Docket No. 14-0496

ICC Staff Exhibit 2.0

Attachment 2

Internal Audit Services

# 2011 Consultative AMRP Program Management Risk Assessment (#2011-2007)

September 7, 2012

## Distribution

| | | |
|---|---|---|
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## Executive Summary

### Audit Summary:

Internal Audit Services engaged PricewaterhouseCoopers LLP ("PwC") to perform a follow-up review of the Peoples Gas Light and Coke Company's ("PGL") Accelerated Main Replacement Project ("AMRP" or "Program") to assess progress on the implementation of the high risk process improvements identified in their original consultative report *"AMRP Start-up – Consultative Review of Governance and Controls (#2010-2000)."* PwC was also engaged to assess the Program's processes and procedures related to the "construction to close-out" phase of any of the individual projects. Since 2011 was the first official year of AMRP construction, the "construction to close-out phase" had not been developed at the time of PwC's original consultative review. PwC performed their fieldwork during September through November 2011, approximately six months after initiation of the first year of AMRP construction activity and Internal Audit Services performed follow-up fieldwork supporting the "construction to close-out phase" of the Program in February through April 2012.

PwC's observations and recommendations for strengthening the AMRP control environment were based on their comparison of leading practices employed on well-managed major construction and engineering programs in both the Utility and other sectors including oil and gas, transportation and infrastructure replacement programs.

PwC provided observations and associated recommendations in the following areas:

- Program Delivery Organization
- Project Scoping Process
- Project Permitting Process
- Services Scope and Installation
- Project Scope Change Process
- Schedule Management
- Quality Organization and Procedures
- Contractor / Vendor Quality Management
- Field Inspections
- As-Built Drawings and Tickets
- Cost Management - Estimating and Budgeting
- Cost Management - Cost Collection
- Cost Management - Cost Control
- Cost Management - Contingency
- Workforce Planning
- Material Planning and Reconciliation
- Risk Management Process

### Conclusion:

In our opinion, the review included a thorough assessment of the Program, identified key areas of risk, and provided appropriate recommendations for improvement. A few of the key issues noted by PwC at the time of the review were:

- 90 miles of pipe had been installed but only 15 miles had been recorded in PGL's systems,
- Many processes pertaining to the "construction to close-out" phase of the Program had not yet been fully developed, with invoice processing and the property accounting close-out processes significantly lagging behind construction activity; and

- Reconcilement of materials used versus delivered had not occurred.

Overall, we observed steady progress by the AMRP team throughout 2011 and 2012 in addressing PwC's recommendations from the initial consultative start-up assessment. In addition, the AMRP team has demonstrated substantial progress in addressing the recommendations included in this follow-up assessment and consultative review, as 26 of 36 recommendations presented have been implemented as of September 7, 2012. Progress has been made on the remaining 10 recommendations. Eight are scheduled for completion by October 31, 2012. The remaining two, are scheduled to be completed by December 31, 2012 due to assistance needed from multiple business areas. We believe that completing all of the recommendations presented in this report will improve the overall quality, efficiency, effectiveness and control of the Program.

PwC also provided the AMRP team with a series of suggestions for possible additional process improvements that are not included in the body of this report. Since these suggestions were only intended to be comparisons of the AMRP team's processes against "leading practices," formal ownership, tracking and resolution of them by the AMRP team is not required.

On September 30, 2011, the First Judicial District of the Illinois Appellate Court reversed the Illinois Commerce Commission's (ICC) order approving the infrastructure cost recovery rider (Rider ICR) for PGL. Rider ICR is a regulatory tool that recovers PGL's costs associated with the AMRP project. In their decision, the First District Appellate Court found that Rider ICR constituted single-issue ratemaking that was "not adequately justified by special circumstances." On June 27, 2012, the ICC accepted PGL's proposal to refund approximately $2.34 million to current and certain former PGL customers.

Although Rider ICR has been overturned, our review and the recommendations in this report are geared to increasing control and governance over a major construction infrastructure project. PGL will continue recovering its costs under normal rate case process for the 2012 and 2013 construction years thus justifying the continued review and refinement of the AMRP process so that costs can be assumed to be prudent and reasonable.

**Appendix A**

**PricewaterhouseCoopers LLP Report**

# 2011 Consultative AMRP Program Risk Management Assessment

**November 2011**

**CONFIDENTIAL**

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# 1.0 Executive Summary

## 1.1 Overview

The Internal Audit Services Department of Integrys Energy Group Inc. (Integrys) engaged PricewaterhouseCoopers (PwC) to perform certain services in relation to The Peoples Gas Light and Coke Company's (PGL) Accelerated Main Replacement Project (AMRP or Program).

