audits including contractor	Target Date: 8/30/2009	Revised
6- Progress report to ICC	Target Date: 6/30/2009	Revised

**Resources Needed:**  
 Internal  
 1) 6 Auditors Internal or External 2) Senior IT member to perform enhancements to QAQC Database  
 External

Cost/Benefit Analysis		Est. Costs		Est. Benefits	
	One-Time	Annual		One-Time	Annual
O&M		\$657,968 (includes overhead / loading)	O&M		\$402,850 (includes overhead / loading)
Capital			Capital		

Comments: Hire 4 engineers and 2 senior engineers. General Supvs workload decrease - Peoples Gas wide estimated 2.5 General Supv potential hires not needed thus shift

**Deliverable Items:**  
 1) Record of audits performed by CMG Staff - hardcopy and electronic form in QAQC database 2) Expanded CMG staff 3) Enhanced QAQC database

**Questions for Liberty Staff:**

**Comments:**  
 Peoples Gas proposed plan and response to Liberty Recommendation V-8 ( as described above ) also addresses Liberty Recommendation IV-7 "Contractor audits of contractor crews as required in QAQC Program Manual."

#: V-9

Updated

1/23/2008

**Recommendation:**

Provide the means for, and require that, General Supervisors spend more time in the field on job sites with their crews.

Peoples Gas should identify means of increasing the effectiveness of their General Supervisors, eliminating tasks that keep them away for their primary activities, and increasing their on-site supervision of crews. Peoples Gas' Operations Field Support should continue to develop its planning applications function to perform routine planning for code compliance activities to relieve General Supervisors from performing tasks and activities in the office. In addition, Peoples Gas may need to hire more General Supervisors. Peoples Gas should develop a written plan for meeting this recommendation within three months of the date of this report. The plan should include schedules and specific goals for General Supervisor on-site time.

**Owner:**

Rich Echoles / Dawn Neely

**Owner's Email:**

[DPNeely@integrysgroup.com](mailto:DPNeely@integrysgroup.com)

**Required Timeline, per Liberty Audit:**

THREE MONTHS

**PGL's Position:**

Accept/Reject/Counter?

Counter

**If Counter, Please Explain:**

Peoples Gas should be allowed to impliment the WAM system and staff the centralized planning group before making a decision on this recommendation. Consideration must also be given to acceptance of related recommendations within this audit.

**Support Accept/Reject Position:**

Peoples Gas is in the process of implementing a new Work and Asset Management System (WAM) to replace some of the legacy systems in use today. The system will handle many of the office tasks currently performed by General Supervisors such as permit management. The system will also eliminate the need to review time and work tickets. It is expected that the system will in itself, increase the effectiveness of the General Supervisors; both in the field and in the office.

In conjunction with the WAM system, the centralized planning group will take over some of the daily tasks currently performed by general supervisors. These tasks include planning and assigning regulatory work, assigning locate requests and assigning valve inspections.

In addition to the above, the Compliance Monitoring Group (CMG) will take over responsibility for performing all field QA/QC audits. This will free up time for supervisors to spend more time directly supervising crews.

**Action Items to Complete:**

(MM/DD/YYYY)

1-	CMG to perform all shop QA/QC audits	Target Date:	8/30/2009	No
2-	Centralized Planning to manage safety surveys	Target Date:	2/1/2009	No
3-	Centralized Planning to manage valve inspections	Target Date:	2/1/2009	Yes
4-		Target Date:		
5-		Target Date:		

**Resources Needed:**

Internal

External

**Cost/Benefit Analysis**

		Est. Costs		Est. Benefits	
		One-Time	Annual	One-Time	Annual
O&M					
Capital					

Comments:

**Deliverable Items:**

**Questions for Liberty Staff:**

Comments:

#: V-10

Updated 11/14/2008

**Recommendation:**

Upgrade the legacy computer systems as planned.

Peoples Gas operates and maintains a number of "legacy" computer programs and databases in which it stores information about its system components. The systems are cumbersome to access and use to evaluate data from which Peoples Gas makes system management decisions. Peoples Gas should replace these legacy systems, convert its data and implement a new modern system that allows it to evaluate its system components and streamline its scheduling of inspections and manage its work. Peoples Gas plans to complete this change by March 2009. It should report on any delays or revised schedules for implementation as they occur.

**Owner:**

John Just / Reply by T. Lenart

**Owner's Email:**

[tlenart@peoplesgasdelivery.com](mailto:tlenart@peoplesgasdelivery.com)

**Required Timeline, per Liberty Audit:**

SEVEN MONTHS

**PGL's Position:**

Accept/Reject/Counter?

ACCEPT

**If Counter, Please Explain:**

**Support Accept/Reject Position:**

The Work and Asset Management system (WAM) has been approved and is currently in construction. The current estimate is for this new system to be available by 9/30/2009. Liberty will be provided updates on any schedule revisions.

