# PECO ENERGY COMPANY

MANAGEMENT EFFICIENCY INVESTIGATION Evaluating the Implementation of Selected Management Audit Recommendations from the 2014 Focused Management and Operations Audit

Prepared by the Pennsylvania Public Utility Commission Bureau of Audits

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# MANAGEMENT EFFICIENCY INVESTIGATION

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#### PECO ENERGY COMPANY

# I. INTRODUCTION

## A. Background

On August 13, 2013, the Management Audit Division (audit staff) of the Pennsylvania Public Utility Commission's (PUC or Commission) Bureau of Audits initiated a Focused Management and Operations Audit (Management Audit) of PECO Energy Company (PECO or Company). The audit staff subsequently completed its work, and in September 2014, issued a final report containing 28 recommendations for improvement. PECO submitted its implementation plan on September 29, 2014 indicating acceptance or partial acceptance of all 28 recommendations. On October 23, 2014, at D-2013-2370921, the Commission made the audit report and Implementation Plan public and directed PECO to:

- Proceed with its September 2014 Implementation Plan; and,
- Submit progress reports on the implementation annually, by October 1, for the next three years.

Since the audit report was made public, PECO has submitted two Implementation Plan updates as requested by the Commission to ascertain the Company's progress in implementing the recommendations contained in the previous Management Audit. Based on a review of these updates, the audit staff elected to conduct a Management Efficiency Investigation (MEI) of PECO's progress in implementing 23 of the original 28 recommendations. Specific items of management effectiveness and operational efficiency may be investigated pursuant to Title 66 Pa. C.S. § 516(b).

### B. Objective and Scope

The objective of this MEI was to review and evaluate the effectiveness of PECO's efforts to implement certain recommendations contained in the Management Audit released in October 2014. The scope of this evaluation was limited to PECO's efforts in implementing 23 prior management audit recommendations in the functional areas of:

- Executive Management and Organizational Structure
- Affiliated Interest and Cost Allocations
- Financial Management
- Electric Operations
- Gas Operations
- Emergency Preparedness
- Materials Management
- Customer Service
- Fleet Management
- Human Resources and Diversity

Additionally, the audit staff deemed it prudent to review PECO's compliance with PUC regulations at 52 Pa. Code Chapter 101 regarding physical security, cyber security, emergency response, and business continuity plans.

# C. Approach

This MEI was performed by the Management Audit Staff of the PUC's Bureau of Audits. Fieldwork began on October 27, 2016, and continued through March 6, 2017. The fact gathering process included:

- Interviews with PECO personnel;
- Analysis of selected PECO records, documents, reports, and other information for the period 2014 through 2016; and,
- Visits to selected Company facilities.

## II. SUMMARY OF MANAGEMENT EFFECTIVENESS AND OPERATING EFFICIENCY

The audit staff found that PECO has effectively or substantially implemented 14 of the 23 prior management audit recommendations reviewed and has taken some action on the remaining 9 recommendations. Among the more notable improvements achieved by the management of PECO are:

- PECO routinely performs cost benefit analyses for contracted services to validate its business practices of using either in-house resources or contractors for targeted services which has resulted in realized one-time savings of approximately \$1.4 million.
- Improved oversight of contractor performed work by dedicating additional resources to project oversight and implementing process improvements.
- Accelerated its main replacement rates for both cast iron and bare steel mains.
- Automated the process of providing work packet and project information to contractors.
- Partnered with a vetted outside agency to conduct vulnerability assessments at selected facilities, resulting in the identification and correction of various, previously unidentified security issues.
- Reduced its risk of loss from uncollectible accounts receivable by reducing long-term accounts receivable balances through increased oversight of high balance accounts, requiring down payments for most types of payment arrangements, and requiring deposits for delinquent accounts.
- Improved its transactional customer service performance levels commensurate with the Pennsylvania Electric Distribution Companies as reported in the PUC's Bureau of Consumer Services annual report through a number of enhancements to its self-service portal, website, and customer online accounts.
- Achieved, or significantly improved, all fleet KPI goals.

Although these accomplishments are commendable, the audit staff has identified opportunities for further improvement in certain areas. In particular, PECO needs to:

- Document its span of control review process and maintain justification for reporting relationships with narrow or wide spans of control.
- Improve its response times to priority one emergency calls and conduct common cause analysis to determine if a systematic change could improve future response times.
- Reduce the number of occurrences of customers experiencing 10 or more interruptions per year.
- Explore options to improve automation of field ticket closure and review, reducing the overly manual efforts currently required.
- Implement plans, programs, and initiatives designed to reduce the number of gas line hits resulting from mapping inaccuracies.

- Correct minor security deficiencies identified at several facilities.
- Determine if any conditions of "combination of data" are present within its systems and revise data security policies to deploy appropriate safeguards.
- Integrate critical staffing requirements into its Business Continuity Plans for all essential business functions.
- Enhance the inventory review process; conducting reviews of inactive materials by Engineering with support from Supply and documenting the justification for retaining inactive inventory
- Investigate the cause and address data integrity issues in the fleet maintenance system.

Exhibit II-1 summarizes the 23 prior recommendations reviewed and the audit staff's follow-up findings, conclusions, and recommendations.

Prior MA Recommendations	MEI Follow-up Findings And Conclusions	MEI Follow-up Recommendations
III. EXECUTIVE MANAGEM	IENT AND ORGANIZATIONA	L STRUCTURE (Page 10)
Conduct periodic management position span of control reviews and document justification for supervisors/ subordinate ratios with narrow or wide spans of control.	<b>III-1</b> – Although span of control analyses are performed annually as part of the workforce planning process, it is not well documented.	Document PECO's span of control review process and maintain justification for reporting relationships with narrow or wide spans of control.
Perform periodic staffing level and base workload studies.	<b>III-2</b> – PECO utilizes a multi- faceted workforce planning process and staffing strategy integrating information from across the organization to determine appropriate staffing levels.	None
Conduct periodic business case studies for contracted services, particularly Contractors of Choice contracts.	<b>III-3 -</b> PECO is performing cost benefit analyses on contractor of choice services prior to contract expiration.	None
IV. AFFILIATED INTEREST	AND COST ALLOCATIONS	(Page 18)
Periodically review costs and quality of services provided by Exelon BSC and compare them to market.	<b>IV-1</b> – PECO and Exelon BSC are periodically reviewing the cost and quality of shared services.	None
V. FINANCIAL MANAGEM	ENT (Page 21)	
Document PECO's internal dividend policy and continue to provide advanced notice, and written explanation to the Commission for each dividend payment in excess of 85 % of net income.	V-1 – PECO has documented its internal dividend policy.	None
VI. ELECTRIC OPERATION	IS (Page 23)	
Improve response rates to emergency orders by tracking the reasons for missing trouble order goals and implementing corrective measures as necessary.	VI-1 – Response miss rates for priority one emergency response calls have improved in 2016, but remain elevated relative to the Company's goal.	Strive to improve priority one emergency response rates and conduct Common Cause Analyses when warranted.

Prior MA Recommendations	MEI Follow-up Findings And Conclusions	MEI Follow-up Recommendations
VI. ELECTRIC OPERATION	IS (continued)	
Reduce overtime levels, specifically non-storm overtime, for Construction & Maintenance and Distribution System Operations.	VI-2 – Company-wide overtime has increased slightly.	Continue to monitor overtime utilization and implement additional measures as necessary to optimize overtime levels.
Improve/expand oversight of contractor performed work.	VI-3 – Sufficient resources have been dedicated and process improvements implemented to provide adequate oversight of contractor performed work.	None
Reduce the number of customers experiencing four or more service interruptions in a year.	VI-4 – PECO has reduced the number of customers experiencing four or more service interruptions in a year, but customers experiencing 10 or more interruptions per year have increased.	Strive to eliminate the occurrences of customers experiencing 10 or more interruptions per year.
Incorporate additional factors into the Top Priority Circuit Program, like Customers Experiencing Multiple Interruptions.	VI-5 – PECO has integrated CEMI into their Top Priority Circuit Program.	Review the weighting factors at least every two to three years and the components used every five to ten years in the Top Priority Circuit Program.
Create enhanced tools/systems in partnership with County 911 Centers to provide interface capabilities during emergency situations.	VI-6 – PECO has created emergency trouble order interface protocols, but not all counties in its service territory have taken advantage of them.	None
Initiate efforts to improve and/or review outage orders closed by field crews.	VI-7 – PECO has not made system changes to facilitate electronic review but has performed additional training for its employees.	Explore options to improve automation of field ticket closure and review.
Evaluate the process for providing work packets to contractors and automate if deemed feasible.	VI-8 – PECO has automated the process where feasible for providing work packets to its contractors.	None

Prior MA Recommendations	MEI Follow-up Findings And Conclusions	MEI Follow-up Recommendations
VII. GAS OPERATIONS (Pa	ige 43)	
Reduce gas line hit damages resulting from PECO mapping data errors, by mitigating mapping data errors and implementing an aggressive program to accurately locate facilities with an emphasis on plastic pipe.	VII-1 – PECO has undertaken several initiatives to reduce the number of gas line hits due to mapping inaccuracies but is still experiencing higher than average gas line hits, largely due to mapping errors.	Implement plans, programs, and initiatives designed to reduce the number of gas line hits resulting from mapping inaccuracies in a timely manner.
Accelerate the replacement rate of unprotected bare steel mains through a risk- based/prioritized schedule.	VII-2 – PECO has accelerated its main replacement rates for both cast iron and bare steel main.	None
VIII. EMERGENCY PREPAR	REDNESS (Page 51)	
Periodically conduct Vulnerability Assessments/Site Security Assessments using outside resources.	VIII-1 – PECO partnered with a trusted outside agency to conduct Vulnerability Assessments for selected facilities.	Continue to explore the use of external partners when performing Vulnerability Assessments and related physical security tests.
	VIII-2 – Minor deficiencies in physical security were noted during inspections of PECO's non-critical facilities.	Correct minor physical security deficiencies.
	VIII-3 – PECO and Exelon's data security could be improved by including the concept of "combination of data."	Review and revise PECO's data security policies to include, "combination of data," and identify any additional data elements that PECO should consider PII pursuant to this concept.
	VIII-4 – PECO does not designate critical staffing requirements within its Business Continuity Plans.	Integrate critical staffing requirements into the BCPs for all major business functions.