The scope of this second assessment was to further assess areas of high risk we identified in the baseline assessment and areas of risk relevant to the "construction to close out" phase of the Program and Project lifecycle. The scope of the AMRP assessment was discussed and agreed upon with Willard S. Evans Jr., President PGL, and William E. Morrow, Vice President Gas Engineering on Thursday, September 1, 2011. A summary of the assessment scope is as follows:

- Organization and Governance - Assess organization structure and staffing. Determine if the Project Management Office (PMO), Quality, Controls, Construction Oversight, and Operations teams are optimized. Assess Executive Steering Committee's mandate and involvement with the AMRP. Assess the PMO transition plan and provide comments.
- Procedures and Plans - Assess progress towards the development and implementation of all key project management procedures and plans in addition to the program management team's compliance with plans. Assess permitting management procedures in place and confirm the cause and effect of permitting issues being experienced.
- Procurement and Contracts - Assess contract administration procedures associated with active contracts / contracts awarded to date.
- Scope and Change Control - Assess AMRP project scope documentation including annual scope confirmation / selection and estimating / budgeting process. Assess the AMRP Work Breakdown Structure (WBS) and how this aligns with cost and schedule management procedures. Assess effectiveness of contractor scope change control process and procedures including Request for Information (RFIs), change proposals, and approvals, etc.
- Cost Management - Assess processes and procedures in place to validate that all costs recovered under the Infrastructure Cost Recovery Rider (ICR or Rider) comply with Section I of Rider. Assess cost audits performed to date and audit plans associated with Rider compliance. Assess PMO cost controls including validation of contractor applications for payment, including contractor cost categorization, and cost performance reporting. Assess metrics associated with the AMRP baseline plans (cost, schedule, scope) versus actual installs and retirements and assess forecasts.
- Schedule Management and Control - Assess AMRP schedule management and control processes including the integration of contractor schedules.
- Issues and Risk Management - Assess issues and risk management procedures implemented on the AMRP.
- Communication and Reporting - Assess customer communication strategy, process and procedure development and implementation. Assess quality and effectiveness of PMO reporting.
- Quality and Inspection - Assess adequacy of field quality control procedures.
- Documentation - Assess AMRP documentation system and data quality in key program management areas including scope, cost, schedule, quality, construction drawings, As-Built drawings and other field records etc.

This engagement was executed by Jon Howe, a Director with PwC's Capital Projects and Infrastructure (CP&I) group, Eddie Edmondson and Tim Patton, both Managers with PwC's CP&I group. Engagement oversight and technical review was provided by Stephen Lechner, a principal in PwC's CP&I and Utilities groups.

The observations and recommendations included in this report are based on information obtained from interviews with Program participants and an assessment of documentation made available to the PwC assessment team.

We have provided recommendations to address each of the key observations from our assessment. For this report, recommendations were assigned a priority of High, Medium, or Low according to the following definitions being reported:

- **High (H)** – Consider addressing observations in one to three months.
- **Medium (M)** – Consider addressing observations in three to six months.
- **Low (L)** – Consider addressing observations in six to twelve months.

The remainder of this report is structured as follows:

- **Key Observations and Recommendations**: This section summarizes the key observations identified during our assessment by the topics addressed in our work plan. Observations and recommendations within this section of the report require a management response.
- **Appendix**: A sample procedural framework is provided for reference.

Our observations and recommendations for strengthening the AMRP control environment are made in light of what we typically see on other well-managed major engineering and construction programs in both the Utility sector and across a broad range of sectors including oil and gas, transportation and infrastructure.

