

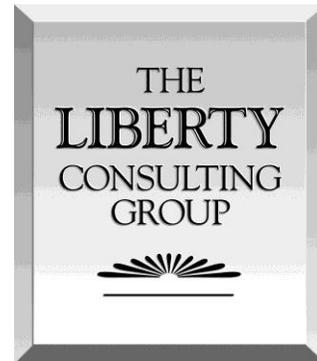
**Phase Two of an Investigation of
Peoples Gas Light and Coke Company's
Accelerated Main Replacement Program**

**Recommendation Implementation Monitoring
Fifth Quarterly Report**

**Presented to:
The Illinois Commerce Commission**



**Presented by:
The Liberty Consulting Group**



**279 North Zinns Mill Road, Suite H
Lebanon, PA 17042-9576
(717) 270-4500 (voice)
admin@libertyconsultinggroup.com**

November 14, 2016

Table of Contents

Summary	1
Implementation Plan Monitoring Approach	1
Summary of Expected Fourth Quarter 2016 Monitoring Activities	3
Summary of Plan Activities and Status Detailed in This Quarter’s Report	4
D.4 – Detailed Resource Plan	6
F.5 – Risk Metrics	11
H.2 – Developing an Integrated Project Schedule for Every New Project	14
H.3 – Developing Resource-loaded Schedule	18
H.4 – Performing Schedule Variance Analysis	21
H.5 – Developing Quantity-based Schedules	28
J.1 – Implementation of Two-Pronged Scope Control Process	32
M.5 – Enhanced Management Oversight of Contract Change Process	37
M.6 – Enhanced Analysis of Results of Managing Contract Changes	41
M.7 – Requirement of Contractors to Provide Key Data	46
N.3 – Consistency of AMRP Information to the Board of Directors	50
N.5 – Inclusion of Long-term Goals in AMRP Metrics	56
O.2 – Framework for Performance Improvement	60
O.3 –Program Performance Standards	64
O.4 – Framework for Performance Improvement	68
O.5 – Roles of Project Controls Professionals	73
T.1 – Improve Communication & Coordination with the City	77
T.2 – CDOT Permit Reporting	80
U.4 –Complaints Group Resourcing and Performance Monitoring	84
U.5 – Customer Satisfaction with AMRP	89
Appendix A: Recommendation Status	A-1

Summary

- Work continued through the third quarter of 2016, which represents the fifth of the eight quarters established for implementation monitoring of the recommendations set forth in Liberty’s May 5, 2015, Phase 1 report regarding the Accelerated Main Replacement Program (“AMRP”). The original 95 recommendations now number 88, after we eliminated or consolidated a few with others (as reported earlier). Work this quarter concentrated on successful close out of recommendation implementation.
- Implementation progress continues - the fifth monitoring quarter has produced 16 recommendations for which the Company completed implementation.
- This report addresses closeout activities for 20 recommendations, 16 of which we consider fully implemented.
- Of the 88 recommendations, we consider 46, somewhat more than half, as accepted/closed.
- We deleted one recommendation this quarter (V.1). Management has advised that ICC monitoring and reporting requirements are a part of the focus of the stakeholder process currently underway. Management expects specific direction from the ICC in this regard. If so, such direction will moot the recommendation.
- Below we describe the details underlying work on those recommendations whose implementation activities this quarter’s report addresses. We address closure on 16 and discuss the status of another 4 that remain “in progress”.
- We divide the 20 recommendations proposed for closure into three categories: “Accepted,” “Partially Rejected,” and “Rejected.” We consider 16 as closable on the basis of full implementation, either in full accord with the original recommendation and approved implementation plans, or on terms equally or more likely to optimize AMRP performance.
- We will continue to conduct monitoring activities on 14 of these 16, in order to examine: (a) whether execution continues as planned, and (b) whether certain additional needs (generally narrow and administrative) were met.
- Whether those gaps prove material to optimizing AMRP performance must fall to some other test, given that our scope does not include continuing “auditing” of program performance. The following discussions of each of those recommendations provide an explanation of the gaps, and our basis for continuing to believe that our recommended approach, from our perspective today, remains more likely to optimize AMRP performance.

Implementation Plan Monitoring Approach

Liberty’s May 5, 2015, Final Report on the Phase One Investigation addressed the findings, conclusions, and recommendations resulting from an essentially year-long investigation of management and execution of the AMRP. That report set forth 95 recommendations for improving AMRP planning and execution. The May 5, 2015, report ended Phase 1 of a two-phased project. Liberty’s defined scope for Phase 2 is to conduct a structured, two-year program of monitoring the effectiveness of Company implementation of the final report’s recommendations.

The Phase 2 monitoring work led to the elimination of five recommendations (Numbers D.5, F.4, K.4, L.6, and V.1):

- D.5 recommended analysis to examine meter installation productivity; it was mooted by a fundamental process change that renders analysis of past productivity irrelevant with respect to future work effectiveness.
- F.4 served as an alternative to Recommendation F.3, whose acceptance by the Company mooted the eliminated recommendation.
- K.4 will by definition be successfully addressed upon implementation of the remaining Chapter K recommendations; it therefore does not require separate monitoring.
- L.6 called for pursuit of recommendations made in connection with Liberty’s interim report; we determined that the other recommendations of the final report already encompass all of the interim report recommendations of lasting impact.
- Management has advised that ICC monitoring and reporting requirements are a part of the focus of the stakeholder process currently underway. Management expects specific direction from the ICC in this regard. Accordingly, this Recommendation V.1 can be deleted

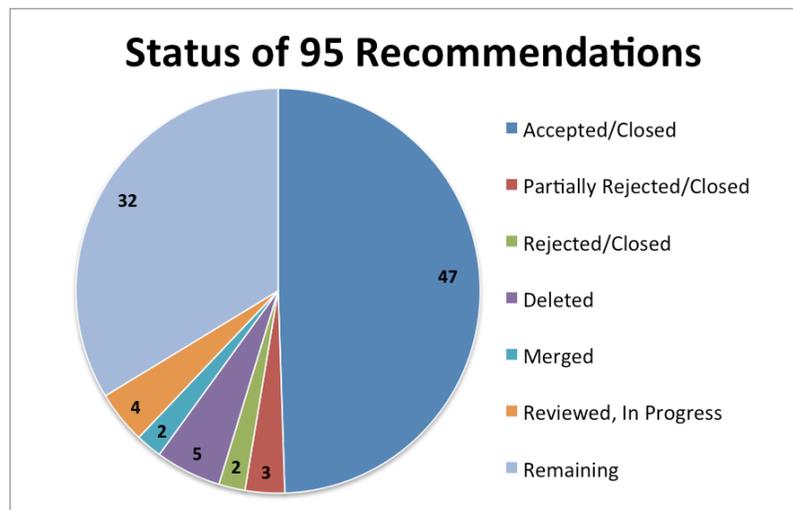
Two other recommendations merged into others, in order to reflect the ability to address them through a common implementation plan. Of the revised number of monitorable recommendations (88 after elimination and combination), all had what Liberty and the Company agreed were effective implementation plans at the end of the last quarter.

Implementation has yet to reach a pace that matches expectations for final closeout consistent within the two-year implementation monitoring duration. Three calendar quarters remain and PGL has suggested that five or more will not be implemented by the time Liberty completes its Phase II monitoring.

This report describes the details of monitoring efforts on 20 of the 88 recommendations whose implementation we are tracking, 16 of which we believe should be closed out. We have determined that 4 recommendations PGL recommended for closure this quarter are not sufficiently complete or adequate to accept closure at this time. They consist of those shown as “In-Progress” in this report. The Company has made improvements that we consider material, but has not agreed to certain aspects of the recommendation that we considered important in our May 5, 2015 report.

To date, PGL and Liberty have closed out (accepted, partially rejected, or rejected) 52 of the original 95 recommendations. Another seven of the 95 have been deleted or merged, leaving 36 to be implemented -- four “in progress” and 32 that have not yet been offered by PGL for close-out.

This report concludes with a summary of the status of plans the recommendations from the May 5, 2015, report.



Summary of Expected Fourth Quarter 2016 Monitoring Activities

1. Liberty will return to work on constructing an overall plan for monitoring work across the remaining three quarters of monitoring work.
2. Liberty will prepare and then execute detailed plans for specific monitoring activities (e.g., data requests, interviews, site visits) associated with those recommendations scheduled to undergo key implementation steps during the fourth calendar quarter of 2016.
3. Liberty will prepare a report of monitoring activities and open plan closure at the end of the quarter.

Liberty continues to proceed with monitoring work on the basis that the stakeholder process has identified no action items required of Liberty at this time. As noted, however, we recognize that revision of fundamental AMRP parameters has significant potential for affecting the course that implementation of certain recommendations should take.

Summary of Plan Activities and Status Detailed in This Quarter’s Report

Rec. #	Recommendation	Previous Status	Current Status
D.4	Peoples Gas should prepare a soundly derived, detailed resource plan and provide for full coordination between the annual budget and resulting resource requirements	Plan Accepted	In Progress
F.5	Peoples Gas should determine on a system, segment and neighborhood basis the level of acceptable risk and metrics that will support appropriate adjustments in replacement rates	Plan Accepted	Accepted/ Closed
H.2	Peoples Gas should develop a complete project schedule for every new project, and it should address all aspects of the work required, from engineering to construction and through completion.	Plan Accepted	Accepted/ Closed
H.3	Peoples Gas should resource-load schedules to address all physical work resources (including internal workforce and contractors) and construction inspectors.	Plan Accepted	Accepted/ Closed
H.4	Peoples Gas should regularly perform schedule variance analyses to identify recurring or systemic issues, and plan corrective actions.	Plan Accepted	Accepted/ Closed
H.5	Peoples Gas should complete promptly its efforts to ensure that construction schedules become quantity-based for the internal workforce and for contractors	Plan Accepted	Accepted/ Closed
J.1	AMRP management should promptly design and implement a two-pronged scope control process: (a) at the program level, and (b) at the individual project level	Plan Accepted	In Progress
M.5	Peoples Gas should apply a program of enhanced management oversight to the contract change process	Plan Accepted	Accepted/ Closed
M.6	The Project Management Office should implement enhanced analysis of its results in managing contract changes	Plan Accepted	Accepted/ Closed
M.7	The Supply Chain and Project Management organizations should require contractors to provide key data that supports their plans and bids	Plan Accepted	Accepted/ Closed
N.3	Peoples Gas should substantially enhance the completeness and accuracy of AMRP performance information provided to the boards of directors, and ensure its consistency with information used by AMRP program management and provided to the small executive group with designated responsibility for program oversight	Plan Accepted	Accepted/ Closed
N.5	Peoples Gas should upgrade AMRP performance metrics to include annual or cumulative progress versus the long-term (20-year) plan goals and metrics for the executive oversight group and the boards	Plan Accepted	In Progress

O.2	Management should establish a framework for performance improvement based on analysis of project performance and corrective actions	Plan Accepted	Accepted/ Closed
O.3	In the course of its current improvement initiatives, Peoples Gas should redefine and reestablish its standards for program performance	Plan Accepted	Accepted/ Closed
O.4	Program Management Organization should establish a culture and a regular, defined, comprehensive program that provides insightful analysis of program performance, and should acquire the capability to perform such analyses	Plan Accepted	Accepted/ Closed
O.5	Peoples Gas should expand the role of its project controls professionals to allow for more analysis of project progress and performance and, in turn, support of management by facilitating corrective action	Plan Accepted	Accepted/ Closed
T.1	Peoples Gas needs to continue to focus on improving communications and relationships with the City and with its Department of Transportation, but must recognize that it will take improved permitting and work performance to create and sustain relationships at the level needed to optimize AMRP performance	Plan Accepted	Accepted/ Closed
T.2	Peoples Gas should expand the scope of AMRP project schedules to incorporate permitting requirements	Plan Accepted	Accepted/ Closed
U.4	Peoples Gas should adequately resource the AMRP Complaints Handling Group, and should monitor complaint resolution performance and the root causes of customer complaints, for the purpose of identifying improvement opportunities	Plan Accepted	In Progress
U.5	Peoples Gas should measure on a regular basis: (a) customer satisfaction with AMRP, and (b) the effectiveness of AMRP Communications and Customer Service	Plan Accepted	Accepted/ Closed
V.1	Peoples Gas should work promptly to identify the AMRP reporting changes that it proposed to implement near term, and tailor them to meet the reporting cycles and content this chapter describes as appropriate for supporting the monitoring needs of the Illinois Commerce Commission	Deleted	Deleted

The next report sections address the results of the third calendar quarter’s monitoring efforts on these recommendations. The discussions begin with a statement of the recommendation made in our May 5, 2015, report and the conclusions underlying it.

D.4 – Detailed Resource Plan

Peoples Gas should prepare a soundly derived, detailed resource plan and provide for full coordination between the annual budget and resulting resource requirements.

The lack of a resource plan precludes effective spending plans and subsequent analysis of program schedules and performance. The gap was evidenced in 2014 when management sought contractor action to mitigate schedule delays, but did not have a sound basis to judge original contractor staffing plans and subsequent contractor staffing increases. The same problem existed with Peoples Gas engineering and crafts.

Underlying Conclusions

D.1 Current AMRP plans do not provide for sufficient program definition and the program has not been supported with sufficient assembly and analysis of performance information.

The AMRP should operate under a comprehensive and credible long-term plan that addresses all major components in a complete and consistent fashion. Liberty found that the AMRP does not have an integrated, up-to-date, sufficiently comprehensive program plan. Such a plan should clearly state critical assumptions. Liberty found critical planning assumptions neither well defined nor well documented. The kind of plan that the AMRP requires includes the provision of suitable contingencies for growth and other uncertainties. Liberty found no provision for contingencies or allowances to address the change and growth that are all but inevitable for a program of the AMRP's scope, complexity, and duration. Program management does not address these matters on a long-term basis, but confines contingency use to annual planning, and even in that case, largely limited to contractor work.

The program management organization does not have detailed information about progress to date. Performance data is not consistent, fully reliable, or well-suited to the analysis that a program such as the AMRP requires. Past performance does not undergo rigorous and continual analysis to ensure optimization. Liberty has not found detailed, meaningful analysis of performance for the purpose of identifying improvement opportunities. Neither did Liberty's field work disclose substantial documentation of corrective actions taken to address performance issues. Scope change typically has a significant impact on programs like the AMRP. There should exist clear documentation of the degree to which scope evolution has affected the program. Scope growth, particularly in terms of expanding project requirements has had an impact on the AMRP. That impact is not well-documented or quantified. The absence of data produces an inability of program management and senior leadership to isolate AMRP activities and costs from those of other work commonly managed with AMRP projects.

D.7 Peoples Gas has not mustered sufficient resources to support the AMRP in the last two years, as evidenced by significant under-spending versus the annual budget.

The AMRP lacks the resource plan it needs for planning and performance assessment purposes. Absent the type of assessments such a plan would support, Liberty concluded that recurring under-spending against annual estimates and performance at the back-end of the process (e.g., meters and retirements) provide primary indicators that Peoples Gas has not applied sufficient resources to sustain progress at targeted levels.

At the present time, the only visible resource reporting comes in the form of a homogenized chart of all resources presented under the title of “jobs created” in the monthly progress report. We have never seen project resources described or presented in such a manner. Such reporting may serve other purposes, but it serves no evident program management purpose, particularly given its status as the only resource metric provided. Further, the AMRP has no plan against which one can compare actual staffing. Absent such comparisons, management cannot effectively determine whether the data presented is bad or good in terms of optimizing program performance.

PGL Action Plan Steps

Item #	Task	Status
1	Define organizational structure and fill key positions	Complete
2	Transition from Jacobs Engineering to internal and alternative third party resources	Complete
3	Assess current internal and third party AMRP resources	Complete
4	Evaluate long term staffing needs of the program	Complete
5	Establish Workforce Planning Department	Complete
6	Develop a Resource Plan and model	In Progress

Management has taken the initial steps to prepare an AMRP resource plan by conducting several resource analyses of the areas of work force constraints. The first analysis completed was an overall work and productivity analysis. The second analysis completed was a workload analysis of the field workforce requirements of the AMRP for 2015 and 2016. Both of these work force analyses allowed PGL to model various options to solve for short term staffing needs for field resources, as well as to provide the data input for an integrated resource planning model.

Management has taken the steps noted below as part of the analysis and study activity to prepare the AMRP resource plan:

- **Assess Current Internal and Third Party AMRP Resources:** Prior to the acquisition, Management had been in the process of hiring a Workforce Planning Manager to help perform the analysis and strategy for the staffing of the project and PGL. Beginning from the closing day of the acquisition, the new PGL leadership conducted sessions with all employees to introduce the team, review the corporate culture and the overarching goals of the organization, and interact with employees at the main office and shop locations. Subsequently, the Vice President of Construction began a process of participating in weekly construction meetings, reviewing organizational structure and job responsibilities of internal and external resources, reviewing construction reports, and evaluating alternatives and opportunities for improvement. Consistent with Liberty’s recommendations and WEC Energy Group Inc.’s historical practice of in-house management of capital projects, PGL determined that it should end the services arrangement with Jacobs Engineering and move management of the AMRP in-house.
- **Define Organizational Structure and Recruit Key Positions:** The new Construction organization, of which AMRP will be a part going forward, is headed by the Vice President

Construction with four directors reporting: Director Engineering, Director Construction, Project Director, and Director Contracting.

- Transition to in-house Program Management: PGL management received input on individual Jacobs' team member performances, and prioritized their value to the project. PGL made direct offers of employment to select high value Jacobs' employees. Management determined that having certain Jacobs' employees (e.g., inspectors) continue to support AMRP through other contractors would be appropriate. Management advertised remaining positions to which internal and external candidates can apply.
- Evaluate long term staffing needs of the program: PGL management will evaluate the current state of resources post in-house management transition and model the long term (three to five-year) workforce needs of the program. The workforce model will include retirement impacts and retention rates. Peoples Gas will develop appropriate staffing plans based on these evaluations and model outputs.

The previous activities are preparatory, and support the following principal activity which directly addresses Liberty's recommendation:

- Develop a Resource Plan and Model: PGL will develop a resource planning model that takes into consideration PGL construction labor for the program. The plan and model are intended to serve as tools to provide strategic direction and recommendations based upon model outputs and analysis. Furthermore, the plan and model will help minimize the risk of under or over staffing of resources by assessing and balancing needs going forward.

Management expects periodic adjustments to the resource plan and model as well as adjustments to optimize organizational design. To this end, PGL will establish a workforce planning department as part of the organizational design.

Expected Post-Implementation Conditions and Factors

The development of an AMRP resource plan will further facilitate resource planning and performance assessment activities. The Company seeks to align actual work and resource scheduling with the plans/budget, and improve performance at the back-end of the process, which include meters and retirements, by optimizing resource allocations to sustain progress at targeted levels.

Summary of Liberty's Steps to Verify Implementation

On September 19, 2016, PGL met with Liberty to provide an implementation status. The AMRP Project Manager indicated that the Company is having a difficult time filling the position of the Manager of the Workforce Planning Department. Management was in search of a qualified resource expert nationally. Two separate candidates turned down offers. Management will continue to try to fill this position aggressively. Management also had problems filling the manager's assistant position.

Management has secured the service of PricewaterhouseCooper (PwC) to assist in developing tools for resource modeling under the direction of Peoples Gas. It should be completed in the fourth quarter. The model will be able to balance all forecast work against internal and external resources.

It will also incorporate factors that include workforce age, years of service, and retirements versus availability of new recruits.

The following are key deliverables for the development of the AMRP detailed resource plan:

- Organization Structure – Capital Program Delivery
- Resource Analysis & Workforce Constraints
- AMRP Internal & Third Party Resource Assessment
- AMRP Workforce Model & Resource Plan.

Management will deem this recommendation complete when deliverables and applicable program management procedures and organizational elements for workforce model and resource planning are approved and published, and all managers have been informed of their role in the process and management's expectations for their compliance.

Observed Conditions and Factors

Management considers Step No. 5, establishing a workforce planning department, as complete. Since the manager and assistant positions are still vacant, we must disagree. The fact that the Company is having difficulty filling the positions points to the reality that workforce planning is an important discipline, and is in demand. Taking the necessary time to select the right and qualified candidate to fill the position is still a prudent strategy.

Even though no details of the resource are currently available, during discussions with management personnel, it appears that all essential features, such as workload forecast, workforce availability, initial and refresher training, anticipated retirement, historical retention rates, have been considered. It is crucial that this model be developed in time to support the 2017 New Year.

Implementation Complete and Satisfactory?

Implementation is far from complete at this time.

Remaining Gaps, Needs

Vacant positions need to be filled. The resource model needs to be developed, tested and placed in operation. Resource Management Procedure needs to be developed and approved.

PGL Position

Management agrees that the recommendation is not ready for close-out this quarter (3Q16).

Future Liberty Verification Activities

Liberty will review the resource model and plan in the first quarter of 2017, if PGL completes its development, and places it in service in the fourth quarter. We will validate that all the essential features are designed appropriately to support short-term projects as well as long-term AMRP program.

General Observations

None.

F.5 – Risk Metrics

Peoples Gas should determine on system, segment, and neighborhood bases the level of acceptable risk and metrics that will support appropriate adjustments in replacement rates.

Peoples Gas needs to develop a set of forward-looking metrics that will predict changes in risk level with replacement. Doing so will allow it to adjust replacement rates to meet future increases and decreases in the risk level. Peoples Gas should determine an acceptable risk level for each segment and neighborhood, and use that level to design a plan and schedule of main replacements to reach it.

Peoples Gas has not determined an acceptable level of risk for the general public, its customers and individuals working on the gas system. This tolerable level of risk needs to be determined so that both main-replacement risk models can be operated to reach the desired level. The acceptable level will not be static, but will change year to year, based on the mains already replaced, the activity of the prior year, and the continuing aging of mains not yet replaced.

Underlying Conclusions

F.7 Peoples Gas does not employ a meaningful metric that can directly relate costs expended to risk mitigation accomplished; Liberty continues to work with the Company to determine one.

Liberty examined the potential for identifying a metric that could directly and simply address effectiveness in identifying: (a) the right mains and services to replace, and (b) cost-effectiveness of replacements in relation to that identification. Such a metric would measure cost-effectiveness in terms of success in risk mitigation produced. Peoples Gas does not use such a metric. The recommendation implementation monitoring process that will follow this report should include efforts to develop such a metric.

A primary difficulty in defining a meaningful metric arises from the time lag between installation of new mains and retirement of the mains being replaced. Lags approaching one year can occur. For example, before retiring the old main, Peoples Gas must move all customers to a new, higher-pressure main. Thus, delays in locating and installing a few - perhaps even one - new meters delays retirement. The accounting process also delays recording retirements already physically accomplished. Updating property and tax records produces discontinuity in measuring the effects of replacement work.

PGL Action Plan Steps

This recommendation now contains 5 tasks all of which should have been completed by the end of the third quarter of 2016.