Prior MA Recommendations	MEI Follow-up Findings And Conclusions	MEI Follow-up Recommendations
IX. MATERIALS MANAGME	ENT (Page 57)	
Perform a periodic comprehensive system-wide review of emergency and inactive inventory and eliminate inventory, as appropriate.	<b>IX-1 –</b> Process improvement opportunities exist to enhance PECO's comprehensive system-wide inventory review.	Enhance the inventory review process by documenting justification for retaining inactive inventory or conducting Engineering reviews, with support from Supply, of inactive material.
X. CUSTOMER SERVICE (F	Page 60)	
Strive to achieve transactional customer service satisfaction levels equal to or greater than the Pennsylvania Electric Distribution Company average, through continued training, first call resolution, process improvements, etc. Strive to reduce long-term residential customer arrearages by conducting analysis to explore the enhancement of existing payment programs and collection policies.	<ul> <li>X-1 – PECO has achieved transactional customer service satisfaction levels equal to or greater than the Pennsylvania Electric Distribution Company average.</li> <li>X-2 – PECO has reduced long-term residential customer arrearages.</li> </ul>	None
Initiate additional measures to reduce the utilization of deferred payment arrangements for Customer Assistance Program participants and decrease the Company's balance of outstanding customer accounts receivable balances.	<b>X-3 –</b> PECO has decreased its utilization of deferred payment arrangements for Customer Assistance Program participants and reduced the balance of its outstanding customer accounts receivable balances.	None

Prior MA Recommendations	MEI Follow-up Findings And Conclusions	MEI Follow-up Recommendations
XI. FLEET MANAGEMENT	(Page 69)	
Document a comprehensive PECO vehicle replacement policy incorporating its current practices to supplement the Exelon BSC vehicle replacement policy.	<b>XI-1</b> – Exelon documented a comprehensive vehicle replacement policy that incorporated PECO practices.	None
Strive to meet key fleet performance indicator goals.	XI-2 – PECO successfully met its goals or achieved significant improvement on all key performance indicators.	None
	XI-3 – Analysis of PECO Fleet Department reports revealed data accuracy concerns.	Investigate and address fleet reporting issues.
XII. HUMAN RESOURCES	AND DIVERSITY (Page 75)	
Modify PECO's Annual Diversity Report to the PUC to include PECO-specific total spending and PECO-specific diverse vendor spending by classification for minority, women, and persons with disabilities-owned business enterprises.	XII-1 – PECO reported PECO-specific total diversity spending and PECO-specific diverse vendor spending by classification in their 2015 and 2016 Annual Diversity Reports filed with the PUC.	None

# **III. EXECUTIVE MANAGEMENT AND ORGANIZATIONAL STRUCTURE**

**Background** – The PECO 2014 Management Audit contained three recommendations within the Executive Management and Organizational Structure functional area. The audit staff rated this functional area as needing moderate improvement. In this chapter, all three prior recommendations and prior situations are reviewed and three follow-up findings and one follow-up recommendation are presented.

### Finding No. III-1

**Prior Situation** – PECO had not conducted a span of control analysis that included justification for individual positions with narrow or wide spans of control. As of July 2013, approximately 41% of PECO's reporting relationships were within the target range of 1:4 to 1:9, and 25% of reporting relationships were below 1:4. Additionally, a number of atypical reporting relationships were identified including relationships greater than 1:20 (6%) and relationships of 1:1 (6%).

<u>**Prior Recommendation**</u> – Conduct periodic management position span of control reviews and document justification for supervisors/subordinate ratios with narrow or wide spans of control.

# <u>Follow-up Finding and Conclusion</u> – Although span of control analyses are performed annually as part of the workforce planning process, it is not well documented.

<u>**Current Review</u>** – Exelon Business Services Company (Exelon BSC) performs Human Resources (HR) functions for Exelon Corporation and its subsidiaries including PECO. Direct functional HR support is provided through a group of Exelon BSC HR employees which are embedded in the PECO organization (PECO HR). Annually, PECO HR conducts span of control analyses as part of PECO's workforce planning process. Exhibit III-1 illustrates PECO's span of control analyses as of September 2016 in comparison to July 2013. As shown in the exhibit, the percentages of wide spans of control have increased while the percentages of ideal<sup>1</sup> and low spans of control have decreased.</u>

<sup>&</sup>lt;sup>1</sup> In general, spans of control ranging from approximately 1:4 to 1:9 are considered ideal although various operational characteristics and circumstances can cause the true ideal range to deviate from this standard.

#### Exhibit III-1 PECO Energy Company Span of Control Comparison As of July 31, 2013 and September 24, 2016

	As of July	y 31, 2013	As of Septen		
Reporting Ratio	Reporting RatioNumber of RelationshipsPercentage of Total 		Number of Relationships	Percentage of Total Relationships	Change
1:1	16	6.0%	9	3.1%	-7
1:2	24	9.0%	13	4.5%	-11
1:3	26	9.7%	33	11.4%	7
< 1:4 Subtotal	66	24.7%	55	19.0%	-11
1:4	25	9.4%	16	5.5%	-9
1:5	21	7.9%	27	9.3%	6
1:6	20	7.5%	20	6.9%	0
1:7	18	6.7%	22	7.6%	4
1:8	13	4.9%	13	4.5%	0
1:9	12	4.5%	12	4.1%	0
1:4 - 1:9 Subtotal	109	40.8%	110	37.9%	1
1:10	6	2.2%	17	5.9%	11
1:11	10	3.7%	8	2.8%	-2
1:12	13	4.9%	9	3.1%	-4
1:13	7	2.6%	12	4.1%	5
1:14	9	3.4%	6	2.1%	-3
1:15	12	4.5%	10	3.4%	-2
1:16 - 1:19	19	7.1%	34	11.7%	15
1:20 - 1:29	16	6.0%	27	9.3%	11
1:30 - 1:35	0	0.0%	2	0.7%	2
> 1:9 Subtotal	92	34.5%	125	43.1%	33
Total	267	100.0%	290	100.0%	23

Source: Data Request EM-1 and the 2014 Focused Management and Operations Audit at D-2013-2370921

Although PECO HR does not document or maintain justification for individual positions with narrow or wide spans of control, they reportedly obtain management's rationale verbally during the analysis process. In general, PECO HR indicated that narrow spans of control are the result of specialized departments and wide spans of control are typically the result of a supervisor overseeing a larger group containing Foremen or Master Technicians. These Foremen each oversee a subset group of employees for their respective supervisor with group composition changing day-to-day depending on work/needs. Foremen are not considered supervisory employees; however, they address day-to-day performance issues, direct other employees on the

job sites and help perform work tasks. Meanwhile, supervisors are more administrative in nature and provide work oversight, planning, budgeting, etc. As of September 2016, there were 147 Foreman positions within PECO.

PECO strives to maintain reporting relationships in the range of 1:6 to 1:10 with no more than eight organizational levels between first level supervisors and the PECO CEO. Although PECO HR has not documented the process for the annual span of control review, the Exelon Utilities Organizational Structure and Staffing Process outlines the steps for changing PECO's approved organizational structure, including spans of control. The document identifies a number of factors taken into consideration when establishing organizational and reporting structures including the type and variety of work performed; geography of the workforce and work assignments; and position level. Changing established spans of control, or reporting structures, to outside of the 1:6 to 1:10 range requires the approval of the PECO CEO or COO and the Exelon Utilities CEO.

Typically, spans of control should range from approximately 1:4 to 1:9 to maximize operational efficiency and effectiveness. Narrow spans of control can result in too many layers of management, micro-management, and inefficient communication. Alternatively, overly wide spans can lead to inefficient management oversight and control, and poor operational performance. Although there are often unique circumstances in utility operations that require some overly low and high reporting relationships, the rationale and justification for these reporting relationships should be maintained and reviewed to ensure that these relationships should continue given current circumstances and operating conditions. The documentation also provides a record to current and future employees, and helps to maintain process continuity year to year.

The audit staff proposes documenting the span of control review process. By documenting its verbal review of spans during the formalized budgeting process, it would provide a sound baseboard to conduct future analysis, consider organizational changes, facilitate discussion, etc. In addition, documentation would help to ensuring each department manager and functional VP reviews his or her respective span of control.

<u>Follow-up Recommendation</u> – Document PECO's span of control review process and maintain justification for reporting relationships with narrow or wide spans of control.

### Finding No. III-2

**Prior Situation** – As of the previous audit, completed September 2014, PECO's philosophy was to staff internally to meet base workload needs and utilize contractors for peak workload conditions. PECO used various means to assess staffing levels including the budgeting process (challenging expenses associated with staffing levels); human resources (developing short and long-term staffing needs based on attrition and recruiting challenges); and individual department analysis (department level staffing analysis for a specific position, group, or department). However, apart from the budgeting and HR attrition and hiring reviews, PECO was only able to provide the audit staff with limited support and PECO's efforts did not appear to adequately assess staffing levels in relation to base workload. In addition, the audit staff identified a few instances where staffing levels did not appear to be at optimal levels.

**Prior Recommendation** – Perform periodic staffing level and base workload studies.

# <u>Follow-up Finding and Conclusion</u> – PECO utilizes a multi-faceted workforce planning process and staffing strategy integrating information from across the organization to determine appropriate staffing levels.

**Current Review** – PECO HR plays a key role in the staffing planning process; overseeing PECO's organizational structure and staffing levels while working closely with each work group or department. Moreover, PECO HR will incorporate as part of any organizational discussions all relevant functional areas and departments to avoid duplication of job responsibilities or staffing in the decision-making process. PECO HR also ensures that all staffing elements are considered and departments work in unison (e.g., coordination between respective departments in terms of hiring, training, and resource needs) as part of the staffing planning process. Further, PECO HR works with each functional area to determine projected hiring needs based on attrition (i.e., retirement, resignation, promotion, and transfer rates) and projected workload. HR will also work with each department with respect to succession planning, employee development plans, identifying and planning for filling critical positions<sup>2</sup>, and developing recruiting, training, and retention strategies.

Span of control reviews are another element that affects the PECO staffing plan. Annually, as part of the staffing planning process PECO HR reviews PECO's organization and discusses any spans of control outside of the Company's prescribed range with management to ensure reporting relationships, and ultimately organizational design, make sense. See Follow-up Finding and Conclusion No. III-1 for more information on PECO's span of control review process.

While HR generally drives discussions on staffing, PECO's overall staffing strategy centers on utilizing internal resources to meet base or sustainable workload (including adequate storm response) based on historical and projected work levels supplemented by contracted resources and/or overtime for peak workloads.

<sup>&</sup>lt;sup>2</sup> Critical positions are core positions with long lead times from when an employee is hired until certified to perform field work, require up front testing, require at least 12 months of extensive training, or are generally hard to fill.

PECO often outsources non-core, non-skilled, and specialty work tasks (e.g., concrete work, flagging) and functions shown through business case analysis to be most efficiently performed by contracted resources (e.g., secondary fault locate and repair, meter maintenance, project controls). PECO also considers employee development, maintaining core competencies and skills, and building employees' knowledge base on new and emerging system technologies as a determining factor in performing the work internally or outsource. For example, PECO will schedule work for crews so they can maintain competencies and has been performing work related to its advanced meter infrastructure project with internal resources to ensure employees understand and know how to work with the new technology.