# 2.0 Key Observations and Recommendations

| Report Ref. | Observation / Recommendation | Management Response | Priority |
|---|---|---|---|
| 2.1 | **Program Delivery Organization**<br>Observations:<br>Each of the District Shops (Shop) construction managers interviewed explained that their actual involvement with the AMRP is significantly different and greater than formally communicated and anticipated. Given that the role of Shop construction managers and staff differs from expectations, there is a concern by construction managers that they do not have the engineering and administrative staff to meet the requirements of the AMRP.<br>During Shop interviews, field craft levels were discussed. From discussions, it seems that field craft levels are sufficient now; however, AMRP progress is far behind that planned.<br>During interviews, it became evident that the roles and responsibilities of PMO construction team and Shop construction management team are not completely aligned.<br>Recommendations: | | L |
| | 1) Confirm the AMRP specific roles and responsibilities of the Shop construction management teams. Some of the AMRP specific tasks currently handled by Shop management were not originally planned to be (e.g., managing service installs). We recommend project leadership formally identify the AMRP specific tasks to be performed by Shop construction management teams, and consider additional engineering and project administration support for Shops if additional AMRP tasks remain the responsibility of the Shop construction management teams. | 1) Juan Santiago will revamp the existing Roles & Responsibility document with PGL Operations to gain further clarity. Dana Hotchkiss will support the Change Management associated with any changes associated with the interface. | Due date 10/31/2012 |
| | 2) Assess field craft hours spent on current AMRP progress and forecast craft levels needed when progress meets that planned. Formally address any shortfalls. | 2) Juan Santiago along with Construction Management/Project Controls will audit labor and work with PGL Operations to plan their resources to the overall Integrated Project Plan. Sal Arana will continue work with 18007 Leadership on Labor shortages. | Due date 10/31/2012 |
| | 3) Improve communication and alignment between PMO construction teams, Shop management teams, and field staff. | 3) On-going meetings between Operations and PMO started in 2011 and will continue into 2012. The 2012 meetings have been scheduled. | Completed 2/5/2012 |
| | 4) PwC concurs with plans for an aligned PMO and a reduced implementation ramp up timeframe. PMO coordination issues associated with Shops, Engineering, the Centralized Planning Group (CPG) and Supply Chain Services | 4) The Transition Plan has been developed and reviewed. Implementation began in February | Completed |

| Report Ref. | Observation / Recommendation | Management Response | Priority |
|---|---|---|---|
| | should be resolved (as discussed in report) and optimized in addition to gaining lessons learned from year one prior to implementing the transition. Roles not required in the long term can be eliminated / phased out during optimization. | 2012. | 2/5/2102 |
| 2.2 | **Project Scoping Process**<br>Observations:<br>The formal sign off on a construction project's final design involves primarily the engineering department. As a result, field personnel "Line of Lay"(the location of where the pipe will be installed) and other field related experience was not consistently captured in the final design.<br>Individual project scope is defined in the detailed construction bid documents. The program has recently implemented a Schedule of Values (SOV) for each project to define Rider and Non-Rider construction activities. During 2011, SOV's were developed from the contractors bid documents for each project phase. The SOV, if based solely on the contractor bid documents, may not be accurate.<br>Recommendations: | | M |
| | 1) Implement a formal engineering gate review process (with formal signoff) incorporating peer review, Line of Lay coordination, line walking, contractor materials preference, exploratory 'pot hole' investigations, planning (timing and sequencing) and coordination with contractors. | 1) Engineering agrees and began conducting a Peer Review of all projects and documents including the final design drawings, which are in-turn, signed off by the appropriate Shop Construction Manager or designee. | Completed 2/5/2012 |
| | 2) Consider having Engineering take a lead role in developing the SOV for each 2011 project phase independent of the contractors' bid to properly represent the Rider and Non-Rider charges associated with the AMRP construction activities. Due to the ICR Remand Order, this will not be required for 2012 projects. | 2) Engineering began clearly marking the Rider/Non-Rider designations on the design drawings and will have the input into the SOV for each project for 2011 projects. Bryce Fielder – Lead, Rick Standridge, and Christina Castellanos will be responsible for implementing. | Completed 4/11/2012 |
| 2.3 | **Project Permitting Process**<br>Observations:<br>CPG has the lead for the permit process, supported by PMO and Engineering. CPG makes the requests from Chicago Dept of Transportation (CDOT). Contractors request permits from CPG via the PMO. The process for contractors and PMO requesting permits through CPG after construction starts is not formally documented, resulting in unclear expectations, roles, and responsibilities. | | H |