Item #	Task	Due Date	Revised Date
1	Define metrics to be monitored		Complete
2	Documentation of the metrics		Complete
3	Approve and issue process procedure		Complete

4	Provide Risk Level and Metrics Procedures orientation and training to project personnel		Complete
5	Document completion of the recommendation implementation		Complete

Expected Post-Implementation Conditions and Factors

Peoples Gas should be replacing the highest risk mains and services and thus the overall risk factors should be reduced and improvements via reduction in leaks, incidents and other factors should occur.

Summary of Liberty’s Steps to Verify Implementation

Liberty worked with management to develop the proposed risk metrics. Management has slightly modified what Liberty proposed.

Observed Conditions and Factors

Liberty had previously suggested that the neighborhood risk model be modified, which management did, thus making changes in risk measurable as the new model takes effect. Changes in the model take several years to implement (due to the need to re-engineer the mains being replaced). The effects of a change in the model in one year will therefore not become apparent for at least two years. Checking and possibly modifying the risk model needs to remain an on-going process, because, as the highest risk mains are replaced, lower risk mains will remain and their conditions may change over time.

PGL established the Risk Level and Metrics procedures in September 2016. These metrics have been designed, and full implementation will occur at year-end when all 2016 data is in hand. Orientation and training has already begun.

Implementation Complete and Satisfactory?

Yes, this recommendation is a long-term recommendation and as such needs to be continually evaluated and checked. In the future, as more higher risk mains and services are replaced, there may need to be some modification of the risk metrics being measured. Management needs to continue to evaluate the current neighborhood model on a yearly basis and determine if there needs to be change in either risk metrics being measured or the model itself, to reduce risk as fast as possible.

Remaining Gaps, Needs

None.

PGL Position

PGL agrees with the closure of this recommendation.

Future Liberty Verification Activities

The Risk Level and Metrics Procedures of Step 4 have been designed. Full implementation will come when all 2016 data becomes available. We will confirm implementation at that point.

General Observations

Liberty and management have worked together to develop some acceptable metrics to determine if the current weighting and parameters being used to prioritize neighborhoods are maximizing risk reduction for the dollars spent. Below are the ‘new’ metrics that management will use to determine if the risk model needs further refining.

Metrics:

1. Company overall average leak rate (both replaced and to be replaced mains, LPP [leak prone pipe]) using current leaks
2. Company overall average leak rate using only LPP pipe and current leaks
3. Neighborhood average leak rate using only remaining LPP and current leaks
4. Normalized neighborhood historic average leak rate using leaks on LPP for the past two years, on a rolling basis (normalized for weather, incorporating all class two leaks except third party damage).

H.2 – Developing an Integrated Project Schedule for Every New Project

Peoples Gas should develop a complete project schedule for every new project, and it should address all aspects of the work required, from engineering to construction and through completion.

After four years, AMRP scheduling development has not matured at the pace required. Scheduling should address all major steps required to prepare a project for service. At a minimum, generic schedules should delineate, interrelate, and define the schedule requirements for: project selection, design, preliminary cost estimate preparation, contract bid and award, final cost estimate preparation, project authorization, City permit approval, permitting, material requisition, document control, work planning, field planning, construction scheduling, material delivery, gas main installation, services installation, gassing mains, meter and regulator installation, service cut-offs, restoration, inspection, and project close outs. Identifying and depicting all essential activities permits support groups to plan logically to ensure the availability of resources adequate to support projects on a timely basis.

Underlying Conclusions

H.2 Individual project schedules initially reflected only contractor work, but now include physical work performed by the internal workforce, and Peoples Gas is integrating engineering schedules into them.

Schedules should reflect the requirements of each work group required to support overall production targets. That has not been the case historically for the AMRP, which until recently, included schedules only for contractor work.

Project schedules normally begin with the engineering and design phase, and then integrate construction and completion work. The AMRP scheduling function begins in reverse, with the completion of contractor schedules for projects. AMRP scheduling then adds the back-end work activities of the Peoples Gas crews. Then, management develops engineering schedules for the projects, based on the construction schedules. Efforts underway now seek to provide for the development of engineering schedules first. The construction schedule can then be developed by adding to the Project Baseline Schedule (provided by the awarded contractor) the associated work activities performed by internal Peoples Gas personnel. This new approach will ensure a natural flow of scheduled project activities from inception to completion.

PGL Action Plan Steps

Item #	Task	Status
1	Integration into single 2015 logic model	Complete
2	Prepare scheduling process procedure	Complete
3	Approve and issue scheduling process	Complete
4	Provide schedule for use	Complete
5	Document and incorporate process into schedule procedure	In Progress

During the 2012 and 2013 construction years, the Program had in place two levels of schedule detail. The first level (an “integrated” schedule) was project-based, and included components at the phase level for Engineering, Permitting, and Construction, as well as a project level Closeout component. This schedule was intended as a monthly management reporting tool.

The second level of detail was for project “construction”, and incorporated the contractor’s street level construction schedules, along with shop provided information for PGL work activities, and start milestones for permit release to a range of blocks along a specific street. Management intended this schedule to serve as a weekly reporting tool to be used by the shops, and as the source of data for the first level monthly schedule.

Owing to a lack of input data, the engineering process, permitting process and closeout process components were removed from the “integrated” schedule for the 2014 construction year. Without these components, the 2014 “integrated” schedule was limited to summary activities, at the phase level, for construction. In 2014, the shop level “construction” schedule moved the start milestones that represent the initial release of permits from the street level to the individual block, and required the contractor’s construction details to be provided at the individual block. In addition, project management office shop schedulers were assigned to North and South shops. The changes have resulted in determining PGL crew sizes and functions, daily production rates for meter installations and retirements, and served as input to the contractor for activity durations at the time of schedule baseline preparation, and helped to provide progress updates weekly for PGL work activities.

The 2014 model formed the basis of the schedules in use by the Program at the time of Liberty’s Audit. Since the Liberty Audit in 2014, both the “integrated” and “construction” level schedules have been combined into a single project schedule (the “2015 logic model”) containing engineering, procurement, permitting, construction, and closeout components. This revised logic model was issued to the contractors for use on all projects initiated after July 1, 2015.

Since the beginning of 2016, PGL had undertaken a major effort to re-develop its scheduling process to manage AMRP scheduling master plan (Level 1), control schedule (Level 3), and detailed schedule (Level 5) more effectively. The team met with a consultant to discuss plans for the development and implementation of a cradle-to-grave scheduling process. Input was solicited from managers and personnel of all supporting groups of the Engineering, Pre-Construction and Construction phases. Scheduling methods were thoroughly considered, and established. Action steps to add and update Levels 1, 3 and 5 schedules were clearly delineated. Resource loading, variance analysis and reporting requirements were defined. All these details were documented in the Schedule Management Procedure, which was approved and issued as a draft on September 16, 2016.

Expected Post-Implementation Conditions and Factors

Project-level schedules will enhance management’s ability to identify, interrelate, and define the schedule requirements of all essential activities from project selection to close-out. The changes made will improve the project delivery teams’ planning process and ensure the availability of adequate resources to support the projects on a timely basis. This new schedule template will provide project status visibility across the lifecycle of these projects. Implementation of the 2015 logic model will benefit AMRP by providing timely and actionable information for planning and tracking throughout the life of a project, and for AMRP as a whole.

Summary of Liberty's Steps to Verify Implementation

In the June 9, 2016 meeting with Liberty, PGL distributed the following documents for status reporting and discussion:

- Scheduling Process and Procedure development and review meeting notes
- PGL Schedule Management Procedure - Working Draft
- Level 1 & 3 Schedule Template Draft for user feedback
- Level 1 & 3 Schedule Template Narrative

On August 31, 2016, PGL conducted an on-line Liberty Scheduling Workshop and provided the following “Cradle-to-Grave” materials for discussions:

- Level 1 & 3 Logic Model
- Example Level 1 & 3 Schedule – Beverly PH13
- Sample Activity Detail Description
- Example Level 3 Schedule – Beverly

On September 19, 2016, Liberty met with PGL to discuss actions taken and review implementation progress. Liberty reviewed the following close-out documents:

- Final draft of the PGL Scheduling Management Procedure, dated September 16, 2016
- Reconciliation Table – Comparison of the 22 activities in Liberty Recommendation and Logic Model Activities

Subsequent to this meeting, PGL provided the following two documents on September 21, 2016 for further review:

- Cost Estimating Procedure draft, dated August 25, 2016
- Scheduling Process Training Plan, dated September 6, 2016

PGL considers the following deliverable as closeout components:

- 2015 logic model schedules

PGL will deem this recommendation complete when (a) projects initiated after July 1, 2015 include a 2015 logic model schedule; (b) the procedures required for development of the 2015 logic model schedules are approved and published; and (c) all managers have been informed of their role in the process including management's expectations for their compliance.

Observed Conditions and Factors

The design of the Level 1 & 3 Logic Model is clear and comprehensive. The sample provided displays adequate details regarding the activities and milestones, as well as identifying key handoffs and notification points. The Level 1 & 3 Schedule Template Narrative further describes all the supporting tasks behind each schedule activity.

The Reconciliation Table compares the PGL Level 3 schedule activities to the 22 detailed activities recommended by Liberty. Only six activities are not identified specifically on the schedule, but we found them embedded in other scheduling activities. These six activities are preliminary cost

estimate preparation, final cost estimate preparation, project authorization, document control, material delivery, and inspection.

The Schedule Management Procedure is approved and in use. It requires that all future projects implement the new processes, including resource loading and variance analysis.

The Cost Estimating Procedure is approved and in use. Initial rough order of magnitude estimate and final engineering estimate will be prepared to support project authorization and bid preparation at the appropriate junctures of the project schedule.

The Scheduling Process Training Plan has also been developed to train Project Controls analysts, schedulers, project managers, and managers from Engineering, Contract Services, Construction, and Construction Planning. The training materials will cover scheduling process, schedule preparation, cost estimating, resource loading, quantity collection, variance analysis, reporting, and forecasting. This training is expected to be completed in the fourth quarter of 2016.

Liberty concurs that the above elements will ensure the AMRP scheduling functions operate effectively.

Implementation Complete and Satisfactory?

Yes. The enhanced Schedule Management Procedure is active. Integrated schedules are being produced for new projects. All associated personnel are scheduled to be formally trained. We therefore consider this recommendation closed.

Remaining Gaps, Needs

PGL needs to complete the scheduling process training for all the users and supporters of the AMRP project schedules.

PGL Position

The Company agrees that the recommendation has been implemented.

Future Liberty Verification Activities

During the second quarter of 2017, Liberty will review a list of projects initiated after July 1, 2015 to ensure they all utilize the logic model schedule. We will also validate sample project schedules for completeness and adherence.

General Observations

None.

H.3 – Developing Resource-loaded Schedule

Peoples Gas should resource-load schedules to address all physical work resources (including internal workforce and contractors) and construction inspectors.

The Company needs to complete promptly the effort currently underway to resource-load the schedules for the internal workforce. Peoples Gas should load the lump-sum and unit-cost contractor resources into the schedule as well. This enhancement will give construction management the visibility to gauge the sufficiency of contractor resources. At present, AMRP management must wait until production falls behind schedule to identify resource shortages. The change will also give Peoples Gas the ability to assess, for long-term resource planning purposes, the comparative productivity levels of contractors. This information will support the development of performance targets, and assist Peoples Gas in assessing the benefits of and planning for the use of internal workforces to perform some main and services installation work.

Underlying Conclusions

H.5 Peoples Gas resource-loads detailed schedules for the internal workforce, but not contractors, and not for other work groups whose efforts support AMRP field work.

Detailed work schedules should be resource-loaded. The Company’s effort to do so for the work that its employee crews perform has a sound basis. Peoples Gas, however, has not implemented it with full effectiveness. The Company faces significant competition between the AMRP and other needs met with internal resources. Liberty did not find sufficient efforts to assess the adequacy of internal resources to meet all requirements, including, but not limited to AMRP work. The Company’s history shows that the emergence of other urgent needs has diverted resources assigned to AMRP. Scheduling alone cannot solve that problem. However, proper and complete resource loading of AMRP work will permit a more informed understanding of the impacts of other work. Resource loading will also lay a foundation for considering the degree to which Peoples Gas should dedicate minimum levels of its resources to AMRP work.

Liberty also found construction inspection resource loading an area of concern. The Company has an appropriate target of one inspector per contract crew, but has yet to achieve it. More attention to the resource-loads of this inspection group will promote needed enhancement in efforts to oversee the quality and production of main and service installation work.

PGL Action Plan Steps

Item #	Task	Status
1	Project Operations Director to form schedules resource loading Task Lead	Complete
2	Define objectives and requirements for the schedules resource loading process	Complete
3	Design the process for resource loading	Complete
4	Approve and issue process	Complete
5	Produce Resource loaded schedule for use	In Progress

6	Incorporate resource loaded process into overall scheduling procedure	In Progress
---	---	-------------

PGL has taken initial steps to incorporate resource-loading into AMRP schedules. The current construction schedules are resource-loaded, not with person-hours, but in terms of crew production rates for contractor activities and PGL internal workforce activities. These production rates applied against total activity quantity form the basis for calculating activity durations in baselines and progress update schedules. All three of PGL’s district shops (North, Central, and South) provide shop specific production rates during baseline development. These rates are monitored during construction with the use of resource leveling of meter installations and retirements to better manage spikes for shop crew resources. Several factors routinely affect those spikes; *e.g.*, emergency maintenance, gas service turn-ons for winter season, and other top priority functions. The PGL design and engineering schedule, which includes schedules from outsourced engineering companies, is not currently based on resource-loaded values.

Since the beginning of 2016, PGL had undertaken a major effort to re-develop its scheduling process to manage the AMRP scheduling master plan (Level 1), control schedule (Level 3), and detailed schedule (Level 5) more effectively. The team met with a consultant to discuss plans for the development and implementation of a cradle-to-grave scheduling process. Input was solicited from managers and personnel of all supporting groups of the Engineering, Pre-Construction and Construction phases. Scheduling methods were thoroughly considered and established. Action steps to add and update Levels 1, 3 and 5 schedules were clearly delineated. Resource loading, variance analysis and reporting requirements were defined. All these details were documented in the Schedule Management Procedure, which was approved and issued as a draft on September 16, 2016.

A plan to study the feasibility of incorporating a resource-loading feature into the schedules for all the supporting groups was completed. It was determined that it is infeasible to load engineering and design resources. Durations are therefore derived from historical design experience based on the length of total main piping in the design. Data will be collected to validate the duration basis. The resource needs of the pre-construction groups are tied to milestones rather than activities. Hence, only the construction activities are resource-loaded with internal workforce and contractors at this time.

Expected Post-Implementation Conditions and Factors

The main benefit of using resource-loaded schedules is to provide PGL with the ability to maintain adequate internal staffing levels and the visibility to gauge the sufficiency of contractor resources to meet productivity and production requirements of the AMRP program. For future contractor selection, the historical productivity information can be used to compare performance of various contractors. For long-term resource planning purposes, in the event PGL needs to use internal resources to perform main and service replacement work, the contractor historical productivity information can be used as a performance target.

Summary of Liberty’s Steps to Verify Implementation

In the June 9, 2016 meeting with Liberty, PGL distributed the following documents for status reporting and discussion:

- Scheduling Process and Procedure development and review meeting notes
- PGL Schedule Management Procedure - Working Draft
- Level 1 & 3 Schedule Template Draft for user feedback
- Level 1 & 3 Schedule Template Narrative

On August 31, 2016, PGL conducted an on-line Liberty Scheduling Workshop and provided the following “Resource/Quantity Loaded Scheduling” materials for discussions:

- Example Quantity Installation Graphs
- Example Internal Meter Resource Graphs
- Study Plan Preparation
- Schedule Management Procedure Excerpt – Resource Loading

On September 19, 2016, Liberty met with PGL to discuss actions taken and review implementation progress. Liberty reviewed the following close-out documents:

- Final draft of the PGL Scheduling Management Procedure, dated September 16, 2016
- Resource Loading Study Plan – only construction activities will be resource-loaded

Subsequent to this meeting, PGL provided the following two documents on September 21, 2016 for further review:

- Cost Estimating Procedure draft, dated August 25, 2016
- Scheduling Process Training Plan, dated September 6, 2016

The following are key deliverables to begin resource loading project and program schedules:

- Study Plan for resource-loaded values and rates
- Study Plan for resource-loading of other activities (e.g., permitting)
- Evaluation of resource-loading capacity
- Schedules Policies & Procedures – Resource Loading requirements

PGL will deem this recommendation complete when (a) the Schedule Management procedure, which includes the applicable resource-loading requirements, is approved and published, and (b) all managers have been informed of their role in the process and management’s expectations for their compliance.

Observed Conditions and Factors

Internal and contractor resource-loaded schedules are in use. An internal meter resource graph for 2017 Planned Beverly Headcount chart has been generated based on the resource-loading information in the 2017 Beverly schedule. This information appears to be consistent and credible.

The Schedule Management Procedure is approved and in use, requiring all future projects to implement this process, including resource loading and variance analysis.

The Resource Loading Study Plan to analyze the Engineering, Pre-construction, and Construction functions based on various resource criteria was completed. It was odd that this in-depth study did not address the construction inspectors, which was identified as an issue specifically in this recommendation. During the Phase 1 Audit, Liberty identified a shortage of inspectors. PGL was unable to meet the appropriate target of one inspector per contractor crew. When this issue was raised in the quarterly review meeting, PGL explained that the inspector title was evolving into the title of field coordinator. The AMRP project manager believes that presently PGL has sufficient field coordinators and they are being assigned to the contractor crews, but the current scheduling system does not have the capability to resource-load the field coordinators.

The Scheduling Process Training Plan has also been developed to train Project Controls analysts, schedulers, project managers, and managers from Engineering, Contract Services, Construction, and Construction Planning. The training materials will cover scheduling process, schedule preparation, cost estimating, resource loading, quantity collection, variance analysis, reporting, and forecasting. This training is expected to be completed in the fourth quarter of 2016.

Liberty concurs that the above elements will ensure the AMRP resource-loading function will operate effectively.

Implementation Complete and Satisfactory?

Yes, the enhanced Schedule Management Procedure is active. Internal and contractor resources are being loaded into the schedule for new projects. All associated personnel are scheduled to be formally trained. We therefore consider this recommendation closed.

Remaining Gaps, Needs

The inspectors or field coordinators play a crucial role in ensuring all the contractors deliver in a timely fashion and with good quality. A shortage of this resource could become the cause of more change orders or schedule delays. PGL needs to devise an alternative way to monitor this resource, if the scheduling system could not accommodate the required loading.

PGL Position

The Company agrees that the recommendation has been implemented.

Future Liberty Verification Activities

During the first quarter of 2017, Liberty will review how the field coordinator resource group will be managed. We will also validate through sample projects that internal and contractor resources are fully loaded in the project schedules.

General Observations

None.

H.4 – Performing Schedule Variance Analysis

Peoples Gas should regularly perform schedule variance analyses to identify recurring or systemic issues, and plan corrective actions.

In 2014 alone, 108 out of 137 phases of projects experienced delay. This experience dramatizes the need for a timely and effective source of analysis of the causes that drive schedule delay. Peoples Gas needs to develop, and then regularly apply, the capability to determine what impact uncontrollable events (e.g., inclement weather) have had, and are likely to continue to have on schedule progress. It must then seek regularly to isolate the impacts of remaining influences. That isolation will enable management to determine which are subject to full or partial control, what changes it will take to mitigate their impacts, and the costs of and benefits to be gained from taking mitigating actions.

The Company needs to understand all the root causes that underlie schedule delays. It also needs to meet the challenge of gaining that understanding with the recognition that what appears uncontrollable at first can often be affected after full explorations of causation. Regular, ongoing analysis of schedule delay provides the basis for gaining that understanding and for planning and executing effective corrective actions. The permit problem with the City of Chicago offers an example. Schedule delays have caused deterioration of relationships with the City. Lack of permits, expired permits, and failure to perform restoration when and as required by the City caused a large number of permit violations.

Underlying Conclusions

H.6 The AMRP has not used focused analyses of the AMRP schedule delays experienced to date, and has not demonstrated a pattern of aggressive action to address such delays.

Project activities experience delay for many reasons, some controllable and some uncontrollable. Construction management, which manages work daily in the field, discusses sources of delay in weekly progress meetings. Some of the problems encountered (e.g., permit issues and securing property owner access permission), while repetitive, do not lend themselves to correction by crews. Liberty found no consistent effort to analyze the root causes of recurring problems and to recommend solutions to mitigate them.

PGL Action Plan Steps

Item #	Task	Status
1	Define objectives and requirements for the Schedule Analysis process	Complete
2	Prepare Schedule Analysis process	Complete
3	Approve and issue Schedule Analysis process	Complete
4	Provide Schedule with Variance Analysis	In Progress
5	Document and incorporate process into schedule procedure	In Progress

In the Recommendation Implementation Plan, PGL described the following schedule variance analyses performed that ended up with good results:

- (A) In 2014, AMRP management implemented tools necessary to measure and track construction schedules against target baseline schedules on a weekly basis, and report this information in the PGL Monthly Report. Through these tools, AMRP has been able to

identify recurring issues that cause delays, pre-construction and during construction. Factors outside PGL and its contractor's control, have also been identified as sources of schedule slippage.

(B) In conjunction with tracking and reporting schedule variances, the following issues had been identified:

- Schedule Enforcement – AMRP management has provisions for tracking Construction Finish Variance and instructions for implementation of a construction recovery plan with contractors.
- Recurring or Systemic Issues – Several factors that affect “on target” project completion were identified. Many of those factors are beyond the contractor's control and some are beyond PGL's control. External factors such as difficult to reach customers to schedule appointments for needed work and coordination with external agencies and third party utilities influence schedule performance. PGL continues to work with all parties involved to achieve better schedule performance.

(C) PGL had taken the following steps to address identified schedule slippage problems and better monitor project schedule performance and conduct schedule variance analysis.

- Program Plan – A high level 5-year program plan has been developed in Primavera P6 and NetPoint for projecting neighborhood project planning and budgeting using production rates and cost loading.
- Integrated Project Schedule – A revised logic model was developed and issued to the contractors for use on all 2015 projects initiated after July 1, 2015. This integrated schedule, containing Engineering, Procurement, Permitting, Construction, and Closeout components, is being implemented in the second half of 2015 for the 2015 Design / 2016 Construction Year projects. This will provide a “cradle to grave” project status for 2016 construction projects.
- Restoration Management - Contractors have taken steps to improve the restoration management process with less reliance on subcontractors that require large areas of available work. PGL has likewise organized a restoration management team specifically focused on restoration punch lists and completion oversight.
- Contractor Performance Metrics (Construction) – The 2015 Schedule Basis, a component of the Contract General Specifications, requires the contractor to utilize performance metrics for the Contractor Monthly Status Meeting, wherein all projects in progress are evaluated. These metrics include comparison of current production rates to planned rates, schedule performance index, and recovery plan metrics. The Project Management Office (PMO) utilizes performance metrics in evaluating production performance for mains and services installation quantities on a weekly basis and it is reported in the PGL Monthly Report.
- Identifying Problematic Trends – The PGL Capital Construction – Monthly Schedule Update Report has been revised to summarize and include key issues, which widely impact the schedules of projects within the Program. This listing is intended to provide management with actionable items that can benefit overall schedule performance.