**Action Items to Complete:**

		(MM/DD/YYYY)	Complete?
1-	WAM Buisness process mapping table of contents provided for review (See Attached)	11/20/2008	Yes
2-	Provide updated project schedule	2/20/2009	No
3-	-	-	-
4-	-	-	-
5-	-	-	-

**Resources Needed:**

Internal

External

**Cost/Benefit Analysis**

		Est. Costs				Est. Benefits	
		One-Time	Annual			One-Time	Annual
O&M				O&M			
Capital				Capital			

Comments:

**Deliverable Items:**

**Questions for Liberty Staff:**

Comments:

#: V-11

UPDATED: 2/23/2009

**Recommendation:**

Develop a structured process for long term planning.

Peoples Gas should develop its long-term plans for the distribution system in a more formal, structured process. This includes having plans with greater specificity, and developing and updating long-term objectives, intermediate goals, and recommendations. Peoples Gas should begin to develop this process within three months of the date of this report, and complete its implementation within one year of the date of this report.

**Owner:**

Mark Kinzle

**Owner's Email:**

MWKinzle@inteqrsvsroup.com

**Required Timeline. per Liberty Audit:**

DEVELOPMENT: THREE MONTHS. COMPLETION: ONE YEAR

**PGL's Position:**

Accept/Reject/Counter?

ACCEPT

**If Counter, Please Explain:****Support Accept/Reject Position:**

Peoples Gas will provide a formal structured process for long term planning. The documentation of the process will be completed within 2 months and the implementation within 6 months. The process will include long terms goals and vision as well as a process for the evaluation of projects towards those goals.

**Action Items to Complete:**

	(MM/DD/YYYY)	Complete?
1- Development and documentation of the process.	Target Date: 12/1/2008	Yes
2- Completion of the long term analysis and design.	Target Date: 3/31/2009	Revised
3- Implementation of process.	Target Date: 4/1/2009	No
4- -	Target Date: -	-
5- -	Target Date: -	-

**Resources Needed:**

Internal

Gas Support engineer, ITS support

External

**Cost/Benefit Analysis**

		Est. Costs				Est. Benefits	
		One-Time	Annual			One-Time	Annual
O&M	\$82,292			O&M			
Capital				Capital			

Comments: 960 hours of engineering time - Gas System Support, 80 hours ITS resource.

**Deliverable Items:**

Documentation of the process and procedures used for long term planning.

**Questions for Liberty Staff:****Comments:**

#: V-12

UPDATED: 10/01

**Recommendation:**

Develop and implement a procedure for up-rating low-pressure mains.

Peoples Gas' up-rating process (i.e., converting low-pressure mains to a new and higher operating pressure) needs to be more formal and include ensuring that system components are within the limits of the pressure up-rating and are designed for and capable of withstanding the new higher operating pressure. Peoples Gas should implement the new procedure within six months of the date of this report.

**Owner:**

Fred Ulanday

**Owner's Email:**

[ASUlanday@integrysgroup.com](mailto:ASUlanday@integrysgroup.com)

**Required Timeline, per Liberty Audit:**

SIX MONTHS

**PGL's Position:**

Accept/Reject/Counter?

ACCEPT

**If Counter, Please Explain:**

**Support Accept/Reject Position:**

TTS will revise Main Work Order 7.100 of the Distribution Manual to address uprating mains in accordance with Pipe Safety Regulations Part 192.557, Subpart K (Uprating: Steel pipelines to a pressure that will produce a hoop stress less than 30% SMYS; plastic, cast iron, and ductile iron pipelines)

**Action Items to Complete:**

		(MM/DD/YYYY)	Complete?
1-	Process design and revision of Main Work Order 7.100	Target Date: 2/28/2009	No
2-	Communication and training of district shop operations	Target Date: 3/31/2009	No
3-	-	Target Date: -	-
4-	-	Target Date: -	-
5-	-	Target Date: -	-

**Resources Needed:**

Internal

External

**Cost/Benefit Analysis**

	Est. Costs			Est. Benefits	
	One-Time	Annual		One-Time	Annual
O&M			O&M		
Capital			Capital		

Comments:

**Deliverable Items:**

Revised Main Work Order 7.100; Documentation of communication and training to/for gas operations management.

**Questions for Liberty Staff:**

Comments:

#: V-13

UPDATED: 10/01

**Recommendation:**

Review industry committee participation.

Peoples Gas should review the industry committees in which it participates to ensure that it assigns the appropriate people, and that it does not assign individuals to too many committees, resulting in ineffective participation and negating the company's goals of its participation. Peoples Gas should complete this review within six months of the date of this report and make any appropriate changes within one year of the date of this report.

**Owner:**

Ed Doerk / Reply by T. Lenart

**Owner's Email:**

[tlenart@peoplesgasdelivery.com](mailto:tlenart@peoplesgasdelivery.com)

**Required Timeline, per Liberty Audit:**

COMPLETE REVIEW: SIX MONTHS. MAKE CHANGES: ONE YEAR

**PGL's Position:**

Accept/Reject/Counter?