| Report Ref. | Observation / Recommendation | Management Response | Priority |
|---|---|---|---|
| | Recommendations:<br>1) Prior to beginning construction, contractor should formally review and "sign off" on the list of permits that Engineering has identified for a project, and provide input on the sequencing of the permits consistent with agreed upon construction schedule.<br>2) Consider formally documenting contractor permit requests that are incremental to the list of permits required per the final engineering design.<br>3) Develop a metric that reports the variance between permits required per engineering design and actual permits requested by contractor and/or CPG. | 1-3) During 2012 identifying all required permits will be a scheduled activity in the logic based Integrated Project Plan. This will allow for tracking, reporting, and monitoring of the permits. PMO (Libby Morris) working with CPG and Engineering will be jointly developing this portion of the schedule. Project Execution Plan contains formal process documentation. | Completed 5/4/2012 |
| 2.4 | **Services Scope and Installation**<br>Observations:<br>Shop crews perform all meter and regulator installs. In addition, Shop crews also install any service stub that contractors leave behind. These service installs represent increased scope for the Shop crews. The contractor provides details of locations that have been stubbed and are ready for service installation. The Shops have created a work around process to enable them to accomplish this increase to their scope. C-First (PGL's customer information system) is not integrated with the Work Asset Management System (WAM) for work management; therefore, the Shops schedule and track the service and meter work in an offline database. Interviewees suggested that the communication process is not as efficient as it could be. Shops do not always have the information available to enable them to effectively plan their work.<br>PGL Distribution crews use paper tickets instead of PGL's Field Work Order System (Advantex) for service install work; therefore, CPG must enter information manually into FMDR (Facilities Management Data Repository).<br>Recommendations:<br>1) Consider a formal backup to the offline services database currently used in the Shops, and a process to verify the data on a periodic basis. | 1) The offline Shop database is backed up on the corporate network by ITS. Due to the changes in the scope of several of the individual 2012 projects, the information in the database will need to be verified to ensure that it is current. The plan is to perform this verification at least three times a year. Construction Planning will be responsible for initiating the verification in April, August, and November 2012. The April review was completed. | M<br>Completed 3/23/2012 |

| Report Ref. | Observation / Recommendation | Management Response | Priority |
|---|---|---|---|
| | 2) Consideration should be given to obtaining Advantex units for PGL Distribution Crews and Contractors. Using Advantex, data could be automatically updated to C-First, which then transfers to FMDR. | 2) Enhancements to C-first were implemented the week of March 19, 2012. These enhancements allow for the routing of work via Advantex to field employees performing Service Markings and Meter/Regulator Work. These employees will use their Tough Books/Mobile Data Terminals (MDT's) to complete the work. In addition, contractors are performing all service stub installations in 2012 instead of PGL crews. | Completed 3/19/2012 |
| 2.5 | **Project Scope Change Process**<br>Observations:<br>All changes are currently being channeled via the Field Order Authorization (FOA) route, which has been set up for scope changes that "need to begin immediately." The FOAs are estimates only, and the contractor will confirm the cost of each change later. This could make changes difficult to defend in a regulatory proceeding if the documentation supporting the actual costs are not sufficiently supported.<br>There is no formal mechanism in the contract for price changes; however, unit prices are included in the contract for the purposes of pricing "other work." There is no guidance on adders or loaders to be applied to change sums nor is it clear as to the data that the contractor should provide to support change costs.<br>The August 2011 report stated that contractors' change order requests were currently estimated at $1,519,300 or 1.7% of total contracts awarded. The FOA log shows FOA sums ranging from 0% to 53.9% on projects that are not complete. When comparing the FOA sum to the approximately $33 million of cost of work performed in the field (actual to date plus accruals) then the FOA is close to 5% of planned value.<br>Recommendations: | | H |
| | 1) Cost of changes as a proportion of cost of work performed is the metric that should be used to track, forecast and report change cost. | 1) The PMO agreed to develop additional contingency metric and report out within the Monthly Report. Libby Morris developed. | Completed 3/28/2012 |
| | 2) Upon approval of FOA (change needed immediately) require the contractor to keep detailed time and material (T&M) records associated with the immediate change scope. Documentation of changes to support FOAs should be included in future contract terms and conditions. Add formal rules around change cost calculation and include a time requirement for submission and reconciliation. | 2) An FOA can be either Lump Sum or T&M. If T&M, supporting data (material, time slips, etc) is required to be submitted when the contractor submits the Change Order Request (COR). Phil Hayes reviewed the existing Master Service Agreement (MSA) language and modified it as appropriate for the 2012 work. | Completed 2/5/2012 |