Once staffing levels are established, PECO uses various department key performance indicators to monitor performance. Some of these performance indicators such as overtime, work backlog, time-in-field, commitments met, head count to compliment, etc. are related to staffing and are often used to provide feedback to management as to the adequacy of staffing levels. To illustrate, an example of this feedback led to the creation of a new group called the Solar Group. PECO had been contracting out additional new work in its New Business organization associated with customers deploying their own solar cells. However, a steady increase in solar related work resulted in PECO deciding to form a new centralized Solar Group with internal resources during 2016.

The audit staff identified a number of other areas where PECO's staffing process has successfully identified the need for increased staffing levels in recent years. For example, as performance indicators began decreasing, the Business Planning and Support Group leveraged technology and hired two additional Contract Coordinators in 2015 and one in 2016 to handle a steadily increasing work volume (See Follow-up Finding and Conclusion No. VI-3 for additional information). PECO's Distribution System Operations (DSO) and Construction and Maintenance (C&M) organizations also significantly increased staffing from 2014 through 2016 and plan to further increase staffing during 2017, primarily to perform increased workload resulting from the Company's LTIIP program (see Follow-up Finding and Conclusion No. VI-2 for additional information).

Best practices suggest that comprehensive staffing and base workload analysis should be completed regularly (i.e., every 3-5 years) with consideration for, among other things, the work plan and staffing resource needs, storm response strategies, attrition and knowledge retention, succession planning, strategic direction, spans of control, and leverage financial analysis to support decisions to outsource work or utilize overtime. The analysis should also draw on expertise from across PECO's business lines and include upper management support, input, and overall strategic direction. Continuous monitoring and reevaluation is critical to address changing requirements or conditions. As previous highlighted, PECO has identified various areas where additional staffing was needed and taken action to add internal resources. Furthermore, those increases align with the audit staff's recommendation in the 2014 Management Audit. As such, PECO appears to be adequately evaluating its staffing needs and following a designed staffing strategy.

#### Follow-up Recommendation - None

#### Finding No. III-3

<u>**Prior Situation**</u> – PECO did not routinely perform cost-benefit analysis to justify decision-making for outsourced workloads. PECO outsourced work for a variety of reasons including cost, specialization, peak workload, etc. with many low cost, recurring tasks outsourced to contractors of choice (COC). COC contracts were bid for four to five-year terms and typically rebid at the end of the contract without any cost-benefit or business case analysis performed barring poor contractor performance.

<u>**Prior Recommendation**</u> – Conduct periodic business case studies for contracted services, particularly Contractors of Choice contracts.

# <u>Follow-up Finding and Conclusion</u> – PECO is performing cost-benefit analyses on contractor of choice services prior to contract expiration.

<u>**Current Review**</u> – During 2015, PECO identified all contractor of choice services and implemented a policy to review long-term insourcing/outsourcing opportunities<sup>3</sup> as contracts approached their expiration. The list of COC services contained 27 contracts for work in six different categories including engineering, gas distribution maintenance, overhead electric distribution, overhead electric transmission, underground electric distribution, and substations. Of the 27 contracts three contracts expired during 2016 and the remaining 24 were set to expire by year-end 2017. Typically, COC service contracts are awarded for a three-year term but may contain a series of optional one-year renewals.

An effective business case for outsourcing contracted resources should be based not only on projected cost but also incorporate business strategy, workload, work quality, risk, and flexibility. In addition, each business case should be linked to staffing strategies to optimize internal and outsourced resources. The business case analyses prepared to justify insourcing/outsourcing decisions for PECO involve individuals from various functional groups within PECO and Exelon BSC including Finance, Accounting, Human Resources (HR), Supply, the client department <sup>4</sup> and other functional area subject matter experts (SMEs) as necessary. Key individuals are pulled together to form a Project Team and work together to provide the various inputs and assumptions for consideration in the analysis.

In general, the Finance Organization performs the mechanics of the analysis; coordinating with the other functional groups to ensure appropriate assumptions are identified and incorporated into the analysis; applying corporate assumptions; and estimating labor productivity factors and transition costs. The Supply Organization issues the RFP for the work to be performed and provides relevant information and costs from vendor proposals to the Finance Organization for inclusion in the analysis. The Finance and Supply Organizations work together to ensure there is a consistent scope between the vendor proposals and insource scenario(s). The client department provides information related to scenario changes that would impact work quality,

<sup>&</sup>lt;sup>3</sup> The Exelon Insourcing/Outsourcing Evaluation Process generally would not apply to short-term initiatives or staff augmentation decisions set for a defined time period.

<sup>&</sup>lt;sup>4</sup> Refers to the organizational group responsible for the function under insource/outsource business case review.

operating and maintenance (O&M) costs (i.e., workload, implementation costs, training, system changes, supplies, etc.) and/or capital account impacts (i.e., workload, asset divestitures, expenditures, etc.). The client department also identifies any employee positions impacted by the analysis scenario(s) and works with Finance and PECO HR to ensure labor impacts associated with any affected employee positions have been identified. Based on the identified employee impacts, PECO HR ultimately provides labor rates and other compensation and labor related costs and assumptions for the analysis scenario(s) such as annual incentive plan costs, stock awards, stock options, pension, benefit, and severance costs, overhead costs, and bargaining unit impacts. Likewise, accounting, tax, environmental, and real estate implications are provided by those respective departments and incorporated into the analysis by the Finance Department.

While the value of a scenario as determined by the expected future increase, or decrease, in cash flow associated with the scenario is a key part of the business case for an insource/outsource decision, PECO also considers other important factors. Throughout the analysis process, multiple factors including business strategies and risk, credit rating impacts, cost of capital, the timing of scenario events, etc. are considered under each scenario analysis. Although similar overall practices are utilized for each analysis performed, the process is tailored specifically to the service contract to compare the cost of insourcing vs. outsourcing (i.e., to allow for an apples-to-apples comparison).

Since identifying its COC services during 2015, only PECO's Engineering COC services, which expired at December 31, 2016, have been evaluated. Within PECO, Distribution Engineering Design performs more than half of all design work and utilizes its Engineering COC contractors for overflow workload and large engineering projects. During 2016, one consolidated cost-benefit analysis was prepared for the three Engineering COC contracts, which showed that the current model of using Engineering COC's for overflow projects and large Distribution Engineering work was more efficient that insourcing all Distribution Engineering work. By continuing to follow its current model, the analysis showed an average annual benefit to PECO of approximately \$800,000.

In addition to performing cost-benefit analyses for COC services, PECO also periodically analyzes other vendor contracts as expiration approaches. For example, during 2015, PECO performed business case studies on Meter Maintenance services, Financial Call Center Operations services (e.g., payment arrangements, delinquencies, terminations, etc.), and Project Controls services (e.g., scheduling, estimating, and cost engineering). During 2016, cost-benefit analyses were performed for several staff augmentation decisions related to PECO's Customer Operations and Smart Grid/Smart Meter functions. As a result of the analysis, PECO's Project Controls services were brought in-house, potentially saving PECO \$1.4 million in comparison to the least expensive outsourcing option. Moreover, the business case study determined that outsourcing Meter Maintenance services was the most cost-effective option although the study showed that some components of the function would benefit from being brought in-house. Furthermore, as discussed in more detail in Follow-up Finding and Conclusion IV-1, individual Exelon BSC functional groups regularly perform benchmarking or other service comparability analyses to ensure shared service functions are being provided in an efficient and effective manner or improvement opportunities are identified.

PECO instituted a policy in which all COC contracts would be examined through a business case to ensure outsourcing was in the best interest of the company. As a result of the changes made by PECO as outlined above, the Company can identify the benefits, or costs, associated with continuing to outsource a service(s) and make changes to business operations as deemed appropriate. In fact, PECO estimates these analyses may have led to \$1.4 million in savings as well as confirming other services were provided efficiently and effectively. Additionally, the information gained through the cost-benefit analyses is used in PECO's staffing planning process to assist in determining internal and outsourced functions and staffing resources to improve operations.

#### Follow-up Recommendation - None

# IV. AFFILIATED INTERESTS AND COST ALLOCATIONS

**Background** – The PECO 2014 Management Audit contained one recommendation within the Affiliated Interests and Cost Allocations functional area. The audit staff rated this functional area as needing minor improvement. In this chapter, the one prior recommendation and prior situation is reviewed.

#### Finding No. IV-1

**Prior Situation** – Exelon Corporation's (Exelon) market testing procedure was applied to a limited number of Exelon Business Services Company (Exelon BSC) services. As a result of the 2007 Stratified Management and Operations Audit at Docket No. D-05MGT048, the Exelon BSC Market Testing Service Classification Procedure (Market Testing Procedure) was developed during 2010 to identify any services, provided by Exelon BSC to PECO, which may benefit from market testing analysis. Any identified services were to subsequently undergo external market testing; comparing the use of Exelon BSC services to outsourcing options. However, based on the restrictive criteria<sup>5</sup> established in the Market Testing Procedure, it did not identify any Exelon BSC services for testing during the years 2010 through 2013.

<u>**Prior Recommendation**</u> – Periodically review costs and quality of services provided by Exelon BSC and compare them to market.

# <u>Follow-up Finding and Conclusion</u> – PECO and Exelon BSC are periodically reviewing the cost and quality of shared services.

<u>**Current Review</u>** – PECO and Exelon BSC Executive Management made a fundamental update to the Exelon BSC Market Testing Procedure in 2015. The update expanded the procedure's scope to include a review of all transactional services every five to seven years, even if not identified for review during the market testing process. Although the 2014, 2015, and 2016 Market Testing Analysis excluded all services from review as it had in every previous year, the provisions of the 2015 update led to at least one service being reviewed during both 2015 and 2016.</u>

During 2015, a third party reviewed the Exelon BSC Payroll function looking at both cost and service quality aspects of the payroll processes in comparison to approximately 100 organizations across various industries and geographies. The study highlighted opportunities for improvement related to the aspects of payroll strategy, productivity, technology, and complexity, and indicated that Exelon BSC payroll administrative costs per employee were substantially higher than comparative U.S. companies. As a result, Exelon BSC Payroll has initiated a number of efforts to help

<sup>&</sup>lt;sup>5</sup> In accordance with the Market Testing Procedure, each service provided to PECO is classified as Governance, Strategic, Business Support, or Transactional, with all services, except those classified as Transactional, excluded from market testing. Transactional services are then further divided; classified as Currently Outsourced, Third-party Contracted, Recently Analyzed, 1st or 2nd Quartile, or Remaining Costs Subject to Further Review with all but Remaining Costs Subject to Further Review excluded from testing. The remaining services with annual charges of \$500,000 or greater were then evaluated (services with less than \$500,000 in charges excluded as immaterial).

improve efficiencies and cost effectiveness including leveraging automated clearing house (ACH) functionality to drive down paper costs, attempting to work with the Exelon's various unions to eliminate weekly paychecks where applicable, and plans to implement a cloud based platform during the second quarter of 2017. Exelon BSC Human Resources typically benchmarks the Payroll function on an annual basis; however, a benchmarking analysis had not been performed since 2012 due to changes from the Constellation Energy Group, Inc. (Constellation) acquisition<sup>6</sup>.