- Construction Recovery Plan – The 2015 Schedule Basis, a component of the Contract General Specifications, requires a Recovery Plan if a Phase Completion Date reaches or exceeds 5 work days of negative variance. The plan is outlined and tracked in the weekly schedule update narrative and is primarily based on expanded work hours (with Chicago Department of Transportation permit approval), additional crews, or additional concurrent blocks as means of regaining lost time. PGL is in the process of developing the project management structure to which these recovery plans will be delivered.

Since the beginning of 2016, PGL has undertaken a major effort to re-develop its scheduling process to manage the AMRP scheduling master plan (Level 1), control schedule (Level 3), and detailed schedule (Level 5) more effectively. The team met with a consultant to discuss plans for the development and implementation of a cradle-to-grave scheduling process. Input was solicited from managers and personnel of all supporting groups of the Engineering, Pre-Construction and Construction phases. Action steps to add and update Levels 1, 3 and 5 schedules were clearly delineated. Resource loading, variance analysis and reporting requirements were defined. All these details were documented in the Schedule Management Procedure, which was approved and issued as a draft on September 16, 2016.

Expected Post-Implementation Conditions and Factors

The main benefit of analyzing schedule variance is to enable management to take a more aggressive role in mitigating schedule delays in the future. As PGL performs regular schedule variance analysis, all team members will be encouraged to identify the true root causes of the recurring issues, and quite often, they are the ones who are in a position to offer effective solutions to avoid cost and schedule impacts under comparable circumstances in the future.

Summary of Liberty’s Steps to Verify Implementation

In the June 9, 2016 meeting with Liberty, PGL distributed the following documents for status reporting and discussion:

- Scheduling Process and Procedure development and review meeting notes
- PGL Schedule Management Procedure - Working Draft
- Level 1 & 3 Schedule Template Draft for user feedback
- Level 1 & 3 Schedule Template Narrative

On August 31, 2016, PGL conducted an on-line Liberty Scheduling Workshop and provided the following “Schedule Variance & Corrective Action” materials for discussions:

- Schedule Management Procedure Excerpt – Variance Analysis
- Monthly Report Management Observations Samples

On September 19, 2016, Liberty met with PGL to discuss actions taken and review implementation progress. Liberty reviewed the following close-out documents:

- Final draft of the PGL Scheduling Management Procedure, dated September 16, 2016

Subsequent to this meeting, PGL provided the following two documents on September 21, 2016 for further review:

- Cost Estimating Procedure draft, dated August 25, 2016
- Scheduling Process Training Plan, dated September 6, 2016

The schedule variance analysis process will be defined in a procedure that will form a part of the Project Execution Plan. PGL will deem this recommendation complete when (a) the Schedule Management Procedure is approved and published, and (b) all managers have been informed of their role in the process and management's expectations for their compliance.

Observed Conditions and Factors

The Schedule Management Procedure is approved and in use, requiring all future projects to implement this process, including resource loading and variance analysis.

The Scheduling Process Training Plan has also been developed to train Project Controls analysts, schedulers, project managers, and managers from Engineering, Contract Services, Construction, and Construction Planning. The training materials will cover scheduling process, schedule preparation, cost estimating, resource loading, quantity collection, variance analysis, reporting, and forecasting. This training is expected to be completed in the fourth quarter of 2016.

Liberty believes that the above elements will provide the fundamental information for the AMRP scheduling variance analysis functions. However, based on the Monthly Report provided during the on-line workshop, Liberty was informed that the "Management Observations" page is a sample of current schedule variance analysis. The three major observations are (paraphrased below):

- For main installations, one project totaling almost 2 miles of main has been pushed back until 2017, and several projects have been deferred to later in the year and 2017, contributing to another 2.5 miles of unfavorable variance.
- For another project, there is a reduced scope from what was originally planned due to further engineering progression. Additional projects that are slotted for construction during the rest of the year will help bridge the gap on the negative variance.
- For neighborhood service installations, the unfavorable variance is partially driven by one project. Another project has not started construction yet. The majority of the unfavorable variance is related to approximately 400 services for a project that was completed ahead of schedule last year.

In one neighborhood, 11.9 miles of retirement is planned for completion by mid-August; 33 miles of main retirement is currently progressing in another neighborhood with completion in early 4th quarter. By year end, an additional 17.1 miles of main are scheduled for retirement in Beverly which will close the gap on the negative variance.

The focus seems be on advancing or backfilling jobs in order to balance out the positive or negative schedule variances for the year. These are not the kinds of schedule variance analyses that Liberty recommended.

Implementation Complete and Satisfactory?

Management made a number of improvements that resulted in the schedule variance analyses, as described in the Recommendation Implementation Plan (refer to the section after the PGL Action Plan Steps Table). During the Phase 1 Management Audit, the schedule variance analysis documents provided to Liberty were what was documented in the Capital Monthly Status Report issued by PMO. The contents largely focused on which job got delayed (creating a negative variance), and which job could be moved up to offset that unfavorable variance. The Management Observations provided in the on-line workshop on August 31, 2016 seemed to be a continuation of that approach, which is not what Liberty recommended regarding the provision of insightful analysis.

PGL provided a long list of past achievements resulting from dealing with schedule delay problems, and also completed all the deliverables outlined in the Implementation Plan. We have concerns about the sufficiency of the variance analysis' capability to fully meet the intent of this recommendation. We made the notion of "insightful analysis" a central point in the audit and in subsequent implementation planning. This insight element transforms mere numbers-centered reporting into management information that can identify issues and generate solutions. Liberty has found in many other places that the term "analysis" in this context is not widely understood, and not many organizations are able to define a fully robust program and to develop the requisite skills to implement such a program. We have been encouraged by progress in this regard at PGL, but as seen in the currently evaluated implementation plans, we have also seen setbacks and shortcomings as well.

Given the difficulty in this endeavor, patience is required. We do not expect such programs to get traction overnight. Skills must be developed. Supporting systems must be put in place. And managers must be trained in how to use these new capabilities. We are satisfied with the overall progress the Company has made and we expect that such progress will likely accelerate and improve further in the months ahead.

The effectiveness of schedule performance, in the form of variance analysis results from how one performs insightful analysis. Management is moving in the right direction, and understands the concepts. But it takes time to develop the processes, skills, and capabilities. It has placed into effect a plan for the application and use of variance analysis and we are confident of its eventual success. We have specifically identified the objectives that will help guide and focus the efforts to appropriate variance analysis.

Please note that these comments also apply to Recommendation O.5 (discussed below).

Remaining Gaps, Needs

PGL needs to perform schedule variance analysis with the following objectives:

- To identify recurring or systemic issues
- To understand the root causes that underlie the schedule delays
- To recognize what factors are controllable and can be influenced
- To recommend corrective or mitigating solutions
- To document all findings and corrective actions taken

- To enable management to take more aggressive action to address such delays

PGL Position

The Company agrees that the recommendation has been implemented.

Future Liberty Verification Activities

Given the need for a “maturing” process, it was not appropriate to hold open the recommendation on the basis that changes have yet to reach complete effectiveness. The path to “insightful analysis” will take time and we are confident that it will ultimately prove successful. We will continue to address progress with management in monitoring work to come. We will use those efforts to verify that management continues to be committed and to show suitable progress in enhancing a disciplined schedule variance analysis capability. During the second quarter of 2017, Liberty will review samples of schedule variance analysis. We will also seek to validate that the analyses address generic issues, and serve to mitigate schedule delays.

General Observations

None.

H.5 – Developing Quantity-based Schedules

Peoples Gas should complete promptly its efforts to ensure that construction schedules become quantity-based for the internal workforce and for contractors.

This recommendation may prove largely to be a function of resolving the logistics problems that four contractors now have in providing quantity-based schedules. At any rate, Peoples Gas needs to ensure that the effort to develop such schedules comes to fruition as soon as possible.

Underlying Conclusions

H.3 AMRP schedules have not been quantity driven, although efforts underway seek to make them so.

Schedules should contain sufficient detail to define the expected contribution to total estimated quantities to be installed, using clear production targets for each replacement project or group of such projects. The AMRP, however, has only recently begun to develop quantity-driven schedules that will begin to meet this need.

All in-house and contractor crews should remain aware of the production expectations underlying their work activities. Quantity-driven scheduling, now under development, will bring this awareness a step closer to achievement. The effort remains underway. Four contractors must solve logistical issues in moving to such scheduling. AMRP management expects resolution of the problems in time to support schedule development and monitoring during 2015. Completing the transition to quantity-driven scheduling will also give Peoples Gas a single source of reporting for quantities installed. Management has not had this tool so far.

PGL Action Plan Steps

Item #	Task	Status
1	Project Director to form Construction Schedule implementation team	Complete
2	Define objectives and requirements for the Construction Schedule process & procedures	Complete
3	Prepare Construction Schedule process	Complete
4	Approve Construction Schedule process	Complete
5	Provide Schedule	In Progress
6	Document & incorporate process into scheduling procedure	In Progress

Construction schedules should be quantity loaded for all resources that have an impact on the schedule. Prior to the Liberty Audit, not all the contractors had added quantities to their schedules. In some cases, quantity reporting was being performed in a separate Excel database.

The contractor schedules continue to be quantity driven in terms of applied crew production rates for both contractor work activities and PGL internal workforce activities. Since the audit, management has applied these production rates against total activity quantity, producing the basis for calculating activity durations in baselines and progress update schedules. All three PGL shops

(North, Central, South) provide shop specific production rates during baseline development. These rates are monitored during construction with the use of resource leveling of meter installation to better manage spikes for shop crew resources, which are routinely impacted by emergency maintenance demand, gas service turn-ons for winter season, and other top priority functions.

Since the beginning of 2016, PGL has undertaken a major effort to re-develop its scheduling process to manage the AMRP scheduling master plan (Level 1), control schedule (Level 3), and detailed schedule (Level 5) more effectively. The team met with a consultant to discuss plans for the development and implementation of a cradle-to-grave scheduling process. Input was solicited from managers and personnel of all supporting groups of the Engineering, Pre-Construction and Construction phases. Action steps to add and update Levels 1, 3 and 5 schedules were clearly delineated. Resource loading, variance analysis and reporting requirements were defined. All these details were documented in the Schedule Management Procedure, which was approved and issued as a draft on September 16, 2016.

Expected Post-Implementation Conditions and Factors

With the new Scheduling Management Procedure in place, quantity is required for the resource-loading function. This requirement will provide PGL with a single source of planned and actual quantity reporting. Keeping the internal workforce and contractors mindful of quantity and unit production rate increases the awareness of production and performance expectations, and in turn, promotes the cost sensitive culture desired.

Summary of Liberty's Steps to Verify Implementation

On the June 9, 2016 meeting with Liberty, PGL distributed the following documents for status reporting and discussion:

- Scheduling Process and Procedure development and review meeting notes
- PGL Schedule Management Procedure - Working Draft
- Level 1 & 3 Schedule Template Draft for user feedback
- Level 1 & 3 Schedule Template Narrative
- Contractor Level 5 Template Schedule – Working Draft

On August 31, 2016, PGL conducted an on-line Liberty Scheduling Workshop and provided the following “Resource/Quantity Loaded Scheduling” materials for discussions:

- Example Quantity Installation Graphs
- Example Internal Meter Resource Graphs
- Study Plan Preparation
- Schedule Management Procedure Excerpt – Resource Loading

On September 19, 2016, Liberty met with PGL to discuss actions taken and review implementation progress. Liberty reviewed the following close-out documents:

- Final draft of the PGL Scheduling Management Procedure, dated September 16, 2016

Subsequent to this meeting, PGL provided the following two documents on September 21, 2016 for further review:

- Cost Estimating Procedure draft, dated August 25, 2016
- Scheduling Process Training Plan, dated September 6, 2016

The construction schedule requirements will be defined in processes and procedures that will be a part of the Project Execution Plan. PGL will deem this recommendation complete when (a) the Schedule Management Procedure is approved and published, and (b) all managers and project personnel have been informed of their role in the process and management's expectations for their compliance.

Observed Conditions and Factors

Implementation of this recommendation will provide PGL the ability to report data directly in terms of the AMRP performance metrics. During the August 31, 2016 on-line workshop, PGL showed the kinds of quantity information, namely, miles of main replaced, services replaced, meters installed, and miles of main retired, that could be made available from the Scheduling System. Management continues to use such graphs to monitor progress and performance on an annual basis. Some consideration of project-to-date status would be helpful.

A sample of Contractor Level 5 Template Schedule was made available in the June 8 meeting to demonstrate that quantities can only be entered at the most detailed level (Level 5), which PGL is now doing for all new projects.

The Schedule Management Procedure is approved and in use, requiring all future projects to implement this process, including resource loading and variance analysis.

The Scheduling Process Training Plan has also been developed to train Project Controls analysts, schedulers, project managers, and managers from Engineering, Contract Services, Construction, and Construction Planning. The training materials will cover scheduling process, schedule preparation, cost estimating, resource loading, quantity collection, variance analysis, reporting, and forecasting. This training is expected to be completed in the fourth quarter of 2016.

Liberty concurs that the above elements will ensure the AMRP quantity loading function operates effectively.

Implementation Complete and Satisfactory?

Yes, quantities are being loaded into the schedule of the unit pricing contracts for all new projects. The enhanced Schedule Management Procedure is active. It is not reasonable to expect more at this time and we therefore consider this recommendation closed.

Remaining Gaps, Needs

PGL needs to include some performance metrics on a project-to-date basis, in addition to the annual view.

PGL Position

The Company agrees that the recommendation has been implemented.

Future Liberty Verification Activities

During the first quarter of 2017, Liberty will review sample projects to confirm quantities are loaded in the measurable activities in the project schedule.

General Observations

None.

J.1 – Implementation of Two-Pronged Scope Control Process

Peoples Gas AMRP management should promptly design and implement a two-pronged scope control process: (a) at the program level, and (b) at the individual project level.

Scope control processes should contain, at a minimum, the following features:

- A baseline definition of scope: The program master plan should frame this process, supported by associated documents such as estimates and schedules. The baseline scope serves as a control foundation only if well documented. The documentation must define underlying assumptions completely and include them in the plan.
- A process for prompt identification of proposed changes: “Chapter K: Cost Estimating” proposes a cost trend report. Those proposing or discovering potential changes air them promptly. Immediate publication of proposed changes does not wait for details, cost estimates, or other, detailed supporting information. The process places a priority on prompt identification, so that management, if it chooses, can intervene before significant time passes, and options diminish.
- Technical analysis of proposed changes: Effective control requires an objective evaluation of proposed changes. Proposed changes often come in proposals by organizations with a high level of technical expertise. Proposals through an authoritative voice can tend to cause others to take them as “given.” Providing for technical analysis by a third party of commensurate stature supports sound analysis and alternative identification, which enables best-informed decision-making.
- Cost and schedule impact of proposed changes: Cost engineering personnel must evaluate changes for cost and schedule impact, and report them to management. Sponsoring organizations often underestimate these impacts. They either lack the ability to estimate them, or do not have awareness of the full implications that proposed changes may have for the project involved. Full and correct identification of the impact may lead to withdrawal of a proposed change. Even if a change occurs, management should understand impacts fully before allowing a change to proceed.
- Documentation of management’s decision-making process: Scope changes often serve as a principal driver of project cost increases. Management should demonstrate prudent handling of such changes. Making a full and complete record of management’s actions when learning of the proposed change and of management’s considerations in approving the change supports such demonstration.

Underlying Conclusions

J.1 The AMRP has not operated to date under an effective scope control program.

Liberty found concerns with AMRP project-level scope control on two levels. First, the focus on contracts obscures management visibility with respect to changes originated through other means. For example, changes made in engineering often require incorporation into bid documents. Contract change controls will not identify them. Second, the time delay between a change and its evolution into the contract change process eliminates the possibility of analysis and mitigation. A program like the AMRP requires a formal set of processes for the control of scope at the program and at the individual project levels. Scope control processes should focus on the early identification

of potential changes, structured evaluation of the need for them, determination of their schedule impacts, and alternatives for addressing the needs underlying them. A proper hierarchy of required approval levels should exist.

The AMRP lacks these scope control attributes, instead maintaining that control of contractor change requests is sufficient. The narrow approach that AMRP management has taken does not comport with program needs or with Liberty’s experience in the industry.

Liberty found no scope control processes at the overall program level. Some scope control processes do exist at the project level, but Liberty did not find them sufficient. The AMRP does seek to control scope at the project level, but only when changes directly affect a field contract. Other project-related changes (those not associated with an already-executed contract) do not face scope control processes. Also, by definition, changes associated with an already-executed contract may not come to management’s attention until after options for addressing them are substantially restricted, if not gone entirely.

At the program level, scope changes may have been included and partially documented in cost estimate updates. Liberty, however, found no indication that they underwent analysis and approval processes.

PGL Action Plan Steps

Item #	Task	Due Date
1a	Internal review of current contract terms	Complete
1b	Project Director to form Scope Control Task Lead	Complete
2	Define objectives and requirements for the Scope Control process and procedure	Complete
3	Design the Scope Control process and procedure	Complete
4	Prepare Scope Control process and procedure	Complete
5	Approve and issue Scope Control process and procedure	Complete
6	Provide orientation and training to project personnel on Scope Control process and procedure	In Progress
7	Document completion of the recommendation implementation	In Progress

The first step in implementing a scope control process is to identify clearly both the program and the project level scope. The new cost and schedule models developed by Burns & McDonnell (“B&M”) will form the long-term AMRP baseline (program). The project level scope will be developed and refined as neighborhoods are designed into phases. Both the project level and program level scope will feed into one another. As data and analysis become available, PGL must incorporate changes in project level scope into the overall program scope to identify trends or change initial assumptions. To establish the scope properly, management must identify all the potential cost driver groupings.

Consistent and prompt reporting of these groupings is essential for scope control. For example, at a project level, one of the cost driver groupings may be the main installation. Subgroupings that make up the main installation grouping could include, for example, the contractor cost, material cost, company labor, company vehicles, restoration, and permit costs. This approach enables proper tracking and reporting of all quantities and values. Once a deviation is identified, action can

be taken to rectify the problem. Once the project level process is established it can then be used to check against the program level scope and make recommendations and, ultimately, adjustments, as necessary.

The Change Management Procedure applies to all changes identified for individual projects, programs, and annual budgets. This procedure is currently under development and in an ongoing review process.

PGL has designated the Project Controls Manager as the Scope Control Task Lead.

Expected Post-Implementation Conditions and Factors

Scope control processes should focus on the early identification of potential changes, structured evaluation of the need for the changes, determination of their schedule impacts, and alternatives for addressing the underlying needs. A proper hierarchy of required approval levels should exist.

Summary of Liberty's Steps to Verify Implementation

On June 9, 2016, Liberty met with the PGL Project Management & Controls Project Director to discuss actions taken and review implementation progress. Liberty reviewed close-out documents provided by the Company, including:

- Change Management Procedure Draft

On June 30, 2016, Peoples Gas submitted the following documents for Liberty to review:

- Task Support Document
- Capital Change Management Procedure Draft

On September 19, Liberty met with PGL and reviewed the following documents:

- Program Memo – Change Management September 2016
- Construction Change Management Procedure draft, dated September 7, 2016
- Risk-Trend-Change Concept Exhibit
- Change Management Process Flow
- Change Process Examples
- Change Management Overview slides, dated September 7, 2016

Liberty commented that all the progress reflected in these documents was on the right track. However, that was only on the project level. This recommendation is intended to exercise scope control at the project and program level. PGL committed to send in another narrative by the end of the month.

Subsequent to this meeting, PGL submitted on September 29, 2016 a table to contrast the differences in change process steps between the project and program levels.

PGL considers the following as key deliverables to assist in developing a scope control management program:

- AMRP Schedule Model
- AMRP Cost Model
- Scope Control Plan (incorporated into the Project Execution Plan)

At this time, it is not possible to identify the other, specific deliverables that would represent completion of implementation. Some of the preliminary groundwork is completed, such as development of the cost and schedule model and closing gaps identified in the Project Controls Audit, but additional, dependent work will be required to complete the recommendation. The end state ultimately will have deliverables that will allow the Project Control department to confidently estimate, and track all the cost drivers on a specific project to develop a project scope and ensure budgets are managed and appropriate corrective action is taken in a timely manner.

Observed Conditions and Factors

The purpose of PGL’s original Change Management Procedure is to manage change requests. This procedure focuses more on how to monitor and manage changes after they occur instead of preventing the scope from expanding. PGL has not completed the scope control plan, a deliverable listed in the Recommendation Implementation Plan.

Liberty expressed this concern to Peoples Gas during the June 9 meeting. The Company committed to providing a scope control procedure to ensure it addressed the five essential components defined in the specific guidelines in the Liberty Audit Report; *i.e.*, the baseline definition of scope, the prompt identification of proposed change, technical analysis of the proposed change, the cost and schedule impacts of that change, and the documentation of management’s decision-making process related to that change.

The revised Construction Change Management Procedure reviewed on September 19, 2016 meeting shows major improvement. It covers crucial steps like identification, validation, analysis, control, and action. However, it only addresses scope control at the project level. This recommendation intends for PGL to exercise control of scope at both the project and program levels. In fact, it can be argued that the program level is likely to have a higher cost impact.

Implementation Complete and Satisfactory?

No, it is premature to close this recommendation, because PGL has not adequately addressed the scope control features at the program level. The scope and target end-date of the program are pending a ruling by the ICC.

Remaining Gaps, Needs

PGL needs to demonstrate how scope is going to be controlled at the program level, complete with concept description and procedures.

PGL Position

PGL believes that the recommendation is complete.

Future Liberty Verification Activities

Upon completion of this recommendation in the fourth quarter, Liberty plans to evaluate examples of successful scope control scenarios, complete with documentation of effective management decision-making in the second quarter of 2017.

General Observations

None.

M.5 – Enhanced Management Oversight of Contract Change Process

Peoples Gas should apply a program of enhanced management oversight to the contract change process.

With the enormous dollar value of changes at issue, it is essential that the Company control, monitor, audit, and subject to the closest of management scrutiny the contract change process.

Underlying Conclusions

M.6 Management oversight of contract change management is too narrow.

AMRP management approved change orders totaling \$145 million. Despite the magnitude of this amount, Liberty observed little in the way of reporting on the results of the management program. Management reports change order costs monthly, but does not address whether those amounts are good or bad, expected or unexpected.