| Report Ref. | Observation / Recommendation | Management Response | Priority |
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| | 3) During the FOA "wrap up" phase, the PMO should diligently review supporting documents and formally document the basis of change agreement. | 3) Procedures have been established to ensure that the PMO reviews all supporting documents and documents the basis of change agreement. | Completed 2/5/2012 |
| 2.6 | **Schedule Management**<br>Observations:<br>The PMO master schedule is primarily used for reporting purposes. Scope data and information that is key to the success of the AMRP (engineering, construction, permitting, materials, and Shop scope) and the timing and sequencing of such scope is housed in multiple separate systems / tools that are not interlinked nor integrated with the master schedule. Adverse schedule impacts are only identified once delay occurs.<br>Recommendations:<br>1) Consider integrating all key AMRP scope components via a work break down structure to help avoid the coordination issues that have been experienced to date. Integration does not necessarily mean having all activities included within the master schedule but having all data coded in such a way that provides transparency into the dependencies between functional activities.<br>2) Key components that would benefit from schedule integration include contractor schedules, permits by block, engineering activities, materials purchasing and delivery, and Shop construction scope. A concise and standardized source of schedule related data that can be accessed by all functional teams would provide significant project management benefits. | 1) A logic based Integrated Project Plan (IPP) has been developed for the 2012 Work. Phil Hayes owned this recommendation.<br>2) These are components within the IPP. Phil Hayes owned this recommendation. | H<br>Completed 3/28/2012<br>Completed 3/28/2012 |
| 2.7 | **Quality Organization and Procedures**<br>Observations:<br>Currently the PMO Quality Assurance (QA) team consists of one manager, and is not yet fully staffed to perform all the activities described in the AMRP Program Quality Plan such as:<br>• Quality assessments and audits<br>• Stakeholder surveys<br>• Reviews of quality controls<br>• Performance improvement and lessons learned<br>• Benchmarking<br>• Records and document control<br>• Project close out reviews | | H |

| Report Ref. | Observation / Recommendation | Management Response | Priority |
|---|---|---|---|
| | A formal review and gap analysis between existing PGL QA Policies and the AMRP Quality Program has not been performed by PMO QA team. Independent QA sample testing of pressure test and As-Built documentation by the PMO QA team has not yet started.<br><br>Recommendations:<br><br>1) Perform a review of AMRP QA and other existing PGL QA activities and policies to ensure there are no gaps or overlaps in the formally assigned responsibility, oversight, inspection, and documentation processes for PMO QA and existing PGL QA organizations.<br><br>2) Identify the steps in the processes for a project (from design through closeout) where critical asset related information is defined, captured, and documented. Implement formal PMO QA testing on a random sample basis for each step where permanent documentation is created, especially "As Built" and pressure tests. Use data gathered to determine the accuracy of the documentation and consistency of the processes. | 1) A Quality Management System for AMRP which will include a review of PGL's QA/QC activities will be developed and documented.<br><br>2) AMRP PMO Quality will follow the established PGL requirements and they will be used to audit against it. AMRP PMO Quality (Dave Parker or designee) will conduct the audit. | Due Date 12/31/2012<br><br>Due date 10/31/2012 |
| 2.8 | **Contractor / Vendor Quality Management**<br><br>Observations:<br><br>The Shop construction manager(s), Construction Engineers, and the Field inspectors are the primary QA interface with the contractor. Daily inspection checklists are filled out by the field inspectors, and weekly meetings held. Per the Contractor Master Service Agreement (MSA), the Company Relationship Manager will have oversight of the quality management approach and methodology as it relates to the work performed by the contractor. It is not clear where the PMO QA team fits into the oversight of fieldwork. The Field Inspector's checklist does not define QA related requirements the checklist and inspection process would be subject to.<br><br>Contractors submit professional training certification to the PMO (e.g. fusion welding certification). PMO has a process that enables the field inspectors to verify certifications exist and are on file. However, during interviews, we noted an inconsistent awareness and understanding of the process.<br><br>Recommendations:<br><br>Consider updating the Inspector's Manual to emphasize the role of PMO QA in Field Inspectors' compliance responsibility. Strengthen the oversight of welder and | Dave Parker (PMO Quality) will review the manual for enhanced language as appropriate. PMO Site | H<br><br>Due date 12/31/2012 |

| Report Ref. | Observation / Recommendation | Management Response | Priority |
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| | joiner qualifications in the Quality Management Matrix. Inspectors on each project should be provided lists with qualified personnel acceptable to the PMO and PGL. | Construction and PMO Quality have access to qualified contractor Operator Qualifications (OQ) database and review qualified contractor cards on a regular basis. The December 2012 implementation date is due to needing SharePoint programming assistance to complete this recommendation. | |
| 2.9 | **Field Inspections**<br>Observations:<br>• Construction Inspector's Manual communicates expectations that all pressure tests are to be witnessed in person. Field Inspectors communicated that witnessing all pressure tests in person is difficult to achieve 100% of the time.<br>• Initially, the package of As-Built drawings for the Spaulding Avenue project submitted to PwC for review did not include STPRs (Strength Test Pressure Reports) nor Charts for the new steel gas main installed between the Dresser Coupling on the existing main and the Polyethylene (PE) transition fitting. PwC noted this gap and the documentation was provided.<br>Recommendations:<br>1) Implement QA testing to periodically observe, test, and record the accuracy and consistency of inspector sign off activities based on defined guidelines, roles, and responsibilities.<br>2) Consider implementing sample testing of As-Built documentation for accuracy and completeness as part of project close out activities. | 1) PMO Quality (Dave Parker) established the QA Plan and audit of this recommendation.<br>2) Contractors' As-Builts are reviewed on a daily basis. As-Builts are reviewed and checked by GIS. If clarification is needed, the drawings are returned to the Contractor for updating. | H<br>Completed 6/29/2012<br>Completed 1/15/2012 |
| 2.10 | **As-Built Drawings and Tickets**<br>Observations:<br>The process for As-Built drawing submittal, approval, and incorporation within the system of record is experiencing a substantial "backlog." For example, at the time of the review, approximately 90 miles of pipe had been installed in the ground but only 15 miles of pipe has been recorded in the Geographic Information System (GIS) and closed in the Work Management Information System (WMIS).<br>Hard copies of the Gas main pressure test documentation are filed within the Engineering department. Pressure test data is not captured within the attributes field of the FMDR (Facilities Management Data Repository) system by Engineering when completing the FMDR updates. CPG is currently entering Pressure Test Data in FMDR for services run by Distribution Crews and Contractors. | | M |