Similarly, during 2016, an evaluation of the Accounts Payable (AP) function was initiated through a RFx process<sup>7</sup> to determine if service levels could be improved or maintained at a lower cost. The review focused on invoice processing, invoice support services, vendor maintenance processes, and government reporting; and, strategically excluded certain AP control functions from the analysis. As of February 2017, the review had not been completed, but PECO management indicated that the RFx process would be finalized by the end of 2017. Typically, the RFP process facilitates a review of service quality and market cost provided an adequate number of contractors respond to the RFP. Therefore, any Exelon BSC service that is completely or largely outsourced to third parties through a periodic RFx process should be adequately market tested.

In addition to market testing, individual Exelon BSC functional areas regularly perform benchmarking reviews to ensure they are operating effectively and efficiently. For example, a third party reviewed various IT services including Telephone, Network Operations, Network Access, Operations Services, User Login, and PC services to evaluate service levels and identify improvement opportunities. Communicating results from these reviews should be considered a best practice; however, the results are only occasionally passed on to the PECO CFO and other Exelon operating companies receiving services. The Companies receiving service, such as PECO, can provide valuable feedback on future needs, service quality concerns, etc.

Furthermore, starting in 2016, Exelon's regulated utilities<sup>8</sup> began conducting Electric Utility (EU) Efficiency Reviews to compare practices; focusing on the Exelon BSC embedded operations<sup>9</sup> between the utilities to identify best practices and how services could be improved. The reviews normalized the number of fulltime equivalents performing each function; considering company size, level of function activity, and the actual services being performed by each functional group. The goal of these reviews was to determine if the embedded functions in any of the Exelon EU companies were performing in a more efficient or cost-effective manner compared to the other utility companies and ultimately make adjustments (where appropriate) to adopt the practices from the best performing utilities, reorganize to conform to the best performing structure, etc.

<sup>&</sup>lt;sup>6</sup> On March 12, 2012 Exelon acquired Constellation Energy Group and its subsidiaries, including Baltimore Gas and Electric (BGE); Constellation's regulated electric distribution company. In conjunction with the acquisition, a new Exelon Utilities Group was formed with Exelon BSC and a number of organizational changes were enacted to align Exelon's utility operations.

<sup>&</sup>lt;sup>7</sup> Term encompassing the Request for Information (RFI), Request for Proposal (RFP), Request for Quote (RFQ), and Request for Bid (RFB)

<sup>&</sup>lt;sup>8</sup> PECO Energy Company, Baltimore Gas and Electric Company, Commonwealth Edison Company, and Pepco Holdings, Inc.

<sup>&</sup>lt;sup>9</sup> Human Resources, Information Technology, Finance, Legal, Communications, and Supply

Affiliate service charges should be periodically compared to market rates to ensure intercompany charges are fairly and competitively priced. Likewise, the quality of affiliate services should be compared to those offered on the external market. In addition, business case reviews should be performed on services that are currently outsourced to identify opportunities where services may be performed more costeffectively or efficiently by other providers or internal resources.

The 2015 update expanded the scope of the Market Testing Procedure to include a review of all transactional services every five to seven years which largely fulfills the spirit and intent of the audit staff's prior recommendation. Going forward, PECO and Exelon BSC should continue to periodically compare and benchmark affiliate services to market. In addition, PECO could benefit from significantly improved communication and sharing of results from service reviews performed by the individual Exelon BSC functions. In addition, an effort should be made to review some functions currently classified in the Governance, Strategic, and Business Support categories by the Market Testing Procedure, as there is value in identifying improvement opportunities and inefficiencies, even for services that cannot be outsourced. Although these changes would help strengthen the review process, PECO and Exelon BSC have taken a number of steps (described above) to verify that shared services are being provided in an efficient and cost-effective manner and/or improvement opportunities are identified to ensure service offerings are fair and reasonable.

#### Follow-up Recommendation - None

# V. FINANCIAL MANAGEMENT

**Background** – The PECO 2014 Management Audit contained two recommendations within the Financial Management functional area. The audit staff rated this functional area as needing minor improvement. In this chapter, one prior recommendation and one prior situation are reviewed and a follow-up finding is presented.

#### Finding No. V-1

**Prior Situation** – PECO, a subsidiary of Exelon Corporation, (Exelon or Parent Company) issues dividends on a quarterly basis to its Parent Company. Although both PECO and Exelon had established payout goals, objectives, restrictions and an overall dividend approach, neither PECO nor Exelon had established a written internal dividend policy. From 2009 through 2013, PECO's dividend levels, while slightly above its stated goals, remained relatively consistent and aligned with typical industry dividend payout levels to maintain PECO's desired capital structure.

<u>**Prior Recommendation**</u> – Document PECO's internal dividend policy and continue to provide advanced notice, and written explanation to the Commission for each dividend payment in excess of 85% of net income.

# <u>Follow-up Finding and Conclusion</u> – PECO has documented its internal dividend policy.

**Current Review** – In response to audit staff's recommendation, PECO implemented a written dividend policy effective on September 1, 2014 governing future dividend payments issued in 2015 and thereafter. The policy provides guidelines for the issuance of dividends and documents objectives, compliance and success measures, assumptions for the sizing of dividends, and assigns roles and responsibilities concerning all aspects of the dividend issuance process. PECO's long-term target dividend payout level is 70% of annual net income; however, the actual quarterly and/or overall annual payouts may fluctuate based upon its capital structure, capital expenditures, or business needs. Due to dividend payouts occurring on a quarterly basis, the ratio between the quarterly payout and quarterly net income may vary due to the seasonality of PECO's net income.

As shown in Exhibit V-1, PECO's dividend ratios from 2014 to 2016 have generally remained below 85% of net income. PECO's aggregate dividend payout and net income ratio was 75% from 2014 to 2016. Utility dividend payout ratios ranging from 75 to 85% of net income are typically deemed reasonable. Audit staff notes that PECO's documented dividend policy also includes a provision to notify the Commission with explanation in advance of any dividends that exceed 85% of net income.





Source: Data Requests FM-2 & FM-5

Well-documented dividend policies provide guidance and establish a uniform procedure regarding the Company's dividend process. Moreover, implementation of written provisions to ensure proper notification to the Commission when declared dividends exceed 85% of net income provides additional safeguards from excessive dividend payments from a regulated utility to its non-regulated parent company. As such, PECO's documentation governing its dividend policy has strengthened the Company's financial controls and ring-fencing measures.

#### Follow-up Recommendation - None

# VI. ELECTRIC OPERATIONS

**Background** – The PECO 2014 Management Audit contained nine recommendations within the Electric Operations Chapter. The audit staff rated this functional area as needing moderate improvement. In this chapter, eight prior recommendations and prior situations are reviewed and four follow-up findings are presented.

#### <u>Finding No. VI-1</u>

**Prior Situation** – PECO's response to electric trouble orders, particularly emergency tickets, did not consistently meet Company standards. The Company had established aggressive goals for responding to electric emergency tickets (Police/Fire 1 or P/F1) due to the urgency associated with these incidents. A review of emergency response rates over the timeframe from 2010 through October 2013 revealed trends of general improvement, but still exhibited deficient emergency response rates relative to targeted levels. More specifically for 2013, approximately 28% of priority one or P/F1 orders and 19% of all electric trouble orders did not meet response standards. PECO's Distribution System Operations (DSO) performed a root cause analysis whenever a gas emergency exceeded the one-hour response time; however, similar analyses were not performed on missed electric emergency calls. Therefore, no documentation existed for the causal factors related to missed electric emergency responses, limiting the Company's ability to deploy necessary corrective actions.

<u>**Prior Recommendation**</u> – Improve response rates to emergency orders by tracking the reasons for missing trouble order goals and implementing corrective measures as necessary.

<u>Follow-up Finding and Conclusion</u> – Response miss rates for priority one emergency response calls have improved in 2016, but remain elevated relative to the Company's goal.

<u>**Current Review**</u> – PECO's DSO is responsible for dispatch and response to electric emergency calls. The Company prioritizes its response to electric distribution emergency calls based on severity level, and has developed, in conjunction with local emergency response personnel, response goals as illustrated below:

- Police/Fire 1 (P/F1) A priority one emergency response requires a response within 30 minutes. These emergencies usually involve electric service or infrastructure preventing a rescue.
- P/F2 A priority two emergency requires a response within one hour. These
  emergencies usually involve electric service or infrastructure preventing
  emergency workers from acting to end an emergency that is causing property
  damage.
- P/F3 A priority three emergency response requires a response within 4 hours and poses no immediate risk of personal injury or property damage.

Exhibit VI-1 depicts the percentage of total trouble orders and P/F1 orders missed during both storm and non-storm conditions from 2010 through September 2016.

#### Exhibit VI-1 PECO Energy Company Response Miss Rates to Storm and Non-Storm Trouble Orders For the Years January 1, 2010 through September 2016

Year	Category	Total Number of P/F1 Orders	% of P/F1 Orders Missed	Total Number of Orders	% of Total Orders Missed
	Non-Storm	163	27.14%	6,689	25.31%
2010	Storm	62	50.00%	2,643	31.88%
	Total	225	28.44%	9,332	27.58%
	Non-Storm	174	40.23%	6,877	23.79%
2011	Storm	76	23.68%	3,032	23.88%
	Total	250	35.20%	9,909	23.82%
	Non-Storm	166	30.12%	6,741	21.07%
2012	Storm	46	21.74%	2,045	24.30%
	Total	212	28.30%	8,786	21.82%
	Non-Storm	188	27.66%	5,972	18.99%
2013	Storm *	0	0.00%	58	17.24%
	Total	188	27.66%	6,030	18.97%
	Non-Storm	216	34.72%	6,349	21.23%
2014	Storm	66	15.15%	2,851	8.17%
	Total	282	30.14%	9,200	17.18%
	Non-Storm	165	24.85%	6,476	16.97%
2015	Storm	31	70.97%	1,252	69.89%
	Total	196	32.14%	7,728	25.54%
2016	Non-Storm	86	19.77%	4,946	18.78%
(Through Sep.	Storm	22	27.27%	1,538	12.94%
30)	Total	108	21.30%	6,484	17.40%

Source: Data Request EO-1

\*Storm P/F1 responses were not tracked in 2013.