PGL Action Plan Steps

Item #	Task	Due Date
1	Processes, procedures, guidelines and policies are initially reviewed	Complete
2	Initial audit plan is developed	Complete
3	Initial implementation of audit plan	7/30/2016
4	M.1 Recommendation implemented	Complete
5	Metrics established	Complete
6	Processes, procedures, guidelines and policies are updated or amended, formally reviewed and approved, as appropriate.	Complete
7	Development and implementation of a process improvement plan	Complete

To enhance the management oversight of contract changes, PGL has adopted the following approach:

- Management has reviewed current processes, guidelines, policies, and procedures for contracting by the Contract Services Organization.
- All Requests for Proposals (RFPs), agreements and Change Orders require the review and approval by the Director of Contracting.
- The VP of Construction also reviews all RFPs in accordance with the newly revised procedures and policies that are now in place.
- Agreements and Change Orders will follow revised approval procedure and policy.
- PGL will revise processes, guidelines, policies and procedures for contracting to ensure senior management involvement.

Management also plans to establish and implement an audit plan for company and contractor compliance and to develop metrics to measure success of processes, guidelines, policies, and procedures. Eventually, PGL will formulate process improvement plans based on data derived from audits.

The Company has documented the revised RFP and Bid Evaluation processes in the newly drafted procedures. In mid-2016, PGL formally reviewed, approved, and issued the new procedures to the newly staffed and trained Contract Services team.

The Company has essentially completed its effort to revise the contract compensation structures from lump sum to unit price or time and material (“T&M”) agreements. On T&M agreements, the Company establishes either a not-to-exceed value or a Target Price with sharing of savings and overruns. The Contract Services team will request that T&M rates include equipment billed hourly, daily, weekly and monthly and that labor rates be substantiated by the appropriate local agreement wage details.

PGL also designs contractor scorecards to measure key performance behaviors, including safety, quality, customer service, and supplier diversity spend and activities. A portion of the contractor’s fee will be at risk/reward (currently between two and three percent). The Contract Services Team will review terms and conditions currently in place for appropriateness before it awards work, and if needed, modify for the scope of work and schedule.

To ensure the Contract Service Team members follow the new procedures, PGL has developed an audit procedure, with periodic audits to ensure compliance. In early 2017, after PGL staffs the team, work will proceed and audits will be conducted. A process improvement team will be formed to ensure any enhancements or changes to the processes are captured, documented and presented to the Director of Contracting and Contracts Manager for review and consideration.

Expected Post-Implementation Conditions and Factors

Applying a program of enhanced management oversight to the change process will ensure consistency of contract management. It will improve the enforcement of contract requirements, terms, and deliverables with contractors and will improve company compliance. Improved management oversight of the contract change process will also improve the accountability of contractors, vendors, and company in matters pertaining to contract changes.

Summary of Liberty’s Steps to Verify Implementation

On June 8, 2016, Liberty met with PGL’s Contract Services to discuss actions taken and review implementation progress. Liberty reviewed the following closeout documents provided by the Company:

- Listing of Contract Services Policies, Procedures & Guidelines
- Screenshot of the Review Purchase Order Information
- Quick Reference Guide for Accounts Payable Workflow/Approval
- Draft Contract Group Internal Audit Procedure
- Audit of Policies and Procedure Spreadsheet
- Draft Scorecard
- Contract Services Policies, Procedures & Guidelines Matrix

While Liberty found the PGL approach sufficient, recommendation closeout documents were not fully developed, and PGL’s proposed Change Order procedures and forms for contracting changes

have not been amended to reflect the established Delegation of Authority. This recommendation could not be closed in the second quarter.

On September 19, 2016, PGL gave an update of the Change Order Procedure. A final draft was submitted to Liberty on September 29, 2016.

This recommendation will be deemed to be complete by PGL when:

- Implementation of recommendation M.1 is complete.
- New or updated, as appropriate, processes, procedures, guidelines and polices are established and all personnel are trained, including Peoples Gas and contractors.
- Approval processes, guidelines and policy are revised to include senior management involvement and oversight.
- An audit program is established.
- The audit program is implemented.
- Metrics are established to measure safety, quality, customer satisfaction, and cost savings.
- A continual process improvement plan is established.

Observed Conditions and Factors

To date, PGL has re-examined and enhanced its processes. Senior management has reviewed and approved all nineteen new contractor services policies, procedures and guidelines. A major positive step was to successfully modify the contract compensation structures from lump sum to unit price or time and material agreements. This will allow the Project Controls professional to perform more insightful analyses for management oversight and intervention.

Another positive feature is the establishment of the audit procedures and plans, which will lead to the development of an improvement plan.

PGL reports that it has established the contractor metrics and scorecard to measure key performance behavior such as safety, quality, customer service, and supplier diversity. However, PGL provided only the Scorecard Cover Sheet for review. A Scorecard sample was included in Recommendation M.8, but Contract Change Management was not one of the items measured. As a result, Liberty cannot confirm that PGL will monitor and measure contract changes with the established Scorecard. PGL should provide a fully developed scorecard to demonstrate how it would measure contract changes.

Implementation Complete and Satisfactory?

Liberty found the approach of PGL sufficient, assuming that effective senior management oversight steps will eventually be incorporated into all the current policies and procedures. If that is the case, the implementation satisfies the intent of this recommendation.

Remaining Gaps, Needs

The implementation of the initial audit plan and process improvement plan, which PGL has developed, needs to be completed in 2017.

PGL should also incorporate the measurement of contract change criteria into the Contractor Performance Scorecard.

PGL Position

Peoples Gas suggests the recommendation is complete, except for the implementation of the initial audit plan and process improvement plan.

Future Liberty Verification Activities

During the first quarter of 2017, Liberty will review if the new contractor scorecard will measure criteria of contract changes. We will also validate the full implementation of the initial audit plan and process improvement plan, as feasible. In addition, we will verify that effective senior management oversight steps have been incorporated into all the current policies and procedures.

General Observations

None.

M.6 – Enhanced Analysis of Results of Managing Contract Changes

The Project Management Office should implement enhanced analysis of its results in managing contract changes.

It is not currently possible to draw performance conclusions on the contract change management program. The Project Management Office only publishes raw numbers; i.e., the total cost of contract changes. The resulting lack of context precludes substantial management understanding of how the program is performing. Analysis of the changes, their cause, their value versus expectations, and, most of all, analysis of whether they could or should have been avoided, provide the essential information that the Project Management Office is not currently providing.

Underlying Conclusions

M.7 The Company’s analysis of contract changes provides insufficient insight into the quality of performance.

Contract changes have proven very large, both on an absolute basis (\$145 million) and on a relative basis (152 percent). Management knows the general causes of such changes. Liberty did not find, however, analysis linking the changes to performance. Such analysis has importance in addressing potential areas of change, such as future contract terms and project estimates. Adding a routine level of suitable analysis is necessary to the effective management of contract change requests.

PGL Action Plan Steps

Item #	Task	Due Date
1	Tabulation of spend by major category of work	Complete
2	Cost Database installed and initial training completed	Complete
3	Initial analysis of Change Orders and determination of root causes	Complete
4	Initial review of analysis with supporting groups (engineering, construction, permitting, project management/project controls)	Complete
5	Tabulation of spend by each contractor	Complete
6	Estimating to work with Project Management to determine support for developing project budgets for change requests; software enhancement likely to support this effort	Complete
7	Review of Unifier, capabilities and interface with PeopleSoft	Complete
8	Discussions (follow up) with supporting groups (Construction, Engineering, and Project Management) on processes to reduce change orders	Complete
9	Develop strategies for process improvements	Complete
10	Begin to implement process changes	Complete
11	Approval of governance process established for Requisitions, Contracts, Field Orders, Change Orders, etc. for PeopleSoft and Unifier	Complete
12	Establish a process to track and trend change orders	Complete

The Contract Services (CS) team has reviewed and analyzed change orders from the past years. Several initiatives have begun the process to better manage contracts, inclusive of changes in scope. PGL has procured and installed the HCSS (Heavybid Coding Standalone System) software to build the database by populating it with labor and equipment rates and material prices. The

Company will develop associated crew loading capability by year-end. Thereafter, PGL will be able to project future costs and costs to complete.

The PGL Contract Services team has created a new 2016 Unit Price List for obtaining unit pricing from contractors on all phases of work. The data can be imported from the 2016 Unit Price List directly into the HCSS cost database.

In October 2015, process changes were implemented to address Change Order/Change Order Requests. These process changes were to require issuance of formal purchase order revisions before work could proceed, to allow for close scrutiny of scope and especially entitlement, and determine basis of compensation.

Change requests are no longer initiated by the Contractor. PGL has entirely eliminated the “Field Order” process, which was originally implemented to allow for quick, low cost changes to be approved. Currently any change request is conveyed to a Contract Services team member by either a PGL field individual or the Contractor. CS will review to understand the scope, determine if the contractor may be entitled to a change in scope, and then determine the pricing, whether it is Time & Material (T&M), unit price or if well defined, lump sum. The CS team member works closely with the Project Manager to review the scope and determine if the out of scope work can be accomplished within the project schedule and budget before proceeding with further approvals. Contract Services has also made substantial progress in clearing backlogged change requests and unresolved change requests. In support of this effort is the change in how contracts are issued and contractors are compensated. Many of the contracts are issued using unit pricing, with several issued under a T&M basis.

PGL has supported the process of managing change by promoting closer attention to understanding the entire scope of the project. It is being implemented by having the project engineer walk the site before the Request for Proposal is issued or prior to award; thorough bid review meetings with selected contractors and PGL (engineering, project management and construction) to ensure that the entire scope and any potential scope creep have been captured.

Change orders are still needed when scope is added that is above the minor fluctuations in actual installed vs. estimated quantities, or when new scope is necessary to accomplish planned work.

Expected Post-Implementation Conditions and Factors

PGL has been trying to build the analytical capability by developing the building blocks, such as change process improvement, quantity data management, and acquisition of required resources. Future management of contract changes should be more effective, as PGL will focus more on analysis of contract changes instead of just reporting quantity and costs of contract changes by contractors. The Contractor Service Director is accountable for the analysis of contract changes. A Project Controls analyst will assist in this effort, with input from Engineering and Construction personnel, as required. These analyses will try to link the changes to performance for future contract considerations. The analyses will focus not just on the magnitude of the changes, but also on the root causes, the assessment on cost and schedule impacts, and how the changes could be mitigated in future cases.

Summary of Liberty's Steps to Verify Implementation

On June 8, 2016, Liberty met with PGL's Project Management & Controls Project Director to discuss actions taken and review implementation progress. Liberty reviewed close-out documents provided by PGL, including:

- Change Order Summary Documents
- Contractor Spend Spreadsheets
- HCSS Screen Shot
- Unifier update emails
- Proposed Approval Matrix
- Change Order Draft Procedure
- Change Order Request Form
- Change Order Requisition Requirements

On September 19, 2016, PGL gave an update of the Change Order Process, identifying a major effort to shift all contracts to unit pricing, whenever feasible. Contractor Services also provided a contractor change order summary, comparing the significant drop in change orders from June to August 2016. Liberty requested a more detailed analysis of this data, and PGL had committed to provide a narrative.

Subsequent to this meeting, on September 29, 2016 the following documents were provided to Liberty:

- Final draft of the Change Order Procedure, dated October 1, 2016
- Summary Table of Scope Addition or Scope Change Order Counts by Work Types (Main, Services, Restoration, Retirement, Blanket, and Environmental)
- Chart representing the number of outstanding Change Order Requests (COR) by contractors and their cumulative value for the time period reported
- Analysis on the contractor Change Order Chart

This recommendation will be deemed to be complete by PGL when the following deliverables are complete:

- The Contract Services group, under the Construction Business Unit, is established, roles are defined and staffed.
- Revised processes are established to more closely understand basis of and entitlement for a change order, to include contract services and project management/project controls involvement at initiation. Contract Services interface with construction and project management is established.
- Revised process to consider a change in scope/change order is established, which includes a more streamlined process in Unifier and PeopleSoft. Process to include a revised governance procedure and policy.
- Process is established to track and trend change orders.
- Change Order trends reviewed periodically to understand basis and make any further changes in the commercial approach to contracting and project management.

- Procedure is approved, published, and all managers are informed about their role in the process and management's expectations regarding compliance.

Judging at the data collected, it is possible to put an average price on some of the recurring problems. Even though each case is different, having a database of historical averages will provide a solid base to negotiate a favorable cost change. It will also heighten everyone's sensitivity as to how each mistake costs projects and the program.

Observed Conditions and Factors

PGL has implemented process enhancements and policy changes that result in reduced contract changes, such as the change order process, the migration of lump sum contracts to Unit Pricing or T&M, the central control of change request processing, and the substantial reduction of backlogged change requests.

Presently, PGL analytical capability is still weak. Analyses provided are usually a publication of raw numbers by category or reasons. There are usually no perceptive narratives or messages that accompany these numbers.

For example, PGL Action Plan Step 6.3 was to perform an analysis of change orders since 2011 and determine the root causes. This activity was completed earlier this year. The end-product was a very comprehensive change order summary document. The document consists of a large matrix showing the categories of changes (line of lay changes, change in method of installation, underground conditions, etc.) and the underlying reasons under each category (trees, unknown existing utilities, tie-in issues, non-removable obstructions, etc.). This was tabulated for three types of changes to scope: (a) changes to original scope, (b) scope additions, and (c) scope deletion. This elaborate exercise was carried out very thoroughly. The analysis even summarized five highest value of change order category for each year since 2011. This analysis could have gone one step further instead of ending at the summary table.

- For Changes to Original Scope, the two major reasons for scope changes for the past four years were (a) Company Policy Change – Open Cut and (b) Removable and Non-Removable Obstructions. The Open-Cut Policy was introduced in 2011. What was the underlying reason that it was still causing so many changes in 2015? For the second reason, were those obstructions avoidable or simply an oversight?
- For Scope Additions, two large and common reasons were Missed Services (Engineering Issues) and Missed in Design. What were the reasons behind those misses? Could they be isolated or mitigated? Another major reason was Cut-off Restoration. What were the underlying circumstances and causes, and how they could have been mitigated in future cases?

Implementation Complete and Satisfactory?

Even though Liberty does not believe that the quality of PGL analyses on the contract changes is at a desirable level, the Company did achieve the deliverables, as laid out in the Implementation Plan. We believe that PGL will improve in its analytical capability on contract changes and result in more effective management of contractors. Liberty finds it appropriate to close this recommendation.

Remaining Gaps, Needs

Future analyses by PGL on contract changes should go beyond merely reporting the magnitude of raw numbers, but should be accompanied by a narrative that either confirms the appropriateness of the changes, or raises actionable issues that stimulate solutions or mitigations. PGL is in the process of documenting, upon contract closeout, lessons learned to inform future administration of contract changes. This enhancement will aid in efforts to improve analysis of raw data.

PGL Position

PGL suggests closure of this recommendation.

Future Liberty Verification Activities

During the first quarter of 2017, Liberty will review at least two samples of future contract change analysis. We will also validate that any solutions recommended in those two analyses are implemented.

General Observations

None.

M.7 – Requirement of Contractors to Provide Key Data

The Supply Chain and Project Management organizations should require contractors to provide key data that supports their plans and bids.

Required information should include:

- Clear descriptions of their assumptions
- Detailed resource plans (numbers and skills)
- Correlation of expenditures and labor hours to schedule
- Overtime and shiftwork plans
- Non-manual support (e.g., supervision, controls, administration, quality, safety) planned
- Any other data that the team believes will help them manage the contractor and future claims.

Underlying Conclusions

M.8 Peoples Gas does not require contractors to provide information necessary to facilitate contract management of performance and analysis of changes.

The view that risk lies with the contractor and that AMRP management therefore does not need contractor data misses an important opportunity. The magnitude of change orders makes clear that Peoples Gas bears substantial risk. Managing this risk makes it essential for the Company to understand the details behind bids. Tracking the same data later becomes essential for day-to-day management of AMRP projects. Sound project management monitors performance against a defined standard, which in this case is the contractor’s bid. It is not possible to manage performance without an understanding of the contractor’s initial assumptions. Management should be examining issues that include whether unit rates are consistent with the bid plan, whether staffing is consistent with the bid plan, whether quality goals are met, and whether adequate supervision is being provided. Addressing important management and oversight issues must become a critical Peoples Gas responsibility. Doing so requires a change from the view that such issues represent contractor responsibilities.

PGL Action Plan Steps

Item #	Task	Due Date
1	Begin discussions with internal groups on work sequence	Complete
2	Identify all projects awarded, not started for renegotiation	Complete
3	Draft processes for RFPs and Bid Evaluations	Complete
4	Meet with all firms and revise compensation structure for projects awarded	Complete
5	Review, finalize and train construction organization on new process for RFP and Bid Evaluations	Complete
6	Metrics established	Complete

PGL has discussed and documented a new construction sequence that will have a significant effect in managing changes in scope. The aim is to reduce changes, and to place greater emphasis on planning and managing each project, while completing the work within the schedule and permits. The sequence will require field walking each project, vetting the scope with preliminary design

drawings, vetting any changes after the documents have been reviewed by the Office of Underground Construction (OUC), and performing a final walk down including Construction, Engineering, Contract Services and Project Management representatives. These activities will generally take place prior to issuing RFPs for the work. Changes should then be limited to those underground obstructions that could not have been planned or uncovered during the initial reviews.

All projects awarded under the previous lump sum structures, but not started in the field, will be renegotiated to a unit price agreement.

Contract Services will issue all new RFPs either on a unit price or Time and Materials (T&M) basis. Prior to issuance of an RFP, a summary is provided to the Director of Contracting, which details the scope, bidder list, schedule, etc. for review and approval. The VP of Construction will review and approve all RFPs until Contract Services team procedures are approved and team members are trained. The new process is in use and current users have received training on an informal basis.

For projects under construction and with changes likely to occur, PGL has worked to incorporate all historical change orders into a single spreadsheet grouped by type of work and contractor (including years 2011 through 2015). While all work is a bit different, there are numerous similarities allowing for comparison of current unprocessed and future change requests.

Expected Post-Implementation Conditions and Factors

With the contractor's initial assumptions clearly defined, PGL now has a solid base to manage the contractor. Questionable change orders should be reduced by the more focused work scopes. Crew information will help construction management to identify from day one if the contractor has staffed the jobs adequately. Crew-hour assumptions, coupled with quantity information, will enable the Project Controls professional to analyze the contractor's progress and performance on a timely basis. Non-manual information will indicate if the contractor has provided adequate supervision, which will contribute to meeting quality and unit rate goals. With all this essential contractor data in place, PGL is armed to oversee the contractor's performance effectively and reduce the risks of AMRP cost overruns and schedule delays.

Summary of Liberty's Steps to Verify Implementation

On June 8, 2016, Liberty met with PGL Project Management & Controls Project Director to discuss actions taken and review implementation progress. Liberty reviewed the following close-out documents provided by the Company:

- Spreadsheet of Restructuring of Contracts Awarded / Not Started
- Evaluation of Proposals Procedure
- Bid Evaluation Template
- Bid Recommendation
- Non-award Letter
- Meeting Agendas
- Sample RFP Bid Letting Review letter.

In this meeting, Liberty indicated that PGL needed to address the six parameters listed in the original recommendations as a prime close-out condition. Those parameters were: a clear description of assumptions, detailed resource plans with numbers and skills, a correlation of expenditures and labor hours to schedule, overtime and shiftwork plans, non-manual support, and any other data that the team believes will help them manage the contractor and future claims. The materials distributed in this meeting failed to address those six parameters. PGL committed to submit a write-up to meet the requirement.

The update document submitted on June 29, 2016 listed six items, basically mentioning several on-going procedures and activities, but did not clearly identify whether those six key parameters covered the required information that the contractors needed to provide to support their plans and bids.

On September 19, 2016 meeting, PGL presented:

- A sample Request for Proposal for the Albany and Birchwood project
- Pages from the RFP Process and Instructions regarding Requirements for General Construction Support Personnel
- Contractor Bid Proposal Summary
- Contractor Proposal Assumptions Form

There were parameters from the original recommendations not covered. The Director of Contractor Services committed to follow up with a narrative to give a complete review on this recommendation.

Subsequent to the meeting, PGL provided a narrative on September 29, 2016 to Liberty, addressing the six major parameters, point by point, as laid out in the original recommendation.

PGL will deem this recommendation to be implemented when the following deliverables are completed:

- Processes for RFPs and Bid Evaluation are drafted, approved, and implemented, including training of all the construction organization team members.
- Any modifications are identified, developed, and implemented.
- Metrics are established to measure success of the new work processes and work sequence.
- The Construction organization is trained and equipped to oversee and monitor work accomplished, measure quantities installed or labor and equipment utilized.
- All awarded projects, not started, are renegotiated into unit rates or T&M compensation structures.

Observed Conditions and Factors

For this recommendation, it is essential to ensure the contractor provide key data that allows PGL to manage the contractor's resources and performance effectively. In the sample presented, the contractor did provide a clear description of assumptions, detailed resource plan, and assigned non-manual support positions. The Contractor Proposal Assumptions Form was designed to summarize the following key information:

- Expected Number of Crews, Crew Size, Daily Work Hours and Number of Work Weeks by Work Types
- Anticipated Support Staff and Percentage Involvement for Each Type of Personnel: Administrative, Safety Representatives, as-Built Drawings, GPS Data Collection, Documentation, and General Supervision
- List of General Assumptions reflected in the Proposed Unit Prices

The follow-up narrative adequately addresses all six parameters. Three major parameters are already covered above. The remaining three are explained as follows:

- PGL does not request correlation of expenditures and labor hours to schedule, as most of the labor agreements now are structured as Unit Price or Time & Material. Liberty found this approach acceptable.
- Overtime or shiftwork information will be acquired and documented as needed in proposal and during discussions in bid review meetings.
- PGL will request any other data that the team believes will help them manage the contractor better. At pre-award meetings contractors are asked to provide any details that may be addressed prior to execution in the field. Depending upon the complexity of the work, Contract Services may request additional units or T&M rates in the event out of scope work is needed during project execution to allow for smooth field execution.

Implementation Complete and Satisfactory?

Yes, PGL has met the intent of this recommendation. The subsequent submittal of closeout documents after the September 19, 2016 meeting adequately addressed our six parameters, point by point, as agreed upon in the meeting.

Remaining Gaps, Needs

None.

PGL Position

PGL suggests closure of this recommendation.

Future Liberty Verification Activities

During the first quarter of 2017, Liberty will review some contracts for completeness of data submittals. We will also validate that this data is used to manage the contractors effectively.

General Observations

None.

N.3 – Consistency of AMRP Information to the Board of Directors

Peoples Gas should substantially enhance the completeness and accuracy of AMRP performance information provided to the boards of directors, and ensure its consistency with information used by AMRP program management and provided to the small executive group with designated responsibility for program oversight.

Independent oversight of management performance for AMRP has come principally from the Integrys board, where Liberty found reporting and views more positive than warranted. Reporting on the project to the Integrys board was different from and more positive than the monthly reports at the AMRP management level.

Executive management has acknowledged important gaps in program management and control, and, as discussed in the preceding conclusions, created action plans for addressing them. Those plans, however, do not explicitly address improvement in the accuracy and consistency of project performance information at the board levels. The degree of disconnect in past reporting makes it appropriate for Company plans to identify specifically how consistency will be maintained. Reporting on a program like the AMRP must take place at many levels. It extends as far down as supervision of direct work, and all the way up to the board of director level.