| Report Ref. | Observation / Recommendation | Management Response | Priority |
|---|---|---|---|
| | As-Built drawings are marked up on-site and physically sent to Engineering to allow the information to be checked and transferred to the system of record. As-Built quantities of material are captured in GIS, and entered into WMIS via a time consuming manual data entry process (as GIS and FMDR are not integrated).<br><br>Recommendations: | | |
| | 1) Update Program procedures governing the recording of gas main and service pressure test data in the official system of record to ensure all required information is stored in a single system of record, with a proper audit trail. | 1) AMRP began following PGL's procedures per the Project Execution Procedures (PEP). | Completed 2/5/2012 |
| | 2) FMDR system allows for the tracking of Lot Numbers for Pipe and Serial Numbers for Valves. Consider using FMDR to capture this information to provide a complete set of asset information. | 2) Since this information is not required at this time, AMRP PMO has decided to not collect data and enter into FMDR. | Completed 2/15/2012 |
| | 3) Consider independent third party assistance to review, complete, and submit the As-Built drawings. If pursued, remove the price of this activity from contractor's bids. | 3) This recommendation has been considered and the AMRP PMO has determined that it is more appropriate and cost effective for Construction Contractors to keep this in their Scope of Work. Processes have been developed to ensure Contractors submit As-Built drawings more timely. | Completed 2/5/2012 |
| 2.11 | **Cost Management - Estimating and Budgeting**<br><br>Observations:<br><br>The original budget developed for 2011 work scope was undertaken using a "top down" approach and cannot be linked directly to the projects being planned.<br><br>Recommendations: | | H |
| | Implement "bottom- up" estimating and budgeting processes for 2012 scope using 2011 actual cost data. Establishing robust cost baselines will facilitate better cost performance assessment and reporting. | A top down 2012 budget was established in previous Rate Case.<br><br>The PMO developed a bottom up cost estimating tool using 2011 contractor pricing and which will be updated to include 2012 contractor pricing. This tool will be used for developing future year's budgets from a bottom-up basis.<br><br>Bryce Fielder will develop a 2012 bottoms up budget. | Due date 10/31/2012 |

| Report Ref. | Observation / Recommendation | Management Response | Priority |
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| 2.12 | **Cost Management - Cost Collection**<br>Observations:<br>This observation only pertains to 2011 projects. Due to the ICR Remand Order, segregation of Rider and Non-Rider costs are not needed for 2012 projects.<br>"SOVs" - are being used for construction contractor labor costs. The SOV segregates contractor lump sum values across Rider and Non-Rider mains installation codes and Rider and Non-Rider services installation codes according to rules and drawings. Engineering has recently started to check contractor budget segregation and has been unable to follow the segregation based on their knowledge of the scope of work.<br>There is a significant backlog of invoices being submitted on the project which results in the project accounting being significantly behind progress in the field, disproportionally high accrued cost and the inability to perform timely accounting close. There is no process formalized for closing contracts. The issue associated with the lack of a contract close process is seen differently by each of the functional teams.<br>Recommendations: | | H |
| | 1) Where segregation issues are identified and costs have been accounted for on the incorrect segregation, steps should be taken to correct the segregation in the system of record. | 1) The construction closeout process has been established. Engineering will review contractor segregation based on the scope of work. | Completed 2/5/2012 |
| | 2) The collective functional issues associated with the backlog issue should be clearly communicated and the appropriate level of priority assigned to resolution and achievement of an effective contract and accounting close process. Issues and bottlenecks being experienced include third party mark up of As-Built drawings in the field. | 2) The functional issues have been identified and communicated. AMRP Project Controls (Libby Morris) and Construction Management (Phil Minga) and their respective staffs are working diligently to eliminate the issues and reduce invoice backlog. Invoice issues have been resolved and the backlog reduced. The contract closeout process is implemented and is being performed. | Completed 2/5/2012 |
| 2.13 | **Cost Management - Cost Control**<br>Observations:<br>Contractor costs are managed in line with their lump sum purchase orders and a cost summary for the project is included in the monthly report as an attachment. The report provides no narrative on cost status, performance, or variances at either a summary level or a detailed level.<br>Recommendations: | | M |