In conjunction with definitions and response times for emergency types, PECO has established a goal to meet the above response times for all three types of P/F calls at least 85% of the time. As shown in Exhibit VI-1, PECO's average PF1 miss rate in the period from 2010-2015 was 30.3% and the P/F1 miss rate in 2016 (through September 30<sup>th</sup>, 2015) was 21.3%. The P/F1 non-storm miss rates improved from an average of about 30.8% in 2010-2015 to 19.77% in 2016 and storm P/F1 miss rates went from 30.3% in 2010-2015 to 27.3% in 2016. Consequently, this data indicates that PECO is not yet meeting its goal for responding to P/F1 emergency calls. However, in response to the 2014 Management Audit, PECO began various initiatives to improve its emergency response miss rates.

For instance, the Company began actively tracking/monitoring P/F1 response rates in 2015, initiated training focused on efficient dispatch and response, and started performing an Apparent Cause Evaluation (ACE) after every missed P/F1 response. The ACE is aimed at determining the cause of the miss and any remedial action to address the issue. Analysis of the ACE reports reveals three main causes for missed P/F1 response times:

- Emergency orders classified as P/F1 that should be classified as a lower grade.
- Responders not being located close enough when they are dispatched, and/or dispatchers not being able to locate them quickly enough.
- P/F1 tickets are not highlighted on dispatchers' screens, particularly during storm situations with numerous open tickets.

In addition to the initiatives identified above, PECO has instituted various corrective actions for these three ACE causes. The first two are primarily addressed through enhanced training that focuses on interaction with the OMS, location of field crews using GPS, and guidelines and expectations for responding to P/F1 calls. The Company also added a feature that automatically highlights P/F1 orders and prioritizes them on the dispatcher's screens. Most of these initiatives were started during 2015 and will take some time to improve statistics. In fact, the audit staff noted improvement in the 2016 data presented in Exhibit VI-1, but additional time is needed to fully evaluate if these changes are effective.

To better address P/F1 emergency response miss rates, PECO created a Performance Indicator (PI) to track all P/F1s in 2015. They have also created a report that documents all open corrective actions. This report is provided to the Director of Distribution System Operations, and reviewed at weekly DSO meetings with any missed corrective actions escalated in priority. Additionally, PECO conducts Common Cause Analyses (CCA) when sufficient corroborating data has been collected relative to similar emergency response incidents. The Company also determines if systemic actions or changes can be made to address and prevent similar emergency response misses in the future. Due to the criticality of the P/F1 response times, a CCA should be performed whenever there are at least two ACEs triggered for a missed P/F1 response time. In fact, multiple year data should be used and any potential solutions would need to be prioritized and weighted for avoidance of future misses.

<u>Follow-Up Recommendation</u> – Strive to improve priority one emergency response rates and conduct Common Cause Analyses when warranted.

#### Finding No. VI-2

**Prior Situation** – PECO Electric Operations had been incurring overtime (as a percentage of straight-time hours) of approximately 21% from 2008 to 2013, with Construction and Maintenance (C&M) and Distribution System Operations (DSO) averaging 23% and 28% respectively during the same period. Regional C&M and DSO accounted for approximately 85% of overtime in Electric Operations. More specifically, 50 to 60% of overtime within C&M and DSO was incurred during non-storm events, meaning the majority of the overtime was supporting normal business activities.

<u>**Prior Recommendation**</u> – Reduce overtime levels, specifically for non-storm overtime, for C&M and DSO.

# <u>Follow-up Finding and Conclusion</u> – Company-wide overtime has increased slightly.

<u>**Current Review**</u> – Due to the nature of its utility operation, PECO regularly utilizes overtime for various types of operations (i.e., storm response, emergency response, seasonal work, maintenance backlog reduction, etc.) The Company's overtime hours compared to straight time work hours for all Electric Operations Departments is presented in Exhibit VI-2.

#### Exhibit VI-2 PECO Energy Company Overtime and Straight-Time Work Hours for Electric Operations and Percentage of Overtime by Department For the Years January 1, 2008 through September 2016

	2008	2009	2010	2011	2012	2013	2014	2015	2016
Hours	507,905	431,271	560,115	637,361	557,691	504,666	680,643	560,803	577,712
Total Straight Time Hours	2,518,048	2,526,368	2,562,560	2,564,640	2,525,120	2,589,836	2,545,178	2,599,835	2,619,673
Percent of Overtime	20.17%	17.07%	21.86%	24.85%	22.09%	19.49%	26.74%	21.57%	22.05%
		Pe	rcentage of	f Overtime	by Departm	nent			
C&M	48.22%	48.64%	49.88%	47.55%	47.71%	48.21%	49.27%	48.18%	51.53%
DSO	36.28%	36.55%	36.69%	37.32%	36.95%	38.48%	38.01%	40.55%	37.09%
T&S	10.92%	12.25%	11.97%	11.78%	11.99%	12.29%	11.95%	10.51%	10.34%
Other	4.58%	2.56%	1.46%	3.34%	3.35%	1.01%	0.77%	0.76%	1.04%

Note: Total Employee Hours was calculated by multiplying the number of employees by an average of 2080 hours for the years 2008 – 2012. After this period, the Total Employee Hours was reported by PECO in Data Requests EO-5 and EO-20.

Note: The "Other" category includes all other PECO Electric Operations Departments that incur overtime, such as Transmission Operations, Technical Services, etc.

As shown in Exhibit VI-2, overtime for the entire Electric Operations Department has increased from approximately 21.2% (i.e., averaged over the 2008-2012 period) to 22.5% (averaged over the 2013-2016 period). Similarly, the percentage of Electric Operations overtime attributable to C&M and DSO has increased from approximately

85% to 88% averaged over the same time periods. As noted in the 2014 Management and Operations audit, overtime hours tend to accumulate differently for each department. More specifically, DSO would be more likely to utilize overtime for emergency response efforts while C&M and Transmission and Substation (T&S) organizations are more likely to utilize overtime seasonally to complete preventative or corrective maintenance. C&M also uses overtime for first response as well as for staging in advance of weather events. A summary of overtime for the Regional C&M and DSO organization is presented in Exhibit VI-3, as well as the percentage of storm and non-storm related overtime.

#### Exhibit VI-3 PECO Energy Company Overtime and Straight-Time for Regional C&M and DSO with Storm and Non-Storm Activity For the Years January 1, 2008 through September 2016

Group	Category	2008	2009	2010	2011	2012	2013	2014	2015	2016
	Total Overtime Hours	244,901	209,761	279,398	303,059	266,081	233,213	335,342	270,207	297,689
	Total Straight-Time Hours	1,127,360	1,131,520	1,162,720	1,156,480	1,112,800	1,085,760	1,207,763	1,256,930	1,240,055
	Percent of Overtime	21.72%	18.54%	24.03%	26.21%	23.91%	21.48%	27.77%	21.50%	24.01%
C&M	Percentage of Storm Related Overtime (C&M Only)	38.59%	39.03%	52.56%	50.90%	42.21%	19.96%	39.43%	27.95%	34.56%
	Percentage of Non- Storm Related Overtime (C&M onlv)	61.41%	60.97%	47.44%	49.10%	57.79%	80.04%	60.57%	72.05%	65.44%
	- )/					_				
	Total Overtime Hours	184,243	157,651	205,480	237,894	206,055	191,830	258,692	227,382	214,292
	Total Straight-Time Hours	705,120	711,360	703,040	703,040	717,600	715,520	827,713	838,736	854,046
	Percent of Overtime	26.13%	22.16%	29.23%	33.84%	28.71%	26.81%	31.25%	27.11%	25.09%
DSO	Percentage of Storm Related Overtime (DSO Only)	34.16%	31.94%	41.50%	47.22%	42.54%	20.19%	36.31%	23.69%	26.19%
	Percentage of Non- Storm Related Overtime (DSO only)	65.84%	68.06%	58.50%	52.78%	57.46%	79.81%	63.69%	76.31%	73.81%

Note: Percentage of non-storm related overtime is for the individual department and not company-wide. Source: Data Requests EO-7 and EO-20

The majority of overtime in Regional C&M and DSO remains non-storm related, with the ratio of non-storm to storm related overtime increasing from an average of approximately 59% during the 2008-2013 period to 66% in the 2014 -2016 period for C&M, and from 64% to 71% for DSO over the same periods. Management indicated that major programs (e.g., PECO's deployment of new advanced electric meters in

2015) can garner substantial one-time planned overtime. Additionally, PECO has utilized overtime labor to reduce maintenance backlogs and complete Long Term Infrastructure Improvement Plan (LTIIP<sup>10</sup>) projects, both of which should increase reliability, and thus decrease the need for maintenance overtime. These programs utilized existing staffing levels and planned overtime to accomplish Company objectives that balance operational and labor requirements.

However, in recognition of the long term increased base workload associated with its LTIIP, PECO has analyzed and substantiated its additional labor requirements to gainfully employ an additional 60 aerial and 29 underground linemen over the next three to four years to support its operational needs as well as reduce planned overtime levels.

The audit staff considers 15% as a reasonable overtime benchmark for electric utilities, with 20% being acceptable during a year with substantial storm activity. Although PECO projects overtime utilization to drop in the near future, overtime utilization was 22% in 2016. Overtime can be effective for handling specific programs or short-term staffing needs but also can overburden existing employees. As presented above, PECO has taken various steps that should lead to reduced overtime levels in the future. However, the Company should continue to monitor overtime and consider additional measures should a reduction in overtime levels fail to materialize.

<u>Follow-Up Recommendation</u> – Continue to monitor overtime utilization and implement additional measures as necessary to optimize overtime levels.

<sup>&</sup>lt;sup>10</sup> PECO filed its LTIIP on March 27, 2015.

#### Finding No. VI-3

**Prior Situation** – The Business Planning and Support Department was tasked with providing contract and project management for approximately 5,000 to 7,000 projects and on average 100 scope change order requests annually with a staff of four Contract Coordinators. As a result, the Business Planning and Support Department was conducting the vast majority of project inspections remotely using advanced technology (i.e., tablets) on a risk-based approach rather than on-site. Although the Company's use of advanced technology was commendable, actual field presence was still necessary to ensure contracted projects met the Company's specifications, cost, and quality parameters. The audit staff estimated that it would take eight full time equivalents working as Contract Coordinators to meet PECO's established inspection goals.

**Prior Recommendation** – Improve/expand oversight of contractor performed work.

<u>Follow-up Finding and Conclusion</u> – Sufficient resources have been dedicated and process improvements implemented to provide adequate oversight of contractor performed work.

**Current Review** – As depicted in Exhibit VI-4, the number of contractor projects managed by the Business Planning and Support Department has increased steadily since 2008, with the possible exception of new residential construction because no prior data was available due to differences in invoicing/tracking. The total number of contractor projects managed has increased every year, rising from 4,220 projects managed in 2008 to 13,499 projects managed in 2016. As presented below, a majority of these increases are related to the inclusion of new residential construction projects.