Such reporting obviously should “roll up” in level of detail as one moves upward in the supervision/management/executive/director hierarchy. Supervisors in the field need to measure performance often at the crew level or across durations as short as a day, or even a shift. Information “depth” is thus paramount. Moreover, while their need for detail is extensive in their areas of responsibility, they may have little or no concern even for summary level information in other functional areas (information “breadth”). However, at higher levels in the hierarchy, the need for depth decreases as the need for breadth increases.

The difference in needs, however, does not mean that different sources for information or judgments about its significance should apply. To the contrary, the best run programs promote consistency in information reporting as it rolls up or down the hierarchy. Use of consistent sources of data and engagement by an experienced source of cost management resources form important elements in ensuring that data underpinnings remain consistent and accurate as data information flows through that hierarchy. Similarly, a suitably empowered and located cost management organization has substantial importance in ensuring that analysis of and judgments about performance data remain objective and transparent, particularly at higher levels. This report’s Chapter L: Cost Management discusses the importance of the empowerment aspect of the cost management function. For purposes of this chapter addressing oversight, the critical feature to consider is the need to address explicitly how information accuracy, summarization level, and objective, candid, and complete analysis will be maintained in order to support oversight needs.

Underlying Conclusions

N.6 There has not been sufficiently active board of director oversight and monitoring of the AMRP.

The utility board of directors nominally approves capital expenditure budgets, financings, and major contracts. As is typical of holding company structures, however, it does so through a board

consisting of inside (employee) executive and management leadership, with no representation from outsiders. AMRP update presentations came before the Peoples Gas board only rarely and they ceased after February 2012. These presentations focused on the formal approvals required as a matter of law, and not on program performance metrics. Thus, the utility board cannot be said to have operated as a source of close performance oversight, even when it was receiving occasional AMRP presentations. Liberty’s review of utility board minutes found mention of the AMRP on only four occasions, with the last being in September 2012.

Independent oversight of management performance in the typical holding company structure, as is the case for Integrys/Peoples Gas, comes from a parent board comprised predominantly of outsiders. It is neither surprising nor troubling to find utility subsidiary boards operating through internal executives and focusing on legal and pro forma governance requirements. That said, however, it becomes important to examine the parent board’s AMRP oversight role and performance, given that we did not find robust AMRP oversight at the utility board level.

Communication about AMRP project performance to the Integrys board has produced an overly positive view. Discussions with a director, for example, elicited the view of a program very well executed and managed. This report found, the Company’s own consultant has observed, and executive management (we believe) acknowledges, many important gaps in program management, control, and oversight. Management’s current acknowledgement is constructive, but demonstrates the variance between director perception and performance under the AMRP. The gap between actual program status and the picture presented to directors shows significant communications failure, whether it arises from a lack of management awareness, a lack of clear board expression of the need for better information, or some other cause.

Liberty examined reporting at various levels to determine the consistency of information received at each. This review disclosed inconsistencies as program data moved “upward.” Liberty found instances where reporting on the project to the Integrys board appeared different and more positive than the monthly reports at the program and project management level.

PGL Action Plan Steps

Item #	Task	Due Date
1	Identify the reports that will be reviewed across the hierarchy in order to meet oversight requirements of the Peoples Gas Board and Corporate Management.	Complete
2	Identify how reporting consistency will be maintained.	Complete
3	Employ the ‘roll up’ and ‘roll down’ functionality in the reports for data views as appropriate at various management levels.	Complete
4	Achieve the reporting system objectives mentioned above	Complete

Peoples Gas recognizes how Project Controls Management will ensure that the project team and management are informed of program/project status on a timely basis. Methods include a reporting system that identifies deviation from the plan and budget. The two primary functions of this reporting system are to:

- Provide the Project Manager and the team with the means of continuously measuring and evaluating the progress against the goals and milestones, budget and schedule.
- Provide advance warning of undesirable trends, deviations, slippages, and other project problems as well as facilitating timely corrective action to be taken to minimize their impact on cost, schedule, and quality.

Peoples Gas understands that the achievement of the required objectives is contingent upon the completeness and accuracy of the information. The use of consistent sources of data and an engagement by an experienced source of cost management resources form important elements in ensuring that data underpinnings remain consistent and accurate as data information flows through that hierarchy. Similarly, a suitably empowered and proactive cost management organization has substantial importance in ensuring that analysis of and judgments about performance data remain objective and transparent, particularly at higher levels.

Management also acknowledges that continuous monitoring and reporting, as well as insightful and candid analysis, is critical for management and executive reporting. The basis for this vital information is embedded throughout the various activities and performance metrics housed within this reporting system. PGL will assess schedule performance of active projects on a weekly and monthly basis, including a detailed variance report against current schedule. The following are in process to better monitor current project performance and develop broad program recovery plans: Program Plan, Integrated Project Schedule, Contractor Performance Metrics (Construction), Construction Finish Variance, Construction Recovery Plan, and Peoples Gas Shop Resources. The centralization of all these reports will ensure information consistency.

Upon completion of this recommendation a reporting process and procedure will be implemented in the Capital Project Execution Plan ("PEP").

Expected Post-Implementation Conditions and Factors

Liberty believes that the intent of this recommendation may have become lost. Our original concern was the honesty and accuracy of communications to the Board. In addition, we concluded that Board oversight of the AMRP was not adequate. Liberty observed that reports to the Board were shaded in a more positive light, and performance shortcomings were not presented fully or accurately. In our opinion, that represented a serious governance issue.

The response seems to have gotten tangled with data issues, consistency of databases, ability to drill down in reports, and maintenance of on-line databases. While those actions are fine, they do not address the fundamental issue of honesty in communications.

While the issue is quite serious, it would not be fair to paint new management with the same brush. No evidence exists that the new team has continued this bad practice. It is nonetheless incumbent on new management to demonstrate that management-to-director communications are accurate and candid.

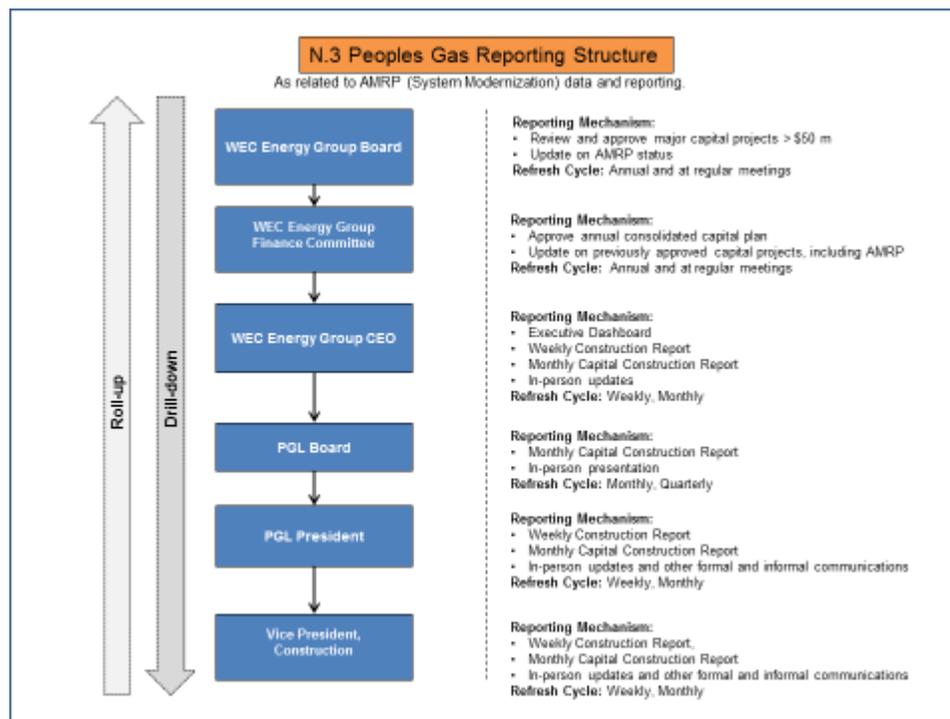
Liberty assumes that a program (1) costing many billions of dollars, (2) containing large risks in terms of both human life and corporate liability, and (3) also carrying large regulatory commitments and risks, will be among the Board's highest priorities. Few other endeavors can match the level of opportunity and risk associated with the AMRP. The Board has the obligation

to demand an honest assessment of all elements of the program. Under the Integrys organization, Liberty believes the Board did not get that, with the result that the Board seemed unaware as performance deteriorated and the project struggled. To satisfy this recommendation, there must be a program and demonstrated practice that the Board is getting the quality and quantity of information it needs to carry out its oversight obligations.

Summary of Liberty’s Steps to Verify Implementation

On June 8, 2016, Liberty met with Peoples Gas’ Project Management & Controls Project Director to discuss actions taken and review implementation progress. PGL did not submit close-out documents for this recommendation.

Liberty requested Peoples Gas to re-examine the original recommendation to understand its intent. We also would like to review the information provided to directors and senior executives. On July 15, 2016 Peoples Gas submitted a new response, and also a Roll-up/Drill-down Reporting Structure Chart as follows:



Peoples Gas, in an effort to enhance program reporting for the company, has implemented a streamlined process to compile and distribute insightful data at varying levels of detail. In order to centrally house and structure reporting across the organization, Peoples Gas deployed an MS SharePoint (“SharePoint”) site designed with the sole purpose of functioning as a reporting repository that is easy to access and navigate. This SharePoint site enables key stakeholders to view critical reports that designated personnel update on a pre-determined frequency or cycle (weekly, monthly, quarterly or annual). As recommended by Liberty, this shared and central repository will help ensure the accuracy, completeness, and consistency of reporting content and

formatting across the organization. Furthermore, this SharePoint site will help to ensure reporting transparency across the organization by providing multiple lines of sight to the same set of data.

This is a positive and appropriate effort. The reports on the SharePoint site have been tailored to meet the needs of executive stakeholders, senior project team members, directors, and staff across the organization. They are intended to provide complete and accurate information that captures the state of the program at any given time. Within these reports are varying levels of detail intended to provide drill-down and roll-up reporting capabilities. Along with critical performance data and metrics, key insight and analysis into trends are included in the reports to enable data-driven decision making.

On September 7, 2016, PGL conducted an online workshop with Liberty to discuss this recommendation.

The following are key deliverables that the Company believes to represent completion of this recommendation:

- Reporting Schematics
- Executive Dashboard - Construction
- Report Samples

On September 19, 2016, Liberty met with PGL Project Management & Controls Project Director to review the following documentation of tasks progress to-date:

- Capital Monthly Status Report
- Subset of the Capital Monthly Status Report

On October 3, 2016, in response to Liberty's continuing search for information on Board communications, PGL conducted a teleconference with Liberty regarding the reporting paths that the Board is currently receiving:

- Monthly Briefing
- Board Members receiving Dash Board Weekly Report and Monthly Production Report
- Presentation to the Board on AMRP Status
- Monthly Major Project Meeting discussion

Following that teleconference, Liberty received several samples of the discussed reports.

The following are key deliverables that the Company believes to represent completion of this recommendation:

- Develop sample report templates for use at various levels of management that include project execution team, senior executives and management team, and the Peoples Gas Board of Directors
- Develop reporting consistency requirements and standards development
- Account for roll up and roll down functionality of reports for data views as appropriate at various management level

Observed Conditions and Factors

There is little doubt that PGL has extended considerable effort in developing strong data systems and structured reporting. These continue to lack effective analysis, as discussed in the O-series of recommendations. Regarding Board communications, which is our primary interest in this Recommendation N.3, the formal submittals to the Board seem to have little in the way of substance, content or meaningful insights. The underlying concern, candor of reporting, cannot be fully addressed, simply because the Board reports are so thin that one cannot be sure of what is being communicated in terms of program performance.

These observations arise from our review of the documents provided by PGL. The “President’s Report”, which is submitted to the Board quarterly, includes a 3-4 page “construction update”. One of the three reports we received contained some useful observations on program risks. Other than that, there is little one can learn about the program from these reports. We understand that discussion might accompany these presentations, but the Board surely is not being given much to facilitate such discussions. There appears to be production reporting but it would seem that Board members are on their own to determine what those numbers mean. If the Board is indeed given an accurate understanding of program performance, it is not obvious from the President’s Report. Is performance good or bad, and what are the ramifications for the future? Such questions are neither answered nor hinted at in the report.

Liberty also received a “Capital Construction Summary Report”, which is the first three pages of the more detailed monthly construction report. More information on budget and schedule performance is provided here. We note, however, that the June report suggested no deviation was expected for the year, but the catch-up effort to support that conclusion did not happen.

Implementation Complete and Satisfactory?

Although we are critical of the oversight and governance information PGL provides to the Board, we acknowledge that the Board is responsible for determining its priorities and its information needs. Accordingly, we agree that this recommendation can be considered complete. There is no reason to suggest that the data provided to the Board is less than the Board demands, or that the data is less accurate than the Board expects.

Remaining Gaps, Needs

None.

PGL Position

PGL agrees that the recommendation is ready for close-out this quarter (3Q16).

Future Liberty Verification Activities

None.

General Observations

None.

N.5 – Inclusion of Long-term Goals in AMRP Metrics

Peoples Gas should upgrade AMRP performance metrics to include annual or cumulative progress versus the long-term (20-year) plan goals and metrics for the executive oversight group and the boards.

The preceding recommendation addressed immediate-term plans and budgets. Effective oversight of the AMRP also requires focus on how progress conforms to longer-term expectations. Over a long period, factors unique to a given year (early in the ramp up period, or extreme weather, for example) may diminish the “predictive” nature of experience over the past 12 months or so. Liberty did not find material longer-term reporting or analysis at the Executive Steering Committee or board levels. Moreover, as addressed elsewhere in this report, the original 20-year plan had not been recently updated. Peoples Gas needs to clearly establish and communicate 20-year goals, capital spending and key progress metrics, and to measure annual and cumulative project progress against the plan in regular reports to the executive oversight group and to the boards. Reporting also needs to consider effectiveness in meeting the AMRP’s overriding safety goal. How fast leak rates are falling and how much risk mitigation is occurring need to be addressed.

The discussions that began between Liberty and the Company in September 2014 have led to Company proposed improvement plans that recognize the need for long-term, as well as short-term key performance indicators, and for the need to analyze performance across durations longer than the current budget year. As is the case with Company plans to address measurement and reporting against annual targets, however, what are now fairly general statements of intent need to be translated (as the preceding recommendations observe with respect to annual measurement and reporting) into a well-defined, complete set of measures, clear responsibility for accumulating and using the information to report them, measures to ensure their accuracy, plans to make them regularly available, and, most importantly, process for using them to identify performance issues and respond to them.

Underlying Conclusions

N.8 Measurements of annual or cumulative progress versus the long-term plan goals and metrics have not been performed for the Executive Steering Committee or the Peoples Gas or Integrys boards.

Key attributes of effective AMRP oversight include identification and regular use of key performance metrics to focus on progress versus plans. Liberty did not observe such measurements in reporting to the Executive Steering Committee or the boards of directors. The AMRP original 20-year plan has not been updated recently. Without a clear, comprehensive, and regularly updated 20-year plan, senior executive and board of director oversight cannot exist at a sufficiently meaningful level. The AMRP requires clearly established and communicated 20-year goals, capital spending and key progress metrics. Measurements of annual and cumulative project progress against the plan may then be regularly reported to the Executive Steering Committee and Peoples Gas and Integrys boards.

PGL Action Plan Steps

Item #	Task	Status
1	Project Director to form Program/Project Performance Metrics improvements implementation team	Complete
2	Define objectives and requirements for the Program/Project Performance Metrics improvements process and procedure	Complete
3	Design the Program/Project Performance Metrics improvements process and procedure	In Progress
4	Prepare Program/Project Performance Metrics improvements process and procedure	In Progress
5	Approve and issue Program/Project Performance Metrics improvements process and procedure	In Progress
6	Provide orientation and training to project personnel on Program/Project Performance Metrics improvements	In Progress
7	Document completion of the Program/Project Performance Metrics improvements recommendation implementation	In Progress

PGL agrees that it should upgrade AMRP performance metrics to include annual or cumulative progress versus the long-term plan goals and metrics for the executive oversight group and the boards of Peoples Gas and WEC. Since the beginning of January 2016, management has been focusing on improving its basic set of core metrics associated with the Capital Construction Program, such as the following:

- Cost per service meter
- Cost per foot of main (size)
- Cost per service (size)
- Cost and schedule variance (plan vs. actual)
- Project financial expenditures per month (plan vs. actual)
- Program financial expenditures per month (plan vs. actual)
- Construction work in progress (plan vs. actual)
- Miles of main installed
- Miles of main retired
- Number of meters installed
- Permit compliance metrics
- Crew utilization
- Safety metrics associated with OSHA reporting requirements (work-related illness and injuries)
- Program progress, cost, and schedule reporting

Peoples Gas expects that improvements in the AMRP performance framework can facilitate the use of key performance indicators (KPIs), trend summaries, alerts, and drill-down capabilities for more detailed analyses of AMRP implementation progress and targets. This approach is consistent

with PGL's response to Recommendation O.3 to redefine and reestablish its standards for program performance.

Expected Post-Implementation Conditions and Factors

PGL agrees that providing accurate and comprehensive project performance data at all levels of the organization is critical to program oversight and the successful guidance of the program. However, management has been taking a short view of the AMRP program. Almost all existing metrics monitor annual performance, not to mention that AMRP activities are embedded within all the capital construction work. The re-established AMRP progress and performance metrics on a long-term program basis will provide executive management a new tool to oversee and ensure the fulfillment of the Company's previous and serious commitment to remove catastrophic risks from its gas system.

Summary of Liberty's Steps to Verify Implementation

On September 7, 2016, management conducted a workshop with Liberty to discuss this recommendation in conjunction with Recommendations O.2 to O.5. Management is finalizing the new Metrics and Reporting Procedure. Specifically, Section 6.2 of this procedure lays out the steps on Collection, Analysis, and Reporting of Performance Data, and Section 6.3 the steps on the Review of Performance Data and Performance Improvement Actions.

PGL has also presented Capital Monthly Report sample charts to illustrate the Neighborhood Focus on reporting AMRP annual progress on main installation, services installation, meters installation, and retirement installation. There is also an AMRP Program-to-date Table that summarizes the quantities of distribution main, HP main, services, meters, and main retired.

The following are key deliverables that management believes will complete implementation of this recommendation:

- Performance Metrics Framework improvement recommendations
- Performance Measurement process and procedure

Upon completion of this recommendation a reporting process and procedure will be implemented in the Capital Project Execution Plan ("PEP").

On September 19, 2016, Liberty met with Peoples Gas' Project Management & Controls Project Director to review the following documentation of tasks progress to-date:

- (A) Metrics and Reporting Procedure draft, dated September 16, 2016
- (B) Metrics and Reporting Procedure Attachment 1 – Matrix of Project/Annual Plan/Program Recurring Reports
- (C) Metrics and Reporting Procedure Attachment 2 – Matrix of Project/Annual Plan/Program Recurring Meetings
- (D) Metrics and Reporting Procedure Attachment 3 – Performance Improvement Action Log
- (E) Capital Monthly Report – August 2016

Observed Conditions and Factors

PGL groups this recommendation with four other related “Reports, Analysis, and Control Skills” recommendations, namely O.2 on establishing a framework for performing improvement, O.3 on redefining standards for program performance, O.4 on developing a culture and capability to perform insightful analysis of program performance, and O.5 on expanding the roles of project controls professionals to perform project and program performance analysis. Those four recommendations are related, but they also represent essential building blocks for this recommendation. Hence, they must be in place first before recommendation N.5 can be effectively addressed.

Implementation Complete and Satisfactory?

No. This recommendation requires reporting and analysis on a long-term total AMRP basis. We recognize that the bulk of management’s efforts should be focused on short-term (one to three year) performance requirements. But it is important to also understand how those short-term results relate to long-term commitments. It is critical that management keep an eye on the ultimate AMRP cost and schedule. Now, however, there is no long-term plan or commitment, pending reviews underway by the ICC, PGL and stakeholders. It is therefore not possible to complete this recommendation at this time.

Remaining Gaps, Needs

Development and analysis of monthly and cumulative AMRP progress versus the long-term goals for upper management.

PGL Position

PGL believes that this recommendation should remain open pending the direction determined by the long-term plan from SMP docket ruling in January 2017.

Future Liberty Verification Activities

During the first quarter of 2017, Liberty will review the PGL closeout package. We will also validate in the second quarter the new AMRP performance metrics to the Board regarding the completeness and effectiveness of analyzing the annual or cumulative progress versus the long-term (20-year) plan goals.

General Observations

None.

O.2 – Framework for Performance Improvement

Management should establish a framework for performance improvement based on analysis of project performance and corrective actions.

One specific management need is information on program performance and how to facilitate improvements where appropriate. Management should put in place a specific process to provide a continuing means to understand and improve performance based on strong analysis of actual progress.

Underlying Conclusions

O.2 AMRP management has not made effective use of performance results analysis to drive improvement actions, from the board and executive management levels down to day-to-day supervision.

Management is not well positioned to use performance results effectively, because it does not receive performance results in an actionable or credible way. Liberty found a lack of focus on management follow-up to address performance gaps, as this report discusses repeatedly in many chapters.

PGL Action Plan Steps

Item #	Task	Status
1	Project Director to form Program/Project Performance Metrics Improvements Task Lead	Complete
2	Define objectives and requirements for the Program/Project Performance Metrics improvements process and procedure	Complete
3	Design the Program/Project Performance Metrics improvements process and procedure	In Progress
4	Prepare Program/Project Performance Metrics improvements process and procedure	In Progress
5	Approve and issue Program/Project Performance Metrics improvements process and procedure	In Progress
6	Provide orientation and training to project personnel on Program/Project Performance Metrics improvements	In Progress
7	Document completion of the Program/Project Performance Metrics improvements recommendation implementation	In Progress

Management agrees that it should upgrade AMRP performance metrics to include annual or cumulative progress versus the long-term plan goals and metrics for the executive oversight group and the boards of Peoples Gas and WEC. Since the beginning of January 2016, management has been focusing on improving its basic set of core metrics associated with the Capital Construction Program, such as the following:

- Cost per service meter
- Cost per foot of main (size)
- Cost per service (size)
- Cost and schedule variance (plan vs. actual)
- Project financial expenditures per month (plan vs. actual)
- Program financial expenditures per month (plan vs. actual)
- Construction work in progress (plan vs. actual)
- Miles of main installed
- Miles of main retired
- Number of meters installed
- Permit compliance metrics
- Crew utilization
- Safety metrics associated with OSHA reporting requirements (work-related illness and injuries)
- Program progress, cost, and schedule reporting

Management expects that improvements in the AMRP performance framework can facilitate the use of key performance indicators, trend summaries, alerts, drill-down capabilities for more detailed analyses of AMRP implementation progress and targets.