ACCEPT

**If Counter, Please Explain:**

**Support Accept/Reject Position:**

A review of AGA committee assignments will be reviewed. Assignments of individuals to multiple committees will be verified to ensure that logic exists for multiple assignments and adequate time is allocated for effective participation. Even more effective participation will be addressed with all assignees with emphasis on attendance.

**Action Items to Complete:**

	(MM/DD/YYYY)	Complete?
1- Complete review of AGA committee assignments, and make any required adjustments.	3/31/2009	No
2- -	-	-
3- -	-	-
4- -	-	-
5- -	-	-

**Resources Needed:**

Internal

External

**Cost/Benefit Analysis**

	Est. Costs			Est. Benefits	
	One-Time	Annual		One-Time	Annual
O&M			O&M		
Capital			Capital		

Comments:

**Deliverable Items:**

**Questions for Liberty Staff:**

**Comments:**

#: V-14

UPDATED: 10/01

**Recommendation:**

Establish the combined Integrys successor to the Peoples Materials Standards Committee (MSC).

An ICC Order required the MSC to fill an identified need. Peoples Gas dissolved the MSC in anticipation of a joint Integrys committee. That new committee has not yet been established, although the merger took place in early 2007. Peoples Gas should establish a committee to oversee the transition involving procedures and materials procurement processes resulting from the merger and to comply with the ICC order. Peoples Gas should implement this recommendation within three months of the date of this report.

**Owner:**

Fred Ulanday

**Owner's Email:**

[ASUlanday@integrysgroup.com](mailto:ASUlanday@integrysgroup.com)

**Required Timeline, per Liberty Audit:**

THREE MONTHS

**PGL's Position:**

Accept/Reject/Counter?

ACCEPT

**If Counter, Please Explain:**

**Support Accept/Reject Position:**

The successor Integrys committee for oversight of procedures and materials procurement processes for all Integrys gas distribution utilities was chartered on November 13, 2007, called the Gas Standards and Component Materials (GSCM) Committee. The GSCM Committee Charter is attached. Its organizational meetings occurred in December, 2007 and January, 2008. Committee activity subsequently commenced. Two quarterly meetings have also occurred (May and July, 2008). This Recommendation has been implemented.

**Action Items to Complete:**

		(MM/DD/YYYY)	Complete?
1-	This task is completed.	Target Date: -	Yes
2-	-	Target Date: -	-
3-	-	Target Date: -	-
4-	-	Target Date: -	-
5-	-	Target Date: -	-

**Resources Needed:**

Internal

External

**Cost/Benefit Analysis**

	Est. Costs			Est. Benefits	
	One-Time	Annual		One-Time	Annual
O&M			O&M		
Capital			Capital		

**Comments:**

**Deliverable Items:**

Provide minutes of meetings and charter for Q1 Review by Liberty.

**Questions for Liberty Staff:**

**Comments:**

This recommendation has been completed.

#: VI-1

UPDATED: 11/6/2008

**Recommendation:**

Implement a modern and effective performance measures program.

Peoples Gas should significantly improve the completeness, presentation, and dissemination of performance reports. Peoples Gas should retain expert assistance in the development of the program. Peoples Gas should replace the obsolete systems that inhibit a useful performance measures system. Within six months of the date of this report, Peoples Gas should have a documented plan for improving its performance measures program. At minimum, this plan should provide a complete definition of performance metrics, a schedule for their implementation, and the commissioning of a computer-system study.

**Owner:**

Ted Lenart

**Owner's Email:**

tilenart@peoplesgasdelivery.com

**Required Timeline, per Liberty Audit:**

SIX MONTHS

**PGL's Position:**

Accept/Reject/Counter?

ACCEPT

**If Counter, Please Explain:**

**Support Accept/Reject Position:**

Huron Consulting has been contracted to develop the plan for identifying and reporting on performance metrics. This plan will include identifying industry best practices regarding definition of performance metrics. The plan will evaluate the most effective way to gather the required information and identify appropriate delivery mechanisms, including a schedule for implementation. At this time Peoples Gas is not prepared to commit to commissioning a computer study since the data will be available from existing computer system and it is not clear that a new system will be required.

**Action Items to Complete:**

		(MM/DD/YYYY)	Complete?
1- Complete defining performance metrics and provide list to Liberty	Target Date:	3/31/2009	No
2- Complete implementation plan for performance reporting metrics	Target Date:	6/30/2009	No
3- -	Target Date:	-	-
4- -	Target Date:	-	-
5- -	Target Date:	-	-

**Resources Needed:**

Internal

External

**Cost/Benefit Analysis**

		Est. Costs				Est. Benefits	
		One-Time	Annual			One-Time	Annual
O&M	Unknown			O&M			
Capital	Unknown			Capital			

Comments:

**Deliverable Items:**

**Questions for Liberty Staff:**

**Comments:**