#### Exhibit VI-4 PECO Energy Company Business Planning and Support Managed Projects by Project Type For the Years January 1, 2008 through September 2016

	2008	2009	2010	2011	2012	2013	2014	2015	2016
Aerial COC	130	198	828	504	224	537	582	410	504
Underground COC	347	315	374	433	428	563	1,011	1,278	1,396
Cable Injection	9	16	8	18	7	6	2	8	0
Aerial Secondary Cable Repair	482	423	769	619	406	513	838	648	627
Secondary Fault Locate and Repair	3,252	3,960	3,107	3,754	919	1,431	2,593	4,127	3,658
New Residential Construction					5,166	4,679	6,102	6,247	7,314
Total	4,220	4,912	5,086	5,328	7,150	7,729	11,128	12,718	13,499

Note: New Residential Construction data prior to 2012 is unavailable.

Source: Data Requests EO-21 and the 2014 Focused Management and Operations Audit

The Business Planning and Support Department hired three Senior Contact Coordinators (i.e., two in 2015 and one in 2016), going from four to the current total of seven Senior Contact Coordinators. This closely aligns to the eight (or four additional) Senior Contract Coordinators identified by audit staff in the 2014 Focused Management Audit<sup>11</sup> for PECO to complete two inspections per project. The numbers of business analysts, managers, and material clerks have remained unchanged. However, since the 2014 Focused Management Audit, PECO's workload in Business Planning and Support has also increased.

Despite the ratio of projects to Contract Coordinators effectively remaining the same, efficiencies of scale have helped to drive the Business Planning and Support Department's capability to handle more job completions per Contract Coordinator. Additionally, the 2014 Focused Management and Operations Audit also mentioned scope changes as a possible driver for an increased staffing need. Upon further investigation, scope changes only require 5 to 15 minutes of a Contract Coordinator's time, depending on complexity. Therefore, PECO's increase from an average of 100 scope changes per year from 2011 through 2013 to an average of 381 scope changes per year from 2016 translates to approximately one week of additional work hours.

<sup>&</sup>lt;sup>11</sup> The original recommendation from the 2014 Focused Management and Operations Audit was to add four Senior Contract Coordinators. This was based on PECO's managed contracts remaining at the same levels as the 2008 to 2012 period; with two Full Time Equivalents (FTEs) for back office type work and six FTEs to meet PECO's requirement of two inspections per contract at an assumed 1 hour per inspection and 2080 hours per FTE.

Furthermore, the Business Planning and Support Department no longer uses the PECO requirement for two inspections per contract documented in the 2014 Focused Management and Operations Audit. The Company now performs two inspections for larger projects and no official inspection for small projects. The small projects are generally short and low cost jobs, such as a four-hour secondary fault locate and repair at a customer's residence. In addition, random site visits are utilized on select projects to follow the progress of the work and interview contractor employees with a focus on safety and job performance. The manager of the Business Planning and Support Department estimates between 1,000 to 2,000 jobs per year require official inspections. PECO has successfully tested remote visual inspection through tablets, where the Contract Coordinator watches the live feed from a tablet held by the contractor in the field. Exelon is working on a methodology and guidance for this process, which should increase the efficiency of the Contract Coordinators in the future. Additionally, although there is no official project underway, PECO is considering creating tablet applications to help manage contract information.

PECO's Business Planning and Support Department also utilizes a metric, "Contract Coordinator percent time in the field," to monitor workload. The metric is used to ensure Contract Coordinators achieve a minimum field presence of 50 percent, which the Department as a whole and individuals are currently achieving. Based on the staffing level increases and process improvements, the audit staff believes that adequate oversight of contractor performed work has been established.

#### Follow-Up Recommendation – None
**Prior Situation** – While PECO's reliability performance had generally been better than the Commission's Benchmark and 12-Month Standard, there were a limited number of PECO customers that were experiencing a higher proportion of sustained interruptions. PECO had reliability programs specifically targeting Customers Experiencing Multiple Interruptions (CEMI) yet certain pockets of customers were still experiencing 10 or more outages per year. In addition, on average, roughly 5% of customers experienced 22% of the total outages from 2008 to 2011. PECO's CEMI for 2008 through 2013 is presented in Exhibit VI-5.





Source: Data Requests EO-17, 31, 47, and 52

<u>**Prior Recommendation**</u> – Reduce the number of customers experiencing four or more service interruptions in a year.

# <u>Follow-up Finding and Conclusion</u> – PECO has reduced the number of customers experiencing four or more service interruptions in a year, but customers experiencing 10 or more interruptions per year have increased.

**Current Review** – As depicted in Exhibit VI-6, PECO's reliability performance has been better than the Commission's Benchmark and the 12-Month Standard in every year since 2012. Additionally, since the 2014 Focused Management and Operations Audit CEMI has also improved from an average of 5.3% during the 2008-2013 time period to an average of 4.0% during the 2015-2016 time period,<sup>12</sup> as can be seen in Exhibit VI-7.

#### Exhibit VI-6 PECO Energy Company Electric Reliability Indices (excluding major events) For the Years January 1, 2008 through December 31, 2016

Year	SAIFI	SAIDI	CAIDI
2008	1.11	137	124
2009	1.04	110	106
2010	1.16	147	126
2011	1.22	165	135
2012	0.77	75	97
2013	0.69	63	91
2014	0.86	82	96
2015	0.72	61	84
2016	1	106	106
Benchmark	1.23	138	112
12-Month Standard	1.48	198	134

Source: DR-EO-11, DR-EO-22

SAIFI<sup>13</sup>, SAIDI<sup>14</sup>, and CAIDI<sup>15</sup> are indices used to determine system reliability

<sup>&</sup>lt;sup>12</sup> Data from 2014 was excluded due to unusually large ice storms that impacted many customers across the state.

<sup>&</sup>lt;sup>13</sup> SAIFI = System Average Interruption Frequency Index, a reliability index defined as the average number of interruptions that a customer would experience.

<sup>&</sup>lt;sup>14</sup> SAIDI = System Average Interruption Duration Index, a reliability index defined as the average outage duration per each customer served.

<sup>&</sup>lt;sup>15</sup> CAIDI = Customer Average Interruption Duration Index, a reliability Index defined as the average outage duration or the average restoration time for any given outage.





Sources: 2014 Focused Management and Operations Report, DR-EO-11, DR-EO-12, DR-EO-13, and DR-EO-22.

PECO's reduction in customers experiencing multiple interruptions can be attributed to efforts undertaken by the Company to improve reliability and reduce CEMI. PECO has been installing spacer cable, which protects against some outages caused by tree limbs. In addition, the Company has established LTIIP goals that improve reliability by replacing aging infrastructure, with one project focused specifically on CEMI. Moreover, in response to ice storms in 2014, PECO focused on storm hardening and blue sky trimming<sup>16</sup> efforts particularly in Bucks and Chester counties, where customers are more susceptible to storm outages. In 2016, in response to a series of vegetation interruptions, PECO increased vegetation management efforts, doubling the removal of threat trees compared to other years.

Further, PECO has focused on reliability by investing in distribution automation, specifically automated reclosers so that most circuits now have two reclosers and can re-energize from either end. PECO also created an online internal tool to track CEMI customers and events related to CEMI outages. This tool is designed to increase the visibility of these customers for PECO's regional engineers.

<sup>&</sup>lt;sup>16</sup> Blue Sky Trimming is the practice of trimming all vegetation straight up along a line so that the sky becomes visible over an area. No overhanging branches are left over this area.

#### Exhibit VI-8 PECO Energy Company Total Customers Interrupted Compared to CEMI For the Years January 1, 2008 through December 31, 2016

	Total Customers Interrupted	Number of Customers Experiencing 4 or More Outages/Year	Number of Customer Interruptions from CEMI
2008	1,732,392	91,158	453,957
2009	1,633,916	83,466	430,820
2010	1,825,113	89,028	447,241
2011	1,924,325	103,290	541,070
2012	1,306,178	125,893	200,223
2013	1,177,242	35,328	180,136
2014	1,481,388	192,374	964,884
2015	1,231,881	61,699	281,317
2016	1,623,883	66,366	320,995

Sources: DR-EO-11, DR-EO-12, DR-EO-13, DR-EO-22

Exhibit VI-8 above shows the impact of CEMI compared to total customers interrupted by year. It's important to note that CEMI data in Exhibits VI-7 and VI-8 include major event<sup>17</sup> data (in most cases weather related storms) while the customers interrupted does not. Still Exhibit VI-8 is a helpful comparison of overall performance indicating that a small percentage of customers account for a larger portion of total customer interruptions at PECO. Overall, PECO has made an improvement in CEMI, but many customers (approximately one in twenty-five) experience four or more outages per year. Exhibit VI-9 shows the number of customers experiencing multiple interruptions from 2014 to 2016 including those outages caused by major events.

<sup>&</sup>lt;sup>17</sup> A major event is defined by 52 PA Code §57.192(i) as an interruption of electric service resulting from conditions beyond the control of the electric distribution company (EDC) which affects at least 10% of the customers in the EDC's service territory during the course of the event for a duration of 5 minutes each or greater...



Exhibit VI-9 PECO Energy Company Number of Customers Experiencing Multiple Outages For the Years January 1, 2014 through December, 31 2016

In 2014 and 2016, there were approximately 3,900 and 2,600 customers, respectively, that experienced 10 or more outages per year. PECO's overall reliability continues to meet or exceed its Benchmark and 12 Month Standard for each of these years. However, the number of customers experiencing at least 10 interruptions per year reinforces that the Company needs to continue its efforts to monitor and take remedial action to mitigate to the extent possible those customers experiencing 10 or more outages. Meanwhile, Exhibit VI-10 below shows the number of customers experiencing multiple interruptions, excluding those associated with major storms, for the years 2014 through 2016.

Source: DR-EO-12, DR-EO-22B





Source: EO-12 CEMI Update

\*A major event is defined by 52 PA Code §57.192(i) as an interruption of electric service resulting from conditions beyond the control of the electric distribution company (EDC) which affects at least 10% of the customers in the EDC's service territory during the course of the event for a duration of 5 minutes each or greater.

CEMI is defined by the utility and may or may not include major event data, but it can be useful to examine the effects that major events have on system reliability. When comparing Exhibit VI-10 with Exhibit VI-9, it can be seen that major events are impacting CEMI significantly. For certain customers, major events or storms are often the reason why they are included within CEMI. This is highlighted in 2014, where only 30 customers experienced more than 10 interruptions when storm data is excluded, but almost 4,000 customers experienced 10 or more reportable interruptions when including major events. Clearly, events beyond PECO's control are driving a portion of the Company's CEMI performance but this data can be used to gauge if additional efforts could be taken to harden the system. For instance, vegetation management can reemphasize hazard tree removal on affected systems or equipment upgrades could improve overall customer experience. Regardless of the cause, PECO does and should continue to explore ways to mitigate CEMI, particularly for customers experiencing ten or more outages a year.