| Report Ref. | Observation / Recommendation | Management Response | Priority |
|---|---|---|---|
| | 1) Consider implementing additional cost status metrics to provide a clearer picture of cost performance and status across all cost components and include such metrics and cost narratives in the monthly report.<br>2) Improve reporting on all aspects of project cost performance at the detailed level and against budgets set, e.g., materials, PMO, union / Shop labor, PGL management team, and Engineering. Use project metrics to update forecasts and gain a better understanding of the likely annual cost outcome. | 1) Additional metrics and narrative will be added to the Monthly Report. Bryce Fielder and Libby Morris will mutually develop.<br>2) The existing PGL cost tracking systems will be a challenge to extract data for analysis. We will audit program costs and make recommendations to support this specific Recommendation. Project Controls Staff and Bryce Fielder will take the lead on this recommendation. | Due date 10/31/2012<br>Due date 10/31/2012 |
| 2.14 | **Cost Management - Contingency**<br>Observations:<br>A 5% contingency is applied to contractor costs associated with each project and is identified in the cost summary report. A 10% contingency is applied to PGL costs associated with each project and is identified in the cost summary report.<br>Recommendations:<br>In industry, a 5% to 20% contingency is generally applied where the level of project definition is high and a detailed unit cost estimate has been undertaken. The contingency applied by the AMRP is considered to be at the lower end of the scale. The PMO should consider formalizing and documenting all aspects of the contingency management process including contingency basis calculation. Management of contingency funds to and from contingency line items should be formally administered and tracked. Consider analysis of contingency in line with the risk register during the contingency development process to determine adequacy, e.g., probabilistic risk analysis. Analysis will show whether reasonable and sufficient contingency is available to keep the Project within the approved budget. Such analysis should then be applied throughout the project lifecycle to provide an indication of sufficiency as projects progress. | The PMO will develop overall contingency based upon the Risk Register and this year's 5% and 10% contingency allocations. The PMO will manage contingency on a line item basis for the allocated contingency and hold the un-allocated contingency for risk management. On a monthly basis, we will re-allocate contingency as the fieldwork progresses and risks materialize. Phil Hayes will own this recommendation. | H<br>Due Date 10/31/2012 |
| 2.15 | **Workforce Planning**<br>Observations:<br>A new Union Agreement is in effect and has freed up PGL Union field employees to support AMRP Project coordination requirements. The AMRP representative is planning to conduct another class of training in order to ensure the staffing availability will support anticipated workload through the winter (crews can still perform service work during winter months because it is close enough to the surface).<br>Interviews with field personnel and the AMRP labor relations team lead suggest that there have been no delays in construction due to coordination between PGL | | L |

| Report Ref. | Observation / Recommendation | Management Response | Priority |
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| | union crews and contractor crews.<br><br>Recommendations:<br><br>Continue to staff the recently created union positions to free up existing employees for AMRP related work. | The Operations Group in coordination with Human Resources has created and is staffing the union positions. | Completed 2/5/2012 |
| 2.16 | **Material Planning and Reconciliation**<br><br>Observations:<br><br>System generated notices for release and delivery of material often resulted in material delivered early before the contractor was ready to begin construction. The AMRP was designed to be rolled out in consecutive phases per each individual contract. Material lists were developed in accordance with each phase. Due to Line of Lay issues and Permit issues, contractors are demanding multiple phases of material. This causes stress on the warehouse to meet the demands of the contractors for delivery.<br><br>Interviewees suggested that there have been instances where actual material used on install differs from material called out in design. Some contractors have requested different material after design material was delivered.<br><br>Interviewees communicated examples where contractors move supplies from one project to another. The contract allows this activity but requires that the contractor reconcile the movement of this material back to PGL. No contractor reconciliation of material moved between projects or project material reconciliation as of September 30, 2011.<br><br>Recommendations: | | H |
| | 1) Coordinate closely with the contractor on the requirements for delivery of material that meets the contractors' schedule. This early coordination and an ongoing feedback loop will help ensure the contractor's requested material and permitting changes are necessary and justifiable. | 1) Coordination of the delivery of material with the contractors has been added as an activity in the logic based Integrated Project Plan for 2012 and beyond. Libby Morris implemented. | Completed 5/4/2012 |
| | 2) Perform reconciliation of material by project. Compare and note variance for design Bill of Material (BOM), As-Built BOM, and Warehouse record of material issued for project. Consider capturing detailed lot batch and serial # information where possible. Determine the reason for and amount of material change during each particular project. | 2) Material reconciliation is a requirement of the Contract Closeout Procedure and processes have been developed. For all 2011 Projects, reconciliations will be aggregated by Contractor. For 2012 projects, the reconciliations will be by Project. Nicole Willbur is the owner of this recommendation. | Completed 3/2/2012 |
| | 3) Establish a step in the project closeout process to reconcile material. Determine if material delivered to one project but moved to another has been | 3) This requirement has been established in the Closeout Checklist prior to contractor final | Completed |