Expected Post-Implementation Conditions and Factors

The O-series of recommendations all relate to improving PGL’s use of performance data in an analytical way. Recommendation O.2 is directed at translating that reporting and analytical capability into specific performance improvements. The typical cycle includes:

- Establishment of a performance standard (addressed in Recommendation O.3);
- Measurement of actual performance against the standard;
- Analysis of deviations (addressed in Recommendations O.4 and O.5); and
- Corrective action (addressed in recommendation O.2).

The final step, intended to produce the desired improvement, is the basic objective behind collecting, analyzing, and reporting data in the first place.

Few organizations successfully navigate all four steps in most applications. Most end the process after “reporting”, as if that were an end in itself. PGL, in response to this recommendation, initiated a simple, but novel in our experience, approach that should assure a healthy implementation of a strong corrective action program. PGL’s “Performance Improvement Action Log” picks up at the third of the four listed steps, and tracks the actions taken as a result of performance deviations. Accordingly, the process cannot be short-circuited and will be followed by Project Controls and management to the end, including actions to be taken and the success of implementation. We have not seen this formal approach used much elsewhere and consider PGL’s design and intended use to be a best practice.

Summary of Liberty's Steps to Verify Implementation

On September 7, 2016, PGL conducted an online workshop with Liberty to discuss Recommendations O.2 to O.5. The Company is finalizing the new Metrics and Reporting Procedure. Specifically, Section 6.2 of this procedure lays out the steps on Collection, Analysis, and Reporting of Performance Data, and Section 6.3 the steps on the Review of Performance Data and Performance Improvement Actions.

On September 19, 2016, Liberty met with Peoples Gas' Project Management & Controls Project Director to discuss the following documents:

- A. Metrics and Reporting Procedure draft, dated September 16, 2016
- B. Metrics and Reporting Procedure Attachment 1 – Matrix of Project/Annual Plan/Program Recurring Reports
- C. Metrics and Reporting Procedure Attachment 2 – Matrix of Project/Annual Plan/Program Recurring Meetings
- D. Metrics and Reporting Procedure Attachment 3 – Performance Improvement Action Log
- E. Capital Monthly Report – August 2016

We discussed at that meeting the proposed training plan and syllabus, the creation of which Liberty considers an extremely positive step by PGL. While a syllabus was not received, a specification for the requisite training was subsequently received and represents a very strong description of the type of analytical thinking and processes required of a sophisticated project management / project controls function.

The following are key deliverables for the performance improvement framework:

- Performance Metrics Framework improvement recommendations
- Performance Measurement process and procedure

Upon completion of this recommendation a reporting process and procedure will be implemented in the Capital Project Execution Plan.

Observed Conditions and Factors

PGL has a good grasp of this recommendation's intent, and has evidenced a strong buy-in to the concept. The path management has chosen to implementation is a good one. The focus on starting with qualified professionals, developing training in analytical skills as applied to construction, and insisting on corrective actions as a result of analyses is excellent, and we believe the approach being taken is a best practice. The formalization of the approach, and the development of the action log, suggest that the program will be effective and sustainable.

Implementation Complete and Satisfactory?

Yes. PGL has taken significant steps in designing a plan for this response and in implementing that plan. Liberty is confident that the Company has the desired vision to implement this recommendation and is satisfied that the recommendation is being, and will continue to be, effectively implemented.

Remaining Gaps, Needs

Training of Project Controls professionals, project specialists, project managers, managers from Engineering, Contracts, Construction and Construction Planning. Liberty understands that Ernst & Young has been retained to design the training, in accordance with PGL's specification.

PGL Position

PGL agrees that the recommendation is ready for close-out this quarter (3Q16).

Future Liberty Verification Activities

During the second quarter of 2017, Liberty will conduct a "mini-audit" of the action log to verify successful implementation of this recommendation.

General Observations

None.

O.3 –Program Performance Standards

In the course of its current improvement initiatives, Peoples Gas should redefine and reestablish its standards for program performance.

Given the current lack of standards, Peoples Gas will be unable to provide the insightful analysis needed. The current improvement initiatives should remedy this shortcoming. As Peoples Gas develops these new budgets, plans, and other relevant documents, the Company should define and communicate their intended use for future performance analysis and reporting.

Underlying Conclusions

O.3 The AMRP lacks a credible and comprehensive set of standards, which leaves it without a prerequisite to effective AMRP reporting and performance analysis.

Project measurement bases should find definition in program plans and in documentation of the underlying assumptions. Budgets and schedules, for example, provide standards of performance and management’s expectations regarding performance requirements. Management should hold project organizations and contributors accountable to those standards. Management cannot seek accountability where standards do not exist, or where standards lack credibility.

PGL Action Plan Steps

Item #	Task	Status
1	Project Director to form Program/Project Performance Metrics Improvements Task Lead	Complete
2	Define objectives and requirements for the Program/Project Performance Metrics improvements process and procedure	Complete
3	Design the Program/Project Performance Metrics improvements process and procedure	In Progress
4	Prepare Program/Project Performance Metrics improvements process and procedure	In Progress
5	Approve and issue Program/Project Performance Metrics improvements process and procedure	In Progress
6	Provide orientation and training to project personnel on Program/Project Performance Metrics improvements	In Progress
7	Document completion of the Program/Project Performance Metrics improvements recommendation implementation	In Progress

PGL agrees that it should upgrade AMRP performance metrics to include annual or cumulative progress versus the long-term plan goals and metrics for the executive oversight group and the boards of Peoples Gas and WEC. Since the beginning of January 2016, the Company has been focusing on improving its basic set of core metrics associated with the Capital Construction Program, such as the following:

- Cost per service meter
- Cost per foot of main (size)
- Cost per service (size)
- Cost and schedule variance (plan vs. actual)
- Project financial expenditures per month (plan vs. actual)
- Program financial expenditures per month (plan vs. actual)
- Construction work in progress (plan vs. actual)
- Miles of main installed
- Miles of main retired
- Number of meters installed
- Permit compliance metrics
- Crew utilization
- Safety metrics associated with OSHA reporting requirements (work-related illness and injuries)
- Program progress, cost, and schedule reporting

Management expects that improvements in the AMRP performance framework can facilitate the use of key performance indicators, trend summaries, alerts, drill-down capabilities for more detailed analyses of AMRP implementation progress and targets.

Expected Post-Implementation Conditions and Factors

The O-series of recommendations all relate to improving PGL's use of performance data in an analytical way. The typical cycle includes:

- Establishment of a performance standard (addressed in this Recommendation O.3);
- Measurement of actual performance against the standard;
- Analysis of deviations (addressed in Recommendations O.4 and O.5); and
- Corrective action (addressed in recommendation O.2).

This Recommendation O.3 focuses on the establishment of performance standards. We note that the challenge here is somewhat of a semantic one. All organizations work to approved budgets and schedules, and these often carry a high expectation of compliance. We have generally found, however, that this is not the case on large construction projects, and the larger the project, the less the expectation of conformance. In such cases, budget and schedules are far from performance standards; in fact, there is an expectation that they will not be met. As a result, the budgets and schedules lack credibility from the start and it is impossible to hold anyone accountable for non-compliance. Effective project management and control becomes impossible in this all-too-common scenario. Budgets and schedules may indeed be a measuring stick, but they are by no means a standard of performance.

The intent of this recommendation is to transform budgets and schedules into performance standards. This is largely a matter of culture, but also requires budgets and schedules that are believable. It also requires processes that follow up on performance and hold managers and organizations accountable. In this sense, all of the O-series recommendations are integrated towards this objective. In this particular O.3, we have stressed the importance of communicating

to managers and project participants that there are indeed standards for performance and they will be measured against those. Discussions with PGL personnel indicate they are on board with this necessity and plan to communicate accordingly.

Summary of Liberty's Steps to Verify Implementation

On September 7, 2016, PGL conducted an online workshop with Liberty to discuss Recommendations O.2 to O.5. The Company is finalizing the new Metrics and Reporting Procedure. Specifically, Section 6.1 of this procedure lays out the steps on Planning of Metrics and Reporting, and Section 6.4 the steps on the Continual Improvement of Metrics and Reporting.

PGL has also presented a Capital Monthly Report sample charts to illustrate the Neighborhood Focus on reporting AMRP annual progress on main installation, services installation, meters installation, and retirement installation. There is also an ICC July Month-End Report sample page on Neighborhood Main Replacement Program.

On September 19, 2016, Liberty met with Peoples Gas' Project Management & Controls Project Director to discuss the following documents:

- A. Metrics and Reporting Procedure draft, dated September 16, 2016
- B. Metrics and Reporting Procedure Attachment 1 – Matrix of Project/Annual Plan/Program Recurring Reports
- C. Metrics and Reporting Procedure Attachment 2 – Matrix of Project/Annual Plan/Program Recurring Meetings
- D. Metrics and Reporting Procedure Attachment 3 – Performance Improvement Action Log
- E. Capital Monthly Report – August 2016

The following are key deliverables for the performance improvement framework:

- Performance Metrics Framework improvement recommendations
- Performance Measurement process and procedure

Upon completion of this recommendation a reporting process and procedure will be implemented in the Capital Project Execution Plan.

Observed Conditions and Factors

Recommendation O.3 must be evaluated within the context of the full program for reporting, analysis and corrective action. In discussions with PGL personnel, it became clear that they understand the subtle, but critical, distinction between targets and performance standards and are factoring that thinking into the program. Liberty is satisfied that this distinction will be communicated and implemented successfully.

Implementation Complete and Satisfactory?

Yes. The implementing steps for this recommendation are less tangible than most recommendations in that they depend on how the organization perceives budgets and schedules within the overall control framework. The required culture change in this regard is likely to take time, as budgets and schedules become more credible, as they are communicated more effectively

as legitimate performance expectations, and as project personnel are increasingly held accountable to those standards.

Remaining Gaps, Needs

Training of Project Controls professionals, project specialists, project managers, managers from Engineering, Contracts, Construction and Construction Planning. Liberty understands that Ernst & Young has been retained to design and deliver this training in accordance with the PGL specification.

PGL Position

PGL agrees that the recommendation is ready for close-out this quarter (3Q16).

Future Liberty Verification Activities

During the second quarter of 2017, Liberty will review the new standards of performance. We will also validate the implementation of these standards.

General Observations

None.

O.4 – Framework for Performance Improvement

The Project Management Office should establish a culture and a regular, defined, comprehensive program that provides insightful analysis of program performance, and should acquire the capability to perform such analyses.

The Project Management Office must overcome its reluctance to provide objective and, if necessary, self-critical analysis. The greatest beneficiary of such analysis will be the Organization itself. To accomplish this, the Project Management Office must develop an enhanced capability for analysis.

Each executive should take a more active role in demanding information and analysis from the project to fully support their oversight responsibilities. Executives must work with the program to explain their needs and insist upon necessary analysis and reports. The burden is on the project to provide that material, but executives must take the lead and insist upon responsive actions by the project on a continuing basis.

Underlying Conclusions

O.4 AMRP management has not given strong emphasis to creating a culture and a set of capabilities for aggressive analysis.

The mass of data presented to management does not lend itself to meaningful analysis or valuable insights. The organization has not yet shown the capabilities for such analysis or evidence that it recognizes the need for making analysis a central element of program management.

PGL Action Plan Steps

Item #	Task	Status
1	Project Director to form Program/Project Performance Metrics Improvements Task Lead	Complete
2	Define objectives and requirements for the Program/Project Performance Metrics improvements process and procedure	Complete
3	Design the Program/Project Performance Metrics improvements process and procedure	In Progress
4	Prepare Program/Project Performance Metrics improvements process and procedure	In Progress
5	Approve and issue Program/Project Performance Metrics improvements process and procedure	In Progress
6	Provide orientation and training to project personnel on Program/Project Performance Metrics improvements	In Progress
7	Document completion of the Program/Project Performance Metrics improvements recommendation implementation	In Progress

The new leadership team at Peoples Gas brings project management expertise from years of work on numerous large and successful capital projects. This new team is further supplemented by external talent to assist with improvements to project and cost controls, cost and schedule planning, and management. Management understands the role of a continuous improvement program to promote a culture of and an emphasis on seeking innovations to improve efficiency in the installation of mains, services, and meters. Peoples Gas believes that the continuous improvement mindset needs to be embedded into the work culture and practiced at all levels of the organization similar to safety and quality, and as such, may be administered and assessed outside of just a standalone team or group. Nonetheless, such efforts can benefit from an outside facilitator or technology subject matter expert. Management has just begun the process to assess project management technology improvement opportunities. Management intends to establish a performance monitoring program that provides insightful analysis and actionable advice to make improvements to project performance and help guide risk mitigation and management of AMRP.

The list below notes likely areas of monitoring and analysis to better inform AMRP implementation moving forward:

- Program progress, cost, and schedule reporting
- Safety reporting for individuals, shops, crews, and contractors
- Contractor performance and alignment with Peoples Gas goals
- Evaluation of project management, crew, and contractor performance
- Engineering quality, compliance with standards, and efficiency
- Performance compared to third party expectations (e.g., CDOT)
- Permit compliance (e.g., construction durations through restoration)
- Customer satisfaction with internal and contractor crews
- Managerial effectiveness
- Team members' personal performance plans
- Root cause analyses
- Materials management and waste
- Capital utilization efficiency
- Regulatory reporting (e.g., ICC, OSHA, PHMSA)

Management expects that improvements in the AMRP performance framework and performance standards can facilitate the use of key performance indicators, trend summaries, alerts, and drill-down capabilities for more detailed analyses of AMRP implementation progress and targets.

Expected Post-Implementation Conditions and Factors

The O-series of recommendations all relate to improving PGL's use of performance data in an analytical way. This Recommendation, O.4, is directed at building the skills and capabilities to perform the insightful analyses required for an effective management program. The typical cycle includes:

- Establishment of a performance standard (addressed in Recommendation O.3);
- Measurement of actual performance against the standard;
- Analysis of deviations (addressed in Recommendations O.4 and O.5); and

- Corrective action (addressed in recommendation O.2).

Liberty initially provided 95 recommendations in the Phase 1 audit report and recommendation O.4 might be the most important in terms of the success of the Project Management and Project Controls organizations, as well as the overall long-term success of the AMRP. The notion of “insightful analysis” is far from obvious to most people. It represents a skill and way-of-thinking that is often lacking in organizations and is difficult for many managers and analysts to develop, or even understand.

Liberty has had many discussions with PGL in this regard over the last two years. Such discussions have at times been encouraging, and at other times disappointing. In the latter category are the “management observations”, which we understand are intended to represent “insightful analysis”. Our reading of Company reports suggests that PGL has yet to fully grasp the concept. The “observations” are generally limited to repeating what the numbers already make obvious. There is little in the way of performance analysis or discussion, no remarks on what can be done better and how, and no insights offered on future expectations.

On the other hand, PGL’s “specification” for “Analytics Training” is spot-on in terms of what we judge to constitute insightful analysis as applied to construction work. In fact, we have rarely seen such a quality discussion of this admittedly fuzzy concept. This short but powerful document provides an excellent roadmap for PGL to build the skills and capabilities so critical to a multi-billion-dollar program.

Summary of Liberty’s Steps to Verify Implementation

On September 7, 2016, PGL conducted an online workshop with Liberty to discuss Recommendations O.2 to O.5. The Company is finalizing the new Metrics and Reporting Procedure. Specifically, Section 6.2 of this procedure lays out the steps on Collection, Analysis, and Reporting of Performance Data.

On September 19, 2016, Liberty met with Peoples Gas’ Project Management & Controls Project Director to discuss the following documents:

- A. Metrics and Reporting Procedure draft, dated September 16, 2016
- B. Metrics and Reporting Procedure Attachment 1 – Matrix of Project/Annual Plan/Program Recurring Reports
- C. Metrics and Reporting Procedure Attachment 2 – Matrix of Project/Annual Plan/Program Recurring Meetings
- D. Metrics and Reporting Procedure Attachment 3 – Performance Improvement Action Log
- E. Capital Monthly Report – August 2016

In the meeting, there was a discussion on the outstanding training plan and syllabus. PGL subsequently submitted a document, which we have termed a specification, for that training program.

The following are key deliverables for the performance improvement framework:

- Performance Metrics Framework improvement recommendations

- Performance Measurement process and procedure

Upon completion of this recommendation a reporting process and procedure will be implemented in the Capital Project Execution Plan.

Observed Conditions and Factors

At this point in time, we are left with a large gap between what the organization currently seems able to do (“management observations”) and what it proposes to do, as described in the training specification. That specification refers to the ability to evaluate field efficiency and spot trouble signs early. It talks of optimum staffing and optimizing overtime and productivity. It also raises the challenge of spotting trends in costs, quality and schedule. Embedded throughout the document is the notion of looking at historical performance only as a way to forecast and optimize future performance.

The fact that management has not, so far, been able to bridge this gap should be a matter of concern. But the fact that PGL now recognizes the gap, has articulated it in the specification, and plans to implement an extensive training program to close the gap, is extremely positive and encouraging. Liberty recognizes that this will not happen overnight, nor will one training course be successful in making everyone a top practitioner of a difficult art. The good news is that (1) an understanding now exists that we did not see before; (2) a roadmap in the form of the training specification is now in place; and (3) the necessary support framework is being built in the form of the implementation plans for the associated recommendations.

Implementation Complete and Satisfactory?

Yes. We would have preferred to see some real tangible analysis in PGL’s current reports but nonetheless see a positive path forward. We emphasize that “understanding” is an enormous prerequisite to satisfying this recommendation and, for the first time, we see tangible evidence that this understanding is indeed in place.

Remaining Gaps, Needs

The successful execution of the training program, followed by implementation of the concepts, represent unfinished business. Liberty understands that Ernst & Young has been retained to develop and implement the training program in accordance with the PGL specification.

PGL Position

PGL agrees that the recommendation is ready for close-out this quarter (3Q16).

Future Liberty Verification Activities

During the fourth quarter of 2016, Liberty will review the details of the Ernst & Young training plan, including the syllabus, planned trainees, schedule, and follow-up requirements. The specification is sound, providing confidence that the effort is on the right track. Nevertheless, we plan on a detailed review of the program in December.

During the second quarter of 2017, Liberty will review sample analyses of progress and performance from various reports and at various levels. This will focus on PGL's capability to perform such analyses and management's use of those analyses.

General Observations

None.

O.5 – Roles of Project Controls Professionals

Peoples Gas should expand the role of its project controls professionals to allow for more analysis of project progress and performance and, in turn, support of management by facilitating corrective action.

This report addresses specific analysis improvement opportunities in a number of chapters. Management should address use of existing people to implement Liberty’s recommendations in this regard. If they prove unsuitable, then further staff development or supplementing with added skills will prove necessary.

Underlying Conclusions

O.7 Peoples Gas has not called upon its project controls personnel to provide the analysis and facilitation of corrective action that the AMRP requires.

Given the apparent higher than average skill level of the people, the AMRP appears to underutilize them. They likely have the capability to provide the analytical contributions that management does not appear to have demanded. The need for augmentation of cost estimating and management resources may or may not make these personnel a potential pool of resources from which to draw.

PGL Action Plan Steps

Item #	Task	Status
1	Project Director to form Program/Project Performance Metrics Improvements implementation team	Complete
2	Define objectives and requirements for the Program/Project Performance Metrics improvements process and procedure	Complete
3	Design the Program/Project Performance Metrics improvements process and procedure	In Progress
4	Prepare Program/Project Performance Metrics improvements process and procedure	In Progress
5	Approve and issue Program/Project Performance Metrics improvements process and procedure	In Progress
6	Provide orientation and training to project personnel on Program/Project Performance Metrics improvements	In Progress
7	Document completion of the Program/Project Performance Metrics improvements recommendation implementation	In Progress

Management will expand the role of its project controls professionals and in particular, the role of the Project Manager (PM). The PM’s role is expected to be cradle-to-grave within the AMRP delivery team. The expanded role will reflect the traditional role of the PM for WEC capital projects. The PM has the overall responsibility and accountability to lead a project from inception and design, through engineering, permitting, contracting, construction, and closeout. Throughout

the project life cycle, the PM will maintain strong leadership, management, and oversight responsibilities to achieve project budget, schedule, safety, and quality targets.

The new Peoples Gas leadership team brings project management expertise from years of work on numerous large and successful capital projects. This new team is further supplemented by external talent to assist with improvements to project and cost controls, cost and schedule planning, and management. Management understands the role of a continuous improvement program to promote a culture of and an emphasis on seeking innovations to improve efficiency in the installation of mains, services, and meters. Management believes that the continuous improvement mindset needs to be embedded into the work culture and practiced at all levels of the organization similar to safety and quality, and as such, may be administered and assessed outside of just a standalone team or group. Nonetheless, such efforts can benefit from an outside facilitator or technology subject matter expert. Management has just begun the process to assess project management technology improvement opportunities.

Below is a sample of the core metrics that project controls professionals will closely monitor and analyze to better guide program implementation in the coming months and years. Insightful analysis and progress monitoring by the project controls group of these metrics will better inform and guide risk mitigation, risk management and associated corrective actions for effective program implementation:

- Cost and schedule variance (plan vs. actual)
- Project financial expenditures per month (plan vs. actual)
- Program financial expenditures per month (plan vs. actual)
- Construction work in progress (plan vs. actual)
- Program progress, cost, and schedule reporting
- Safety reporting for individuals, shops, crews, and contractors
- Contractor performance and alignment with Peoples Gas goals
- Evaluation of project management, crew, and contractor performance
- Engineering quality, compliance with standards, and efficiency
- Performance compared to third party expectations (e.g., CDOT)
- Permit compliance (e.g., construction durations through restoration)
- Customer satisfaction with internal and contractor crews
- Materials management and waste
- Capital utilization efficiency
- Regulatory reporting (e.g., ICC, OSHA, PHMSA)

Management expects that improvements AMRP performance framework as well as expansion of the role of its project controls professionals can facilitate the use of key performance indicators, trend summaries, alerts, and drill-down capabilities for more detailed analyses of AMRP implementation progress and targets.

Expected Post-Implementation Conditions and Factors

The O-series of recommendations all relate to improving the use of performance data in an analytical way. Recommendation O.5 is directed at empowering project controls professionals

such that they can provide the maximum support to the control scheme. The typical control cycle includes:

- Establishment of a performance standard (addressed in Recommendation O.3);
- Measurement of actual performance against the standard;
- Analysis of deviations (addressed in Recommendations O.4 and O.5); and
- Corrective action (addressed in recommendation O.2).

Prior O-series recommendations focused on establishing the control process and building capabilities. Recommendation O.5 focuses on assuring that the people associated with the processes have the management support to execute the process effectively.

During our audit, it was clear that the role of Project Controls personnel was limited. In many cases, they had the skills to contribute effectively, but did not have a defined role that allowed them to be effective. The processes we have recommended, and which management is implementing, require an empowered staff of project controls professionals. It is essential that roles and responsibilities be communicated and management's expectations for Project Controls be consistent with a strong control scheme.