The audit staff recognizes that PECO has implemented numerous initiatives to address CEMI and made some progress on reducing overall CEMI counts; however, additional focus, effort, and time are still needed to reduce CEMI, particularly for those customers experiencing 10 or more reportable service interruptions in a year.

## <u>Follow-Up Recommendation</u> – Strive to eliminate the occurrences of customers experiencing 10 or more interruptions per year.

**Prior Situation** – The Top Priority Circuit (TPC) Program was using the following factors: Customer Interruptions, Customer Interruption Hours, Circuit SAIFI, and Circuit SAIDI. This was ideal for identifying circuits which significantly impact the overall distribution system and circuits with individual poor reliability, but additional factors such as CEMI had not been specifically incorporated into the TPC program. Consequently, circuits with high CEMI that are caused by reliability problems were not being addressed through the TPC Program.

<u>**Prior Recommendation**</u> – Incorporate additional factors into the top priority circuit program like Customers Experiencing Multiple Interruptions.

# <u>Follow-up Finding and Conclusion</u> – PECO has integrated CEMI into their Top Priority Circuit Program.

<u>**Current Review**</u> – PECO incorporated CEMI into the formula used to rank circuits in the Top Priority Circuit (TPC) Program in January 2015. This formula uses weighted scores for customer interruptions, customer interruption hours, circuit SAIFI, circuit SAIDI, and CEMI to identify circuits with large impacts to the overall distribution system, circuits with poor individual reliability, and circuits unduly affecting individual customers negatively. The new formula successfully incorporated CEMI into the top priority circuits, but the weighting factors have not been reviewed or adjusted since they were incorporated in January of 2015. The weighting factors provide a mechanism to balance the different components (i.e., customer interruptions, customer interruption hours, circuit SAIFI, circuit SAIDI, and CEMI) and can make a particular component more important than others. For instance, the SAIFI was assumed to generally be below 10 when the weighting factors for it were determined, but actual SAIFI levels have been less than 1 since 2012. Due to SAIFI always being on the lower end of the designed range, it may play a lesser role in determining TPCs than it did in 2012.

The TPC Program formula should be designed to select a balanced mix of circuits based on their impact to the system overall, as well as their individual performance, and their effect on individual customers. As the above SAIFI example indicates, the weighting factors along with the components can be modified to provide different results. Although a TPC Program should maintain some consistency, periodically reviewing the interplay between components and weighting factors, is essential to ensure the program is focused on the right mix of circuits. This review allows the TPC Program to support company objectives and goals more dynamically. The audit staff recommends that the weighting factors be reviewed at least every two to three years and components should be reviewed every five to ten years.

<u>Follow-Up Recommendation</u> – Review the weighting factors at least every two to three years and the components used every five to ten years in the Top Priority Circuit Program.

**Prior Situation** – PECO piloted an emergency trouble order interface with Chester County, which allowed Chester County 911 staff to create emergency orders that were electronically transmitted directly into PECO's Outage Management System. No other county had chosen to take advantage of the same capability. As a result, six out of the seven total county 911 centers serving areas supplied by PECO had to verbally relay information to PECO personnel so that emergency orders could be created within PECO's systems.

<u>**Prior Recommendation**</u> – Create enhanced tools/systems in partnerships with county 911 centers to provide interface capabilities during emergency situations.

<u>Follow-up Finding and Conclusion</u> – PECO has created emergency trouble order interface protocols, but not all counties in its service territory have taken advantage of them.

<u>**Current Review**</u> – An emergency trouble order interface is scheduled to be completed in April 2017 for Delaware County, which will allow Delaware County 911 centers to create emergency orders that will be transmitted directly to PECO's Outage Management System (OMS). This interface is a similar system to the one already in place for Chester County.

PECO conducts multiple training sessions for the counties on how to properly enter tickets into the trouble order interface. Occasionally, the county personnel will code a non-P/F1 incident as a P/F1 incident, but these types of misclassifications are far less harmful than classifying P/F1 incidents as non-P/F1. Besides the occasional miscoding, there have been no known problems with data entered by county 911 operators, and the tickets have been added to PECO's OMS without incident.

Philadelphia, Bucks County, and Montgomery County have expressed interest in obtaining similar capabilities, but have not yet agreed to participate in projects to implement the system due to their own constraints. In the meantime, PECO continues to work with all counties in its service territory to improve emergency call interfaces as the new interface offers a superior improvement over the prior, more manual system. More specifically, the new system allows Chester and Delaware Counties to directly add trouble tickets to PECO's OMS, speeding up dispatch and response times, and reducing time that 911 operators are spending entering these tickets.

### Follow-Up Recommendation - None

**Prior Situation** – PECO deployed its Mobile Workforce Management System in 2008/2009 which enabled field crews to access and close electronic work orders. However, before the work orders could be officially completed, managers reviewed the work orders to make sure they were complete and correct. Managers had to manually navigate several screens within the OMS to retrieve the closed outage order information to review the order for accuracy. These reviews usually occurred after a significant delay. Dispatchers, at their discretion, would review orders closed by the field personnel in real time, but the process also required substantial manual efforts for the review.

<u>**Prior Recommendation**</u> – Initiate efforts to improve and/or review outage orders closed by field crews.

# <u>Follow-up Finding and Conclusion</u> – PECO has not made system changes to facilitate electronic review but has performed additional training for its employees.

<u>**Current Review**</u> – The system for reviewing crew orders is essentially unchanged from the time of the 2014 Focused Management and Operations Audit. For non-storm orders, the ticket is assigned to a crew within PECO's mobile dispatch tool by the dispatcher. Upon job completion, the crew closes the ticket using a tablet. Alternatively, the dispatcher can close the ticket the same way within the mobile dispatch tool. To review a previously closed outage order, the dispatcher must log into the logging program for the OMS, retrieve the closure data, and compare it to the data from the mobile dispatch tool. The dispatcher will correct the data in PECO's OMS logging program to match the meter data if any discrepancy is noted (i.e., a record is made for any meters that experience a loss of power or upon power restoration). PECO is currently working on a project to have the meter data automatically update the OMS.

PECO has developed and implemented training on its mobile dispatch tool for aerial linemen. The training focuses on accessing and updating the lineman's work within the mobile dispatch tool. In the late spring and early summer of 2016, the training was performed for the second time with aerial linemen as a 3 to 4-hour training session. Apart from these two sessions, the same training material is also required as part of the onboarding training of every new operations employee. PECO plans to monitor individual crew performance and conduct retraining as necessary. These training sessions should help reduce mistakes and increase efficiency in ticket processing, but do not address the issue of the overly manual process of reviewing the tickets for errors.

Automation can dramatically improve accuracy, efficiency, and operability. PECO could improve the process for reviewing crew work tickets by: having the meter data automatically update the OMS logging system when power is lost or restored; or pulling data from both the OMS logging system and the mobile dispatch tool onto the same screen so dispatchers can review it on a real-time basis, without switching screens and navigating multiple menus to retrieve the data independently from each system. However, these are not the only two solutions and PECO should investigate and consider other potential options for improvement. In fact, the Company indicated that it is not only exploring these issues, but it is also considering the deployment of a new OMS. Therefore, the audit staff agrees that if a new OMS is deployed, it may be easier to build these capabilities into a new system rather than retrofit an old system that will soon be obsolete.

# <u>Follow-Up Recommendation</u> – Explore options to improve automation of field ticket closure and review.

**Prior Situation** – PECO provided contractors with various information when they performed work for the Company, such as the scope, specifications, and any other relevant information. However, the process for assembling and distributing work packets was, depending on the department, highly manual and paper intensive. Consequently, the Business Planning and Support Department had begun utilizing electronic work packets for its contractors in 2013, but this process was not found in other departments.

<u>**Prior Recommendation**</u> – Evaluate the process for providing work packets to contractors and automate if deemed feasible.

## <u>Follow-up Finding and Conclusion</u> – PECO has automated the process, where feasible, for providing work packets to its contractors.

<u>**Current Review</u>** – PECO implemented electronic work plans (EWPs) for its Vegetation Management Contractors during 2015. They also evaluated all Field Operations, Construction and Maintenance, and Distribution System Operations contracted work and implemented the automated work packages where it would be beneficial and feasible.</u>

EWPs include all documents required for a field crew to locate the jobsite, obtain permission from any property owners, perform the needed work, inspect the finished job, and track work progress and inspections. These EWPs are transmitted to the contractor crews by email and can generally be completed electronically. Regional Construction and Maintenance is the only group currently not using EWPs because of the need to mark-up paper-based copies of large format circuit diagrams. The process for non-electronic work packets is the same, except the paperwork is printed out and handed to the work crews, instead of emailed to them, and work is tracked within the OMS logging program, rather than through a series of emails containing the documentation.

PECO has automated the process for providing work packets to contractors and has generally deployed electronic work packets with a few exceptions. As a result, the process for the distribution of work packets is more efficient, and the Company will have an electronic audit trail of document transmittals.

#### Follow-Up Recommendation – None

### VII. GAS OPERATIONS

**Background** – The PECO 2014 Management Audit contained two recommendations within the Gas Operations functional area. The audit staff rated this functional area as needing moderate improvement. In this chapter, two prior recommendations and prior situations are reviewed and one follow-up finding and recommendation is presented.

### Finding No. VII-1

**Prior Situation** – PECO's Damage Prevention Department was responsible for maintaining, tracking and analyzing damage data to identify trends for both electric and gas facilities. Although the total number of gas line hits decreased by approximately 21% from 2008 to 2013, the number of PECO at fault hits remained relatively constant at 60% of total hits. This percentage was more than double the Pennsylvania natural gas distribution company average of 27% and the highest in the state. Furthermore, between 40 to 50% of all gas line hit damages at PECO were due to mapping inaccuracies.

The percentage of mapping error caused damages on plastic pipe had increased from 74% in 2008 to 88% in 2013 and PECO management indicated that it was primarily due to missing, degraded, or improperly installed tracer wire. PECO had implemented a new Geographic Information System (GIS) system with Global Positioning System (GPS) capabilities and undertaken several initiatives such as piloting a marker ball program and implementing new practices to decrease the number of hits due to mapping inaccuracies. However, the Company continued to struggle with "mapping inaccuracies", experiencing approximately 200 cases each year in which facilities were damaged due to inaccurate maps, with at least 80% of those on plastic pipe.

<u>Prior Recommendation</u> – Reduce gas line hit damages resulting from PECO mapping data errors, by mitigating mapping data errors and implementing an aggressive program to accurately locate facilities with an emphasis on plastic pipe.

# <u>Follow-up Finding and Conclusion</u> – PECO has undertaken several initiatives to reduce the number of gas line hits due to mapping inaccuracies but is still experiencing higher than average gas line hits, largely due to mapping errors.