| Report Ref. | Observation / Recommendation | Management Response | Priority |
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| | tracked and reported per the MSA.<br>4) Consider placing responsibility for materials management on construction contractors. Enable them to purchase through PGL's system, and manage the ordering and delivery of materials within the project's firm fixed price. This would place the risk of material procurement and logistical management on the contractor rather than PGL. If this option is pursued, ensure robust QA oversight of material installation activities. | payment.<br>4) This issue was explored in-depth including a cost-benefit analysis and a whitepaper and it was ultimately decided by Integrys Business Services Supply Chain Services to continue to have PGL supply materials. The primary reasons to continue having PGL procure and deliver the materials to the Contractors were: The AMRP program has a highly integrated design-to-use material management system (using WMIS, APS, and PeopleSoft) that is flexible and efficient and could support the material needs for the lifetime of the project. The labor, warehouse, and delivery systems are in-place and are cost competitive to construction contractor supply pricing. | 2/5/2012<br>Completed 2/29/2012 |
| 2.17 | **Risk Management Process**<br>Observations:<br>The AMRP Risk Management Procedure is in-line with leading practices and covers risk identifications, assessment and analysis, response and mitigation planning and monitoring and control in addition to roles and responsibilities. Risk management practices as prescribed in the Risk Management Procedure have not been implemented since March 2011. Thus, risk processes and Risk Registers are not being actively used on the AMRP.<br>Recommendations:<br>We are experiencing utility Regulators asking utilities to provide project time and cost probability metrics - which is not a request to start implementing Quantitative Risk Assessment (QRA) but an expectation that it is already happening, as it is a leading practice for large-scale capital programs and project management in the utility sector. It is recommended that risk management processes be implemented as prescribed in the Risk Management Procedure including the use of QRA. | AMRP will look to implement this recommendation to an appropriate level for both Program risks and for construction project risks. Phil Hayes will implement this recommendation. | M<br>Due date 10/31/2012 |

# 3.0 Appendix

## 3.1 Sample Procedural Framework

Project life-cycle

| Project elements | Planning | Design | Implementation | Testing | Turn-over | M&O |
|---|---|---|---|---|---|---|
| Business & regulatory environment | Project purpose funding & approval | Business needs assessment | Executive oversight & support and regulatory relations | | Continuous improvement and reasonableness reviews | |
| Scope & change control | Definition of project elements and benefits | Design project components | Change control process | | User acceptance process | Operations acceptance process |
| Time management (schedule) | Project schedule requirements | Baseline project schedule | Detailed schedule management | | Schedule completion check list | Ongoing maintenance schedule |
| Quality & inspection | Project concept & performance requirements | Design review & approval | Quality assurance process | Conduct inspections & quality review | Close out check list | Quality assurance process |
| Cost management | Capital estimating and budgeting | Cost & schedule forecast | Cost control | | Final payment/ retention release | M&O budget process |
| HR management | Project management plan and staffing | | | Staff reductions/ transfers | Operations staff planning | Ongoing requirements/skills review |
| Communication & reporting | Project reporting requirements | Project status and regulatory filings | Project cost, schedule & budget variance | Project quality performance | Project close-out performance | Financial reporting |
| Procurement & contracts | External contracting options | Vendor qualification/ RFP process | Vendor selection/ contracting | Contract compliance review | Trouble-shoot & punch list | Vendor qualification/ selection |
| Issue management | Project issue management planning | Issue tracking & resolution | | | Confirm issue resolution | Ongoing issue mgt process |