Summary of Liberty's Steps to Verify Implementation

On September 7, 2016, PGL conducted an online workshop with Liberty to discuss Recommendations O.2 to O.5. Management is finalizing the new Metrics and Reporting Procedure. Specifically, Section 6.2 of this procedure lays out the steps on Collection, Analysis, and Reporting of Performance Data.

PGL has also presented a summary of the roles and responsibilities of Cost Management Professionals. There is a matrix depicting the Division of Responsibilities between the Project Controls Manager, Cost Analysts, and Project Manager.

On September 19, 2016, Liberty met with Peoples Gas' Project Management & Controls Project Director to discuss the following documents:

- A. Metrics and Reporting Procedure draft, dated September 16, 2016
- B. Metrics and Reporting Procedure Attachment 1 – Matrix of Project/Annual Plan/Program Recurring Reports
- C. Metrics and Reporting Procedure Attachment 2 – Matrix of Project/Annual Plan/Program Recurring Meetings
- D. Metrics and Reporting Procedure Attachment 3 – Performance Improvement Action Log
- E. Capital Monthly Report – August 2016

The following are key deliverables for project controls professionals' role in performance management analysis:

- Performance Metrics Framework improvement recommendations
- Performance Measurement process and procedure.

Upon completion of this recommendation a reporting process and procedure will be implemented in the Capital Project Execution Plan.

Observed Conditions and Factors

In evaluating responsiveness to this recommendation, the roles and responsibilities document is perhaps the most important. That document specifically addresses 24 tasks or activities. Each task represents a traditional mechanical chore. On that basis, the definition of roles is not supportive of this recommendation, and in fact runs counter to it. By focusing on the mechanical responsibilities, management is not allowing time for the activities recommended by Liberty, specifically the expansion of the role into “more analysis of project progress and performance and, in turn, support of management by facilitating corrective action”.

Discussion with PGL personnel suggests that this is an oversight, as evidenced by the Company’s focus on training and development of personnel in analytical skills. We tend to agree with this explanation, although the omission is important.

Implementation Complete and Satisfactory?

Yes. The motivation for this recommendation was to address the low expectations for controls personnel in the old organization. This was a management failure in that the controls organization did have a reasonable set of skills. That level of low expectations does not exist in the new organization, so we are not particularly concerned. Management’s approach to project controls has already convinced us that controls personnel will have the expanded role we recommend.

Remaining Gaps, Needs

The focus of the roles and responsibilities document on mechanical chores and the creation of data while ignoring what is to be done with the data to facilitate management is an omission that should be corrected. Please see the discussion under Recommendation H.4 about insightful analysis, which apply as well here.

PGL Position

PGL agrees that the recommendation is ready for close-out this quarter (3Q16).

Future Liberty Verification Activities

During the first quarter of 2017, Liberty will review the role that has been assumed by project controls professionals. We view this as an evolutionary process, and therefore do not expect massive change. The pace and direction of change will be more important.

General Observations

None.

T.1 – Improve Communication & Coordination with the City

Peoples Gas needs to continue to focus on improving communications and relationships with the City and with its Department of Transportation, but must recognize that it will take improved permitting and work performance to create and sustain relationships at the level needed to optimize AMRP performance.

Peoples Gas has made substantial strides in addressing the issues it has with the City, through designation of a specific liaison and resultant activities. The internal meetings focusing on City-related activities also show high-level attention to the relationship. Permanent and meaningful change will require a continuing priority on relationship improvement. However, as important as communications and relationships with the City may be, Peoples Gas performance in the field becomes the more important factor going forward. Improving performance in meeting permitting requirements and expectations comprises a more significant driver of the relationship with the City and of success in carrying out the AMRP, as other chapters of this report address.

Underlying Conclusions

T.1 The Chicago Department of Transportation’s perception of Peoples Gas performance has been very negative, although it may be beginning to improve.

The AMRP creates a primary programmatic interface between Peoples Gas and the City of Chicago. The nature of AMRP projects causes construction activity to run the lengths of entire city blocks, often on both sides of the street. By the end of the program, the AMRP will involve every ward of the city. Significant problems at the outset of the AMRP served to aggravate the disruptions and public irritations that work on such a large scale inevitably produces.

Fundamentally, however, the relationship with the City and the Chicago Department of Transportation has been and will continue to be a function of the management and execution of the AMRP and all other Peoples Gas construction and maintenance activities in the Public Way. Overall, communications with Chicago Department of Transportation and the City have improved, and show promise of further improvement. Further improving relationships with the City will depend upon improving project planning, scheduling, management and execution, not just of the AMRP but of all interactions with the City and Chicago Department of Transportation.

PGL Action Plan Steps

Item	Task	Due Date
1	Meet with CDOT to review the new proposed project construction sequence and solicit comments on interface and communication	Completed
2	Document comments from CDOT meeting and determine required changes to existing communications protocols and procedures.	Completed
3	Begin reviewing all new work by scoping blocks of work such that all work can be completed within 60 days of permit issuance under normal circumstances	Completed
4	Review interface communication protocols and procedures (while this is an ongoing monthly process, schedule a formal session to	Completed

	review)	
5	Document lessons learned, from pilot of the proposed construction sequencing and outline any changes to communication protocols and procedures that impact CDOT or other City Departments.	Completed

Prior to the acquisition, Peoples Gas had improved relations with the City through designation of a specific liaison and resultant activities. Permanent and meaningful change will require a continuing priority on relationship improvement and improved results in the field.

Since the acquisition, the new senior management team met with senior City officials; discussions focused on improving communication, coordination, and performance. The City raised concerns with AMRP progress and schedule. In response, management proposed a new project construction sequence in early 2016 and met with CDOT to review the new process and to identify required interface and communications protocols.

In March 2016, Peoples Gas established a coordination agreement with the City and agreed to report through DOT Maps. Peoples Gas conducted a pilot in Beverly Phase 3 with a goal of completing all work within 60 days of permit issuance. Peoples Gas was not successful completing the work within 60 days; phases 8 & 9 were completed within 90 days of permit issuance. Phase 12 showed improvement as 4 of 5 first blocks were completed within 60 days.

In 2017 management plans to create a block by block schedule in an effort to achieve completing work within a block within 60 days of permit. However, this approach requires more schedulers, Management is in the process of hiring additional schedulers and has plans to pilot the block by block approach in October 2016.

PGL has also been communicating more frequently with City Alderman, especially any changes to the schedule that impact their neighborhoods. Alderman complaints have been reduced significantly.

Expected Post-Implementation Conditions and Factors

Liberty would expect to see improved coordination of construction activities with the City and CDOT and fewer complaints from the City and City Alderman.

Summary of Liberty’s Steps to Verify Implementation

On September 19, 2016, Liberty met with management to discuss actions taken on this recommendation. Liberty requested and reviewed documentation to describe efforts to-date, including:

- Company/CDOT Meeting_1115 (T.1.1 Atch01)
- Company/CDOT Meeting 1215 (T.1.1 Atch02)
- Company/CDOT Meeting 0316 (T.1.1 Atch03)
- Beverly Phase 3 (T.1.3 Atch01)
- Beverly Phases 8 and 9 (T.1.3 Atch02)
- Beverly Phase 10 (T.1.3 Atch03)

Observed Conditions and Factors

CDOT has upgraded its permitting system (Hansen) and management has made most of the required changes to its AWP to accommodate CDOT changes. However, some of the new data fields have not been completely debugged (permit holds and extensions); management has implemented manual entry work-arounds until CDOT addresses the issues on its system. Management is manually updating several AWP fields (holds and extensions) until CDOT resolves the issues.

The IT group will implement a patch to the AWP system in July to integrate fully the restoration permitting data flow between Peoples Gas and CDOT. Until this patch has been completed and tested, a spreadsheet tracks restoration permit status.

Management has also centralized permitting under one manager, to improve permit coordination and tracking. The manager in charge of permitting has responsibility for the permitting tracking database and the monthly audit of permitting data quality. Management has conducted monthly data quality audits since December 2015. Liberty reviewed the results of these monthly audits (audit period December 2015 through April 2016) as well as the status of remediation efforts.

Implementation Complete and Satisfactory?

Yes, management has completed all Action Plan steps satisfactorily and provided the appropriate supporting documentation. Management has met the intent of this recommendation. It is therefore appropriate to close this recommendation.

Remaining Gaps, Needs

None.

PGL Position

The Company agrees that implementation is complete.

Future Liberty Verification Activities

During the first and second quarters of 2017, Liberty will review results from the October 2016 pilot as well as progress in 2017. Additionally, Liberty will review the level of complaints received from the City and City Alderman.

This is an ongoing process.

General Observations

None.

T.2 – CDOT Permit Reporting

Peoples Gas should expand the scope of AMRP project schedules to incorporate permitting requirements.

Chapter H: Schedule Planning addresses the lack of integration in AMRP project schedules, which have included only construction activities. Project scheduling needs to integrate permitting needs and requirements. A complex long-term project with many thousands of individual activities requires a sophisticated, integrated management control system that tracks individual component projects end to end. From a management control perspective, there is no bright line between phases such as planning, engineering and construction. Precursor activities in one phase often prove critical to the following phase. Permitting should not be considered a parallel activity, but an integral part of the end-to-end set of processes needed to effectively and efficiently manage AMRP projects. Permitting should form a central part of the scheduling process.

Underlying Conclusions

T.3 Peoples Gas methods for managing permit applications and compliance have not been adequate to meet the needs of the AMRP.

The City’s permitting function serves important public interests, and comprises a complex operation. Nobody makes more permit applications to the City than Peoples Gas does. Many parties request permits from the City for a variety of reasons. Applications range from nonrecurring, single applications by small contractors, to the thousands that Peoples Gas seeks annually.

One manifestation of this absence of a management tool is that important items get overlooked. A great many of the citations and associated fines issued by the City to Peoples Gas result from lack of or expired permits. Additionally, the permitting process does not link to project schedules.

PGL Action Plan Steps

Item #	Task	Status
1	Integration into single 2015 logic model	Complete
2	Prepare scheduling process procedure	Complete
3	Approve and issue scheduling process	Complete
4	Provide schedule for use	Complete
5	Document and incorporate process into schedule procedure	In Progress

Owing to a lack of input data, the engineering process, permitting process and closeout process components were removed from the “integrated” schedule for the 2014 construction year. Without these components, the 2014 “integrated” schedule was limited to summary activities, at the phase level, for construction. The 2014 model was the basis of the schedules in use by the Program at the time of Liberty’s Audit. Since the Liberty Audit in 2014, both the “integrated” and “construction” level schedules have been combined into a single project schedule, the "2015 logic model", containing engineering, procurement, permitting, construction, and closeout components.

This revised logic model was issued to the contractors for use on all projects initiated after July 1, 2015.

Since the beginning of 2016, management has undertaken a major effort to re-develop its scheduling process to manage AMRP scheduling master plan (Level 1), control schedule (Level 3), and detailed schedule (Level 5) more effectively. The team met with a consultant to discuss plans for the development and implementation of a cradle-to-grave scheduling process. Input was solicited from managers and personnel of all supporting groups of the Engineering, Pre-Construction and Construction phases. Scheduling methodology was thoroughly considered and established. Action steps to add and update Levels 1, 3 and 5 schedules were clearly delineated. Resource loading, variance analysis and reporting requirements were defined. All these details were documented in the Schedule Management Procedure, which was approved and issued as a draft on September 16, 2016.

Project-level schedules will enhance the ability to identify, interrelate, and define the schedule requirements of all essential activities from project selection to close-out. This will improve the project delivery teams' planning process and ensure the availability of adequate resources to support the projects on a timely basis. This new schedule template will provide project status visibility across the lifecycle of these projects. Implementation of the 2015 logic model will benefit AMRP by providing timely and actionable information for planning and tracking throughout the life of a project, and for AMRP as a whole.

Summary of Liberty's Steps to Verify Implementation

In the June 9, 2016 meeting with Liberty, management distributed the following documents for status reporting and discussion:

- Scheduling Process and Procedure development and review meeting notes
- PGL Schedule Management Procedure - Working Draft
- Level 1 & 3 Schedule Template Draft for user feedback
- Level 1 & 3 Schedule Template Narrative

On August 31, 2016, management conducted an on-line Liberty Scheduling Workshop and provided the following "Cradle-to-Grave" materials for discussions:

- Level 1 & 3 Logic Model
- Example Level 1 & 3 Schedule – Beverly PH13
- Sample Activity Detail Description
- Example Level 3 Schedule – Beverly

On September 19, 2016, Liberty met with management to discuss actions taken and review implementation progress. Liberty reviewed the following close-out documents:

- Final draft of the Scheduling Management Procedure, dated September 16, 2016
- Reconciliation Table – Comparison of the 22 activities in Liberty Recommendation and Logic Model Activities

Subsequent to this meeting, management provided the following two documents on September 21, 2016 for further review:

- Cost Estimating Procedure draft, dated August 25, 2016
- Scheduling Process Training Plan, dated September 6, 2016

Management considers the following deliverable as closeout components:

- 2015 logic model schedules

PGL will deem this recommendation complete when: (a) projects initiated after July 1, 2015 include a 2015 logic model schedule; (b) the procedures required for development of the 2015 logic model schedules are approved and published; and (c) all managers have been informed of their role in the process including management's expectations for their compliance.

Observed Conditions and Factors

The design of the Level 1 & 3 Logic Model is clear and comprehensive. The sample provided displays adequate details regarding the activities and milestones, as well as identifying key handoffs and notification points. The Level 1 & 3 Schedule Template Narrative further describes all the supporting tasks behind each schedule activity.

The Schedule Management Procedure is approved and in use, requiring all future projects to implement this process, including resource loading and variance analysis.

The Scheduling Process Training Plan has also been developed to train Project Controls analysts, schedulers, project managers, and managers from Engineering, Contract Services, Construction, and Construction Planning. The training materials will cover scheduling process, schedule preparation, cost estimating, resource loading, quantity collection, variance analysis, reporting, and forecasting. This training is expected to be completed in the fourth quarter of 2016.

Liberty concurs that the above elements will ensure the AMRP scheduling functions operate effectively.

Implementation Complete and Satisfactory?

Yes. The enhanced Schedule Management Procedure is active. Integrated schedules are being produced for new projects. All associated personnel are scheduled to be formally trained. We therefore consider this recommendation closed.

Remaining Gaps, Needs

PGL needs to complete the scheduling process training for all the users and supporters of the AMRP project schedules.

PGL Position

The Company agrees that the recommendation has been implemented.

Future Liberty Verification Activities

During the first and second quarter of 2017, Liberty will review a list of projects initiated after July 1, 2015 to ensure they all utilize the logic model schedule and appropriately address permitting.

General Observations

None.

U.4 –Complaints Group Resourcing and Performance Monitoring

Peoples Gas should adequately resource the AMRP Complaints Handling Group, and should monitor complaint resolution performance and the root causes of customer complaints, for the purpose of identifying improvement opportunities.

The Construction Complaints group has insufficient staffing, considering the current volume of pending and active complaints. The group needs additional manpower to open and assign complaints. The Company should contact customers within 24 to 48 hours to acknowledge receipt of the complaint. Additionally, management should monitor complaint resolution to ensure proper investigation of issues and effective resolution by the responsible organizations. Peoples Gas should address this problem as soon as possible.

Peoples Gas should investigate the root cause of AMRP-related customer complaints, and complaints from other stakeholders. These root cause analyses should drive improvement in policy, procedure, protocol, and communication.

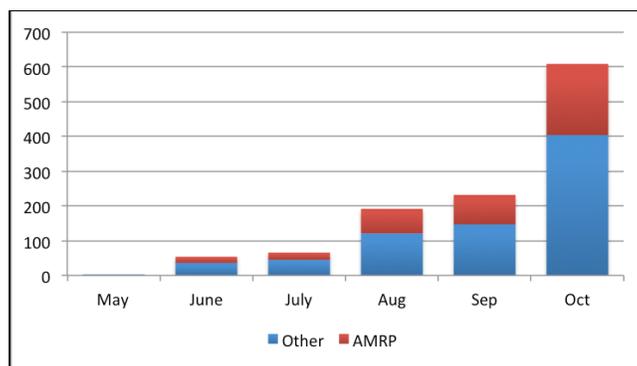
Underlying Conclusions

U.6 Peoples Gas’ AMRP complaint handling group is overwhelmed by the volume of complaints.

Peoples Gas established the Construction Complaints group (reporting to the Division Street Radio Room in Gas Operations) in 2012 to coordinate complaint resolution. Currently, this group has insufficient staff to handle the volume of complaints received. Peoples Gas policy stipulates that customers will be contacted within 24 to 48 hours of their complaints, in order to gather as much information as possible about the situation. However, the Construction Complaints Team has not met this goal.

As of October 31, 2014, 400 AMRP-related complaints remained pending. Peoples Gas received some of them in June 2014. The Company reports that those numbers have fallen by about half since then. The Construction Complaints group handles all construction complaints, including those related to the AMRP. A large number experience significant delay in being assigned for handling. Some customers who voiced complaints in June 2014 have not yet heard from a Peoples Gas complaint-handling representative.

Figure U.2: Unopened Construction Complaints (Awaiting Assignments)



A complaint may take weeks or months to resolve, depending upon its nature. As of last fall, it had taken an average of 103 days to resolve complaints. The Company reports that this duration has since fallen to 68 days. The pace of assignment and resolution is still unacceptable.

PGL Action Plan Steps

Item	Task	Due Date
1	Create and implement a new organizational structure with adequate resources for monitoring and resolving all PGL/NSG customer complaints	Complete
2	Appoint full time leaders and resources to the Customer Effectiveness team	Complete
3	Appoint full time Construction Support for Customer Effectiveness team	Complete
4	Appoint full time O&M Support for Customer Effectiveness team	Complete
5	Evaluate the current customer complaint resolution process and design a new desired state with process efficiencies, consistency and adequate information/communication with the customer	In progress – Q3 2016
6	Document procedures for complaint resolution, including roles and responsibilities as well as reporting protocols for field support (Construction-Complete)	Complete
7	Evaluate and implement a central process or system to provide for better data analysis and oversight of all customer complaints regardless of how received or what activity it relates to	Complete
8	Organize a Cross Functional Task Force to resolve the Customer Complaint Backlog	Complete
9	Address all backlogged customer complaints	Complete
10	Communicate to customers for all 2015 carryover complaints due to restoration/weather	Complete
11	Close all remaining 2015 carryover customer complaints	Complete
12	Review effectiveness of field support organization as it relates to prompt resolution of customer complaints and ability to develop trend analysis and determine root cause	Complete
13	Develop metrics and continually reevaluate to ensure continuous improvement	Q1 2016; repeated at least annually

Expected Post-Implementation Conditions and Factors

Liberty would expect to see a fully-staffed organization operating under clear procedures, producing sustained, substantial reductions in complaint resolution time, detailed tracking of complaint sources, numbers, nature, and resolution times, and a focus on identifying and addressing the root causes of any adverse trends.

Summary of Liberty’s Steps to Verify Implementation

On March 30, 2016, Liberty met with the Manager of Customer Effectiveness to discuss actions taken and to review implementation progress. Liberty requested and reviewed documentation, including:

- Proposed PGL Field Complaints Dashboard
- Customer Letters addressing upcoming restoration (for outstanding complaints)

- PGL Field Complaints Backlog Status Dashboard
- Construction Complaints process (future).

On June 8, 2016, Liberty met with the Vice President of Customer Service to discuss actions taken and review implementation progress. Liberty discussed and reviewed deliverables for each task, including:

- Customer Effectiveness Organization Chart (U.4.8 Atch01).
- PGL Field Complaint Backlog Dashboard (U.4.9 Atch01).
- 2015 Backlog Restoration Letter (U.4.10 Atch01).
- Spring 2016 Restoration Letter (U.4.10 Atch02).
- PGL Complaints Dashboard (U.4.13 Atch01).
- AMRP Construction & Communications Process (U.3.2 Atch01).
- Customer Talking Points for Pilot Program (U.3.2 Atch02).
- PGL Daily We Care Report (U.3.2 Atch03)

Following the meeting in early June, management provided a copy of the “Complaint Design Document” which describes initial ideas for a central complaint repository.

On September 20, 2016 Liberty met with management to discuss actions taken since the last onsite review and to review implementation progress. Management had made no further progress on the implementation of this recommendation. Management indicated that other priorities had precluded work on this recommendation.

Observed Conditions and Factors

In the fall of 2015, management established a team to address the backlog of customer complaints. Liberty discussed changes in employee ability to resolve small claims. The Company has finally resolved the 2015 complaint backlog during the first week of September 2016.

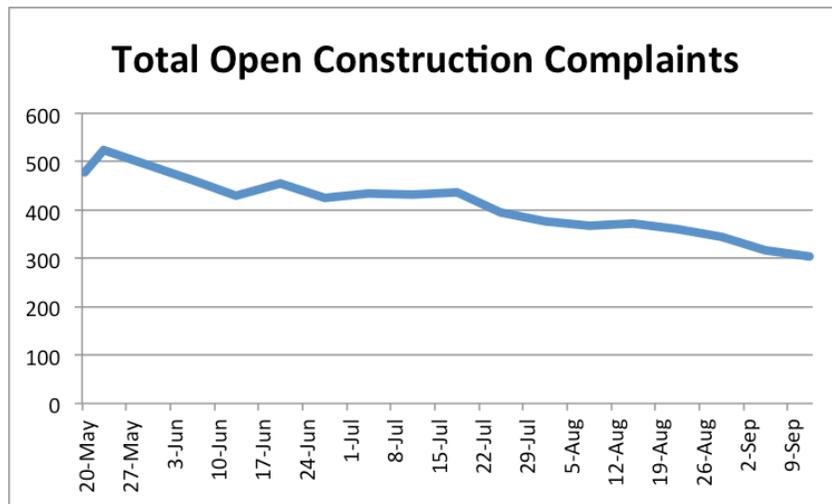
Management has three dedicated resources in place within Construction to deal with complaints. Additionally, management also hired three Customer Service Managers and three Customer Service Supervisors within the Operations & Maintenance groups. In total, nine individuals are expected to handle and resolve AMRP or Construction-related complaints. Restoration complaints are handled by the Customer Effectiveness organization.

PGL created the Customer Effectiveness organization to monitor complaints (Company-wide) and ensure proper resolution. Customer Effectiveness reports to PGL Strategy & Performance, which reports directly to the utility President.

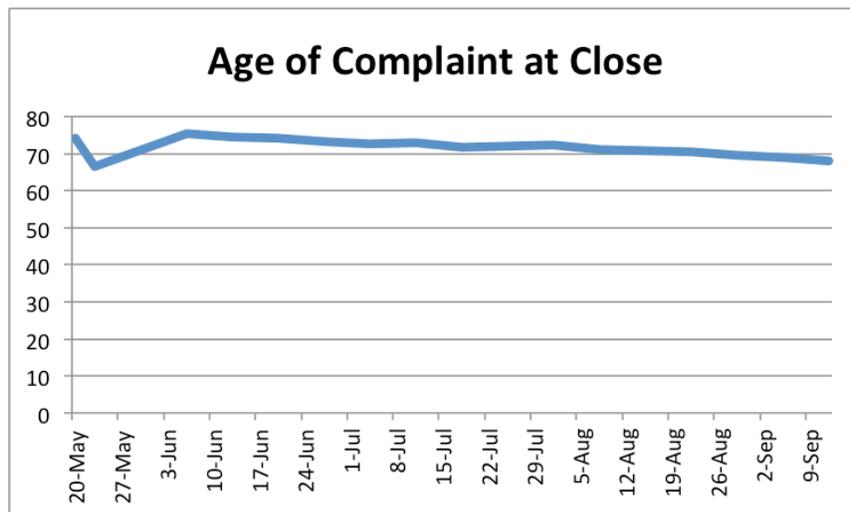
Management has charged Customer Effectiveness to make sure the “voice of the customer” is heard throughout the utility. In addition to managing customer complaints, Customer Effectiveness administers the “We Care” customer satisfaction initiative, and holds weekly “dissatisfied meetings” to discuss We Care results with all business units. We Care now surveys customers who have had a meter marking appointment, a meter moved, or restoration as part of AMRP to better

understand satisfaction/dissatisfaction with these processes. Currently, the weekly We Care Dissatisfied Customers meeting does not discuss Construction Complaints.

However, complaint resolution progress has been slow. Peoples Gas continues to experience a backlog of complaints (304) and the average time to resolve a complaint is 68 days. The following chart exhibits PGL’s complaint backlog from May 23, 2016 through September 18, 2016. PGL has slowly reduced the backlog of unresolved complaints from 525 (week of May 23, 2016) to 304 (week of September 18, 2016). At this rate of progress, backlog should be less than 100 complaints by the end of January 2017. Management should strive to resolve all 2016 complaints before year-end 2016.



However, the average age of the complaints at closure is 68 days. This is not acceptable. PGL should strive to resolve complaints in 30 days or less; 2.5 months to resolve a construction complaint is too long. During our meeting in September, management indicated the goal was to resolve complaints within 30 days. The following chart depicts the average age of complaints at closure. Since May 2016, management has not made significant progress on reducing the average age of a closed complaint.



Customer Effectiveness has set up a SharePoint site as a central repository for customer complaints received through the We Care Program, Construction, AMRP, Customer Claims, ICC, and the Customer Contact Center. PGL is still developing the SharePoint site to gather customer feedback and input. Additionally, the Customer Effectiveness Group is in the process of designing a methodology to conduct root cause analysis of the central complaint repository. However, design work is in the early stages and management has yet to settle on the tools to conduct the analysis and reporting and how the organization will use this information to improve operations.

Implementation Complete and Satisfactory?

No, Liberty does not concur with the Company's request to close this recommendation. PGL continues to experience a backlog of complaints (304) and the average time to resolve a complaint is 68 days, more than double management's stated goal of 30 days or less. The year-to-date average of 68 days includes 2015 and 2016 closed complaints; PGL resolved all outstanding 2015 complaints at the end of August 2016. For complaints received within the last six months, management indicates that the average resolution time is tracking closer to goal. Management has not fully completed activities on this recommendation, the complaint resolution, tracking, root cause analysis and reporting have not been fully defined nor implemented.

Remaining Gaps, Needs

PGL's complaint resolution process is not fully defined or operational.

PGL Position

The Company has requested closure this recommendation.

Future Liberty Verification Activities

Implementation validation will proceed following the completion of this recommendation.

General Observations

None.

U.5 – Customer Satisfaction with AMRP

Peoples Gas should measure on a regular basis: (a) customer satisfaction with AMRP, and (b) the effectiveness of AMRP Communications and Customer Service.

Peoples Gas should begin measuring customer satisfaction with the AMRP process. An AMRP project can extend over weeks and months. Peoples Gas should measure satisfaction for individual components of the process, such as customer letters, program information, website, appointment setting, service marking, service installation, meter installation, and restoration.

Peoples Gas should measure and track satisfaction with program components to identify opportunities to improve the customer experience and internal policies and procedures.

In order to measure the effectiveness of AMRP Communications and Customer Service, Peoples Gas needs to identify and routinely chart performance against specific metrics. These metrics should include, but not be limited to, customer satisfaction, complaints per customer, missed or late appointments (by Peoples Gas), average time to respond to inquiries and complaints, and time to resolve complaints. Performance should be trended and reported along with other Project Management Office metrics on a weekly or monthly basis throughout the life of the program.

Underlying Conclusions

U.7 Peoples Gas does not measure the AMRP customer experience.

Peoples Gas routinely measures transactional customer service, both in the Contact Center and in the field. The Company also participates in the JD Power and Associates Residential Customer Satisfaction program. However, the Company does not, specifically track customer satisfaction with AMRP-related work.

Peoples Gas attempted to measure satisfaction with AMRP very early in the program. It discontinued measurement, citing difficulties due to the length of the AMRP customer experience. Months can pass between construction and restoration. Peoples Gas is not measuring customer satisfaction with the AMRP program.

PGL Action Plan Steps

Item	Task	Due Date
1	Begin making calls to customers who have had an AMRP Service Marking Appointment	Completed/Ongoing
2	Begin making calls to customers who have had an AMRP Meter Move Appointment*	Completed/Ongoing
3	Begin analysis to track trends, investigate them and put process improvements in place.	Completed/Ongoing
4	Formalize and report meaningful metrics that measure customer satisfaction; continually update	Completed/Ongoing
5	Track, separate out, measure and report on AMRP specific complaints pertaining to appointments and scheduling	Completed/Ongoing
6	Begin making calls to customers who have had their property restored as part of AMRP	Completed/Ongoing

Expected Post-Implementation Conditions and Factors

Liberty would expect to see clear procedures defining the measurement, analysis, and reporting customer satisfaction with AMRP and the effectiveness of AMRP communications and customer service.

Summary of Liberty's Steps to Verify Implementation

On June 8, 2016, Liberty met with the Vice President of Customer Service to discuss actions taken and to review implementation progress. Liberty discussed and reviewed the PGL Daily We Care Report (U.5.2 Atch01 and Atch02). Following the onsite meeting, PGL provided a sample report of Customer Dissatisfaction Root/Cause analysis of We Care results.

On September 20, 2016 Liberty met with PGL to discuss progress on this recommendation. Since our last meeting, PGL has begun surveying homeowners about their AMRP restoration experience. To date, PGL has surveyed about a dozen homeowners and has begun to accumulate the results in a SharePoint site for reporting. PGL expects to be in production with reporting by the end of September. Liberty also reviewed the script that PGL provides employees who call to survey customers about their AMRP restoration experience.

Observed Conditions and Factors

The Customer Effectiveness organization has responsibility for the monitoring and oversight of PGL customer satisfaction. Customer Effectiveness reports to PGL Strategy & Performance, which reports directly to the utility President. Customer Effectiveness administers the “We Care” customer satisfaction initiative and holds weekly “dissatisfied meetings” to discuss We Care results with all business units. We Care currently surveys customers who have had a meter marking appointment, a meter moved, and now restoration as part of AMRP to better understand satisfaction/dissatisfaction with that process.

The We Care program began surveying satisfaction with AMRP service marking last fall. During 1Q 2016, We Care began surveying customer satisfaction with AMRP-related meter moves. PGL began surveying customers regarding satisfaction with AMRP restoration efforts in September.

Implementation Complete and Satisfactory?

Yes, Liberty concurs with the Company's request to close this recommendation.

Remaining Gaps, Needs

None.

PGL Position

The Company has requested to close this recommendation.

Future Liberty Verification Activities

Liberty will review We Care customer satisfaction results during the first and second quarters of 2017 to verify that PGL continues to monitor the AMRP customer experience.

General Observations

None.

Appendix A: Recommendation Status

Rec. #	Recommendation	Previous Status	Current Status
C.1	Peoples Gas should include as an element of the neighborhood work planning process an evaluation of the merits of taking an exception to the double decking approach	Plan Accepted	
C.2	Peoples Gas should more thoroughly study and report on the causes of extremely high reports of contactor damage incidents	Plan Accepted	Accepted/ Closed
C.3	Peoples Gas should undertake measures to verify the operability of external service shutoff valves	Plan Accepted	Accepted/ Closed
C.4	Peoples Gas should examine the ability to address low pressure and single-contingency outage risks in the neighborhood program	Plan Accepted	Accepted/ Closed
C.5	Peoples Gas should test both services and mains to 100 psig	Plan Accepted	Accepted/ Closed
C.6	Analyze and report on the precise nature and numbers of corrosion leaks, and determine whether protected and coated steel mains are experiencing corrosion leaks	Plan Accepted	Accepted/ Closed
D.1	As part of the new planning effort now underway, Peoples Gas should provide a clear and unambiguous description of the AMRP, including quantities for all parameters important to management of the project	Plan Accepted	Accepted/ Closed
D.2	Peoples Gas should accompany regularly reported performance data with insightful analysis in order to make the data immediately meaningful to management oversight and supportive of timely and responsive improvement and corrective initiatives and activities	Plan Accepted	
D.3	Peoples Gas should provide a realistic schedule assessment based on an effective program plan	Plan Accepted	
D.4	Peoples Gas should prepare a soundly derived, detailed resource plan and provide for full coordination between the annual budget and resulting resource requirements	Plan Accepted	In Progress
D.5	In light of apparent decreases in productivity, Peoples Gas should promptly complete an analysis of productivity associated with the installation of meters	Deleted	Deleted
D.6	Peoples Gas should promptly complete a new program cost estimate consistent with good estimating practices	Plan Accepted	Accepted/ Closed
E.1	Peoples Gas should complete a full replacement of the plan for management (the project execution plan) addressing all key elements of AMRP management and control	Plan Accepted	Accepted/ Closed

E.2	Current developmental plans for a new Project Execution Plan should specifically address prior failures and how they will be avoided in the new plan	Plan Accepted	Accepted/ Closed
E.3	Peoples Gas should prepare a long-term AMRP management resource plan that specifically addresses (a) requisite skills needed both on an immediate and on a longer term basis; (b) current gaps in internal capabilities; (c) the optimum balance of owner versus contractor personnel; (d) acquisition and development of resources; and (e) succession plans	Plan Accepted	
E.4	Peoples Gas should move toward a project organization that makes significantly more use of dedicated resources under a strong project manager approach	Closed	Rejected/ Closed
E.5	Peoples Gas should prepare a specification for a new program management function, correcting the weaknesses in the current process	Plan Accepted	Accepted/ Closed
E.6	Peoples Gas should assign a project manager to most, if not all, AMRP neighborhood projects	Plan Accepted	Partially Rejected/ Closed
F.1	Peoples Gas should develop, staff, and implement a data quality control program	Plan Accepted	
F.2	Peoples Gas should develop a database of the soils data already collected and populate it further with soils data taken at all new excavations	Plan Accepted	Accepted/ Closed
F.3	Peoples Gas should conduct a structured study of alternative criteria and weightings for the Main Ranking Index and for the neighborhood approach	Plan Accepted	Accepted/ Closed
F.4	Should Peoples Gas not change the current criteria and weightings, then the utility should develop additional measures to reduce leak rates further	Deleted	Deleted
F.5	Peoples Gas should determine on a system, segment and neighborhood basis the level of acceptable risk and metrics that will support appropriate adjustments in replacement rates	Plan Accepted	Accepted/ Closed
F.6	Peoples Gas should develop a cost model that addresses O&M costs associated with AMRP and related work	Plan Accepted	
G.1	Peoples Gas should develop a new Cost Plan Model that includes comprehensive measurement bases and critical assumptions regarding scope, quantities, productivity, labor costs, unit costs, and regulatory requirements; a reserve should be included as part of the overall program costs	Plan Accepted	
G.2	Peoples Gas should establish a Cost Trend Program to monitor potential, major cost-affecting items	Plan Accepted	
H.1	Peoples Gas should develop a Scheduling Master Plan	Plan Accepted	Accepted/ Closed

H.2	Peoples Gas should develop a complete project schedule for every new project, and it should address all aspects of the work required, from engineering to construction and through completion	Plan Accepted	Accepted/ Closed
H.3	Peoples Gas should resource-load schedules to address all physical work resources (including internal workforce and contractors) and construction inspectors	Plan Accepted	Accepted/ Closed
H.4	Peoples Gas should regularly perform schedule variance analyses to identify recurring or systemic issues, and plan corrective actions	Plan Accepted	Accepted/ Closed
H.5	Peoples Gas should complete promptly its efforts to ensure that construction schedules become quantity-based for both the internal workforce and the contractors	Plan Accepted	Accepted/ Closed
I.1	Peoples Gas should develop a long-term resource staffing plan that reflects the numbers, skills, and experience needs of all key positions	Merged	Merged
I.2	Peoples Gas should develop the in-house capability to replace gas main and install services on a larger and more long-term basis	Plan Accepted	
I.3	Peoples Gas should act immediately to address the need for sufficient internal resources to perform back end AMRP work as planned and scheduled	Plan Accepted	
I.4	Peoples Gas should bring enhanced productivity measurement and management to resource planning	Plan Accepted	
I.5	Peoples Gas should more closely monitor contractor resources and production	Plan Accepted	
I.6	Peoples Gas should establish a centralized resource planning group or function	Plan Accepted	
I.7	Peoples Gas should evaluate regularly the performance (e.g., wage rates, quality, productivity, expertise, safety, dependability) between the internal and external workforce	Plan Accepted	
J.1	AMRP management should promptly design and implement a two-pronged scope control process: (a) at the program level, and (b) at the individual project level	Plan Accepted	In Progress
K.1	Peoples Gas should establish a cost estimating capability by formulating a clearly communicated cost estimating philosophy, formalizing a cost estimating process, preparing procedures, and developing effective tools	Plan Accepted	
K.2	Peoples Gas should maintain and keep updated a set of historical databases that address cost estimating variables	Plan Accepted	
K.3	Peoples Gas should perform project cost estimate reconciliations to understand major cost deviations, analyze performance and document lessons learned	Plan Accepted	

K.4	Peoples Gas should expand the development of cost estimates at the individual project level and at the program level	Deleted	Deleted
K.5	Peoples Gas should establish a centralized cost estimating organization to maintain and sharpen the cost estimating skills	Plan Accepted	
L.1	Peoples Gas should implement a holistic cost management program	Plan Accepted	
L.2	Peoples Gas should establish a structured, well defined approach to managing AMRP costs at three levels: the long-term total program outlook, the individual project level, and the annual budget view	Plan Accepted	
L.3	Peoples Gas should define appropriate roles for cost management professionals, including all activities, responsibilities, and accountabilities important to holistic cost management	Plan Accepted	
L.4	Peoples Gas should establish a cost support organization that: (a) resides organizationally at a level and in a place consistent with treating cost management as a high program priority, (b) serves the cost management needs of all levels of management, (c) develops a force of skilled cost professionals and assures those skills are continuously improved, and (d) has overall accountability for the development and implementation of the cost management program	Plan Accepted	Accepted/ Closed
L.5	Peoples Gas should provide training for managers, supervisors and cost support personnel in cost management techniques consistent with the holistic approach	Plan Accepted	
L.6	Peoples Gas should continue aggressively to pursue the recommendations made by Liberty in discussions leading to the interim report	Deleted	Deleted
M.1	Peoples should develop a formal strategy that assures the Company gets above-average terms and below-average pricing in view of the long-term opportunities afforded by the AMRP	Plan Accepted	Accepted/ Closed
M.2	Peoples Gas should regularly include in program monthly reports information showing procurement fulfillment and past due rates	Plan Accepted	Accepted/ Closed
M.3	Peoples Gas should develop a formal strategy that assures the Company gets optimum terms and pricing in view of the long-term opportunities afforded to contractors by the AMRP	Merged	Merged
M.4	Peoples Gas should determine those contract administration tasks that it considers required, and assure that the Program Management Office executes those tasks	Plan Accepted	Accepted/ Closed
M.5	Peoples Gas should apply a program of enhanced management oversight to the contract change process	Plan Accepted	Accepted/ Closed
M.6	The Program Management Office should implement enhanced analysis of its results in managing contract changes	Plan Accepted	Accepted/ Closed

M.7	The Supply Chain and Program Management organizations should require contractors to provide key data that supports their plans and bids	Plan Accepted	Accepted/ Closed
M.8	The Program Management Office should link the results of its contractor evaluation program to future bid evaluations and awards	Plan Accepted	Accepted/ Closed
N.1	Peoples Gas should clearly define and document the AMRP governance roles of the Executive Steering Committee with mission statements, charters, and roles and responsibilities for project oversight, monitoring and decision authority	Plan Accepted	
N.2	Peoples Gas should promptly execute its current plans to provide for more regular and effective oversight of AMRP and for follow-through and corrective actions to address performance shortfalls	Plan Accepted	
N.3	Peoples Gas should substantially enhance the completeness and accuracy of AMRP performance information provided to the boards of directors, and ensure its consistency with information used by AMRP program management and provided to the small executive group with designated responsibility for program oversight	Plan Accepted	Accepted/ Closed
N.4	Peoples Gas should expand top-level AMRP performance metrics and reports to include more actionable information, and to compare actual performance with plans and budgets meaningfully	Plan Accepted	Partially Rejected/ Closed
N.5	Peoples Gas should upgrade AMRP performance metrics to include annual or cumulative progress versus the long-term (20-year) plan goals and metrics for the executive oversight group and the boards	Plan Accepted	In Progress
N.6	Peoples Gas should employ outside assistance in designing and implementing the initiatives it committed to undertaking to improve AMRP management, control, and oversight	Closed	Rejected/ Closed
O.1	The AMRP Program Management Office should overhaul its approach to reporting, with emphasis on defining and meeting the needs of managers and staff	Plan Accepted	Accepted/ Closed
O.2	Management should establish a framework for performance improvement based on analysis of project performance and corrective actions	Plan Accepted	Accepted/ Closed
O.3	In the course of its current improvement initiatives, Peoples Gas should redefine and reestablish its standards for program performance	Plan Accepted	Accepted/ Closed
O.4	Program Management Organization should establish a culture and a regular, defined, comprehensive program that provides insightful analysis of program performance, and should acquire the capability to perform such analyses	Plan Accepted	Accepted/ Closed

O.5	Peoples Gas should expand the role of its project controls professionals to allow for more analysis of project progress and performance and, in turn, support of management by facilitating corrective action	Plan Accepted	Accepted/ Closed
P.1	Peoples Gas should conduct a comprehensive assessment of AMRP risks associated with potential mismatches between work performed and work charged, and develop an ongoing program of annual testing designed to mitigate the risks identified	Plan Accepted	
P.2	Peoples Gas should provide for dedicated, executive level sponsorship of the three-year materials and equipment control initiatives program and provide a regular method of reporting progress to the Illinois Commerce Commission	Plan Accepted	Accepted/ Closed
P.3	Peoples Gas should promptly: (a) correct the gap that exists with respect to ensuring the accuracy of material and equipment costs charged to the AMRP, (b) develop a method for reliably and accurately determining independently the magnitude of error in AMRP material and equipment costs being included in rate recovery, and (c) devise and implement a similarly independent testing program to verify that no material risk of similar error exists with respect to AMRP costs subject to rate recovery	Plan Accepted	
Q.1	Peoples Gas should address a number of construction standards and should enhance training, documentation, and auditing in a number of areas related to construction standards	Plan Accepted	
Q.2	Peoples Gas should adopt measures to ensure consistent use of construction inspection checklists, develop a structured program for analyzing the information they produce to identify and respond to field performance issues disclosed, and clearly empower inspectors to halt unsafe work	Plan Accepted	
Q.3	Peoples Gas needs promptly to conduct short-term and long-term analyses of its requirements for skilled and experienced field resources, develop incentives for moving personnel into new positions and incenting senior workers to remain, and ensure that training and development efforts anticipate (and not merely react to) vacancies	Plan Accepted	
Q.4	Identify and pursue means to increase the stability in and the numbers of field supervision and inspection personnel	Plan Accepted	
Q.5	Clarify responsibilities for key field roles and institute training programs to support them more fully	Plan Accepted	
Q.6	Peoples Gas should examine the benefits of equipping technicians with sub-meters accurate GPS devices in areas that have lines of sight to satellites	Plan Accepted	Accepted/ Closed
R.1	Peoples Gas should establish a formal continuous improvement program under the Impact Team to promote a culture of and an emphasis on seeking innovations to improve efficiency in the installation of mains, services, and meters	Plan Accepted	Accepted/ Closed

R.2	Peoples Gas should assign a project control engineer or cost analyst to each of the three Shops to handle the analysis of all AMRP construction work performed by the internal workforce and contractors	Closed	Partially Rejected/ Closed
R.3	Peoples Gas should assign a single manager to coordinate AMRP-level permitting improvement initiatives and to monitor and measure permitting for the duration of the program	Plan Accepted	Accepted/ Closed
S.1	Peoples Gas should invigorate the commitment to safety and permit compliance through the designation of an executive level “champion,” and institute a comprehensive communications program, set aggressive goals and performance targets, perform regular measurement, perform root cause analysis, and develop responsive action plans	Plan Accepted	Accepted/ Closed
S.2	Peoples Gas should more closely examine the root causes and develop a responsive action plan to improve employee accident rates	Plan Accepted	Accepted/ Closed
T.1	Peoples Gas needs to continue to focus on improving communications and relationships with the City and with its Department of Transportation, but must recognize that it will take improved permitting and work performance to create and sustain relationships at the level needed to optimize AMRP performance	Plan Accepted	Accepted/ Closed
T.2	Peoples Gas should expand the scope of AMRP project schedules to incorporate permitting requirements	Plan Accepted	Accepted/ Closed
T.3	Peoples Gas should develop a database of permit applications	Plan Accepted	Accepted/ Closed
T.4	Peoples Gas should work with the Chicago Department of Transportation to determine which existing and potential reports from the Department’s system are available and which could be provided to Peoples Gas	Plan Accepted	Accepted/ Closed
T.5	Peoples Gas should improve the database of rail crossing permits	Plan Accepted	Accepted/ Closed
T.6	Peoples Gas should improve its database of citations	Plan Accepted	Accepted/ Closed
U.1	Peoples Gas should alter the AMRP Communications Plan	Plan Accepted	
U.2	Peoples Gas should standardize the process to set AMRP customer appointments	Plan Accepted	In Progress
U.3	Peoples Gas should ensure that the Customer Information System fully supports AMRP communications processes	Plan Accepted	Accepted/ Closed
U.4	Peoples Gas should adequately resource the AMRP Complaints Handling Group, and should monitor complaint resolution performance and the root causes of customer complaints, for the purpose of identifying improvement opportunities	Plan Accepted	In Progress

U.5	Peoples Gas should measure on a regular basis: (a) customer satisfaction with AMRP, and (b) the effectiveness of AMRP Communications and Customer Service	Plan Accepted	Accepted/ Closed
V.1	Peoples Gas should work promptly to identify the AMRP reporting changes that it proposed to implement near term, and tailor them to meet the reporting cycles and content this chapter describes as appropriate for supporting the monitoring needs of the Illinois Commerce Commission	Deleted	Deleted