**Current Review** – Following the 2014 Focused Management and Operations Audit recommendation, PECO implemented several initiatives to reduce gas line hits such as the usage of marker balls, vacuum excavation teams, a Record Accuracy Program, a new GIS, etc. More specifically, PECO initiated its marker ball program in 2015. Marker balls are installed over all new installations and where existing facilities are exposed, and are used to help locate underground pipe. Since its inception through December 31, 2016, PECO had installed approximately 21,000 marker balls in its service territory.

Additionally, during 2015, PECO purchased two vacuum excavation trucks to mitigate the risk of damaging underground facilities in trouble prone areas. PECO's Damage Prevention Supervisor reviews high profile tickets<sup>18</sup> and problem locates and deploys vacuum excavation trucks in those instances. In 2015 and 2016, the Company had completed approximately 800 jobs locating over 35,000 feet of main and over 70,000 feet of services using the vacuum excavation trucks. PECO plans to acquire two additional vacuum excavation trucks in 2017 and deploy one truck in each of its service counties. Another measure in the Damage Prevention Plan for 2017 is the mapping of services lines when new main is installed. PECO estimates this will verify the location of approximately 5,000 services a year.

Furthermore, PECO initiated the Record Accuracy Program in 2016 whereby the Company performs quality control audits of as-built submissions and gas facility records (GFRs) to verify the accuracy of the records. As of September 30, 2016, PECO reviewed 11,570 GFR submittals for quality and accuracy. In addition, PECO's locating contractor performs quality assurance/quality control (QA/QC) audits of its construction contractors in the field. These audits review documentation (e.g. construction plans, maps, work orders, etc.) of newly constructed mains and services for tracer wire continuity, marker ball placement, GFR accuracy, etc. During 2016, 40% of the QA/QC audits performed identified deficiencies (e.g., incorrect GFRs and missing tracer wire).

PECO Gas Operations tracks and monitors several key performance indicators (KPIs) with underground damage and third-party damage rate the two primary KPIs. The underground damage KPI tracks damages to underground gas facilities by all parties while the third-party damage rate tracks damages caused exclusively by third parties. For January 1, 2015 through September 30, 2016 (i.e., 21 months), PECO met its KPI targets for these two metrics for only three non-consecutive months for underground damages and four non-consecutive months for the third-party damage rate. Moreover, the total number of gas line hits increased by almost 30% from 2013 to 2016 as shown in Exhibit VII-1. The total number of gas line hits presented in Exhibit VII-1 includes hits by PECO crews, PECO contractors, third-party contractors and homeowners.

<sup>&</sup>lt;sup>18</sup> A high-profile ticket is PECO's designation for a PA One Call ticket that might require further action by a Damage Prevention Inspector.

#### Exhibit VII-1 PECO Energy Company Total Number of Gas Line Hits For the Years January 1, 2012 through 2016

	Total Number of Gas Line Hits							
	2012	2013	2014	2015	2016			
Marks Accurate	111	120	153	149	165			
Incorrect Marks	28	13	15	16	13			
Not Marked	21	8	16	13	26			
Mapping Inaccuracies	190	203	177	216	222			
Excavator Failed to Expose	5	0	0	2	0			
No Locate Request	53	61	84	82	83			
Insufficient Notification	11	5	5	6	0			
Shallow Facilities	22	0	16	16	14			
Installation Practices	10	0	10	0	0			
Total	451	410	476	500	523			
% Mapping Inaccuracies	42.1%	49.5%	37.2%	43.2%	42.4%			
% PECO at-fault	53.0%	54.6%	43.7%	49.0%	49.9%			

Source: Data Request GO-28

Line hits due to mapping errors as a percentage of total line hits has not improved since 2012 while the overall number and line hits attributable to mapping inaccuracies have increased to their highest levels in 2016. Furthermore, the audit staff analyzed the number of gas line hits over three different criteria commonly used in the natural gas industry: per 100 miles of main, per 1000 services and per 1000 locates. Based on the data provided by the Company, all three of the metrics have shown an increasing or worsening trend from 2012 to 2016 as presented in Exhibit VII-2.

#### Exhibit VII-2 **PECO Energy Company Line Hit Metrics** For the Years 2012 through 2016



Source: Data Requests GO-2, GO-3, GO-28

The audit staff also compared PECO's damage data with other similar sized Pennsylvania NGDCs analyzing the percentage of hits due to mapping errors as shown in Exhibit VII-3. As evident from the exhibit, PECO has had the highest percentage of hits due to mapping errors.



Exhibit VII-3

Source: Data Request GO-28 and Gas Safety Data

As part of a Commission Settlement reached at Docket Number C-2015-2479970 related to a 2014 house gas explosion in PECO's service territory, the Company agreed to develop a gas mapping plan consisting of several mapping initiatives. In 2016, PECO launched a pilot mapping program to capture sub-foot GPS coordinates for new construction and pipe replacement activity. After the pilot was completed, PECO determined that it was feasible to convert the data to a GIS system; however, the Company has not initiated this action, at least partly due to plans on migrating to a new GIS in late 2017. PECO has also begun working on the other initiatives resulting from the Settlement Agreement such as converting and conflating 11,000 Gas Quad maps into a GIS platform, deploying the Intergraph Visualization tool in November 2016, developing the Gas Facility Land Base Maintenance Pilot in December 2016, etc. However, PECO management indicated that it would likely take the Company 20 years to map out its entire gas system.

PECO management recognizes that it has struggled to address inaccurate mapping of facilities for over a decade as the Company continues to search for ongoing solutions for its mapping issues. Although the audit staff recognizes PECO's efforts to date, the Company should consider additional resources to comply with the settlement agreement and expedite the timeframe to improve mapping accuracy.

<u>Follow-up Recommendation</u> – Implement plans, programs, and initiatives designed to reduce the number of gas line hits resulting from mapping inaccuracies in a timely manner.

**Prior Situation** – In 2009, PECO initiated a Bare Steel Service Replacement Program (BSSRP)<sup>19</sup> to replace all its bare steel services and in April 2011, initiated the Accelerated Gas Infrastructure Modernization Plan (AGIMP) to increase its capital investment for replacing cast iron, wrought iron, ductile iron and bare steel mains. Furthermore, to take advantage of Act 11<sup>20</sup>, PECO filed a petition with the PUC in February 2013 for approval of its Long Term Infrastructure Improvement Plan (LTIIP) which concentrated replacement efforts on cast iron pipe that was less than eight inches in diameter, operated at elevated pressure, and was located in areas with greater population density.

Implementation of the AGIMP reduced PECO's replacement schedule for its cast iron mains from 100 to 27 years. However, no efforts had been made to improve the 65-year replacement rate for unprotected bare steel main which had experienced the highest number of leaks at PECO. Despite PECO's main replacement efforts, leak rates on a leaks per mile basis had increased for unprotected bare steel and cast iron mains.

<u>**Prior Recommendation**</u> – Accelerate the replacement rate of unprotected bare steel mains through a risk-based/prioritized schedule.

# <u>Follow-up Finding and Conclusion</u> – PECO has accelerated its main replacement rates for both cast iron and bare steel main<sup>21</sup>.

**Current Review** – On February 8, 2013, PECO submitted an LTIIP increasing its projected capital investment for replacing cast iron, wrought iron, ductile iron mains and bare steel mains and services by \$20 million annually. PECO planned to replace all its high risk cast iron mains and bare steel services in approximately 10 years (i.e., 2023) and the remainder of its cast iron and bare steel mains in approximately 34 years (i.e., 2047). After two years of successful implementation of its LTIIP, PECO submitted a modified LTIIP on February 4, 2015 accelerating the replacement timeframe of cast iron and bare steel main from 34 years to 20 years (i.e., 2035). To achieve this accelerated replacement rate, PECO planned to increase its approximate annual investment from \$34 million to \$61 million with a total LTIIP cost of \$534.4 million. Moreover, PECO planned to stay on pace with its bare steel service replacement rate of 10 years.

Exhibit VII-4 displays the miles of bare steel and cast/wrought iron mains replaced from 2012 through 2016 and the projected number of miles to be replaced from 2017 through 2022. As evident from the exhibit, PECO plans to replace bare steel mains at an average of 17 miles per year and cast/wrought iron mains at an average of 33 miles per year. Furthermore, PECO has replaced, on average, approximately 2,500

<sup>&</sup>lt;sup>19</sup> The BSSRP includes bare unprotected steel services only. PECO does not have any bare cathodically protected steel services.

<sup>&</sup>lt;sup>20</sup> Act 11 authorized the Public Utility Commission to approve a distribution system improvement charge (DSIC) which would expedite the recovery of reasonable and prudent costs to repair, improve, or replace eligible utility property. As a requirement of Act 11, an LTIIP must be filed with the Commission to establish a DSIC.

<sup>&</sup>lt;sup>21</sup> Bare steel main includes all steel main that is not coated (i.e., bare unprotected steel main and bare cathodically protected steel main).

bare steel services from 2012 through 2016 and plans to replace on average about 4,300 bare steel services annually over the next six years (i.e., 2017 through 2022).



Source: Data Request GO-15

The capital investments to accomplish the targeted miles of main and number of services are shown in Exhibit VII-5. The investment in main replacement has almost doubled between 2012 and 2016 and the Company plans to invest an additional \$450 million over the next five years to replace its cast/wrought iron and bare steel mains. Furthermore, from 2012 through 2016 PECO invested on average approximately \$4.5 million annually on replacing its bare steel services and plans to invest more than three times as much over the next five years, at the rate of approximately \$15 million annually.





Source: Data Request GO-6, GO-14, GO-23

In 2015, PECO replaced 33 miles of main, meeting its LTIIP goal, spending approximately \$41 million versus the projected \$38.4 million due to higher than expected contractor costs and municipal fees. PECO replaced fewer than expected bare steel services in 2015 because the mix of main replacements, leaks and blockages repaired impacted fewer bare steel services than expected. PECO has adjusted the bare steel service replacement targets for future years to meet the goal of replacing all bare steel services by end of year 2022.

PECO is utilizing the Distribution System Improvement Charge (or DSIC) as intended and is driving investment within its system. As a result, PECO has taken the necessary steps to accelerate the replacement of its cast iron, wrought iron, ductile iron and bare steel mains and services. Nonetheless, PECO should continue replacing its mains and services as outlined in its LTIIP through a risk-based schedule which should help reduce the risk frequency and the related consequence, resulting in less leaks and a safer environment.

### Follow-up Recommendation - None

### VIII. EMERGENCY PREPAREDNESS

**Background** – The PECO 2014 Management Audit contained one recommendation within the Emergency Preparedness functional area. The audit staff rated this functional area as needing minor improvement. In this chapter, the prior recommendation and prior situation are reviewed and five follow-up findings and five recommendations are presented. In addition, the audit staff deemed it prudent to perform an updated review of the Company's compliance with PUC regulations at 52 Pa. Code § 101 regarding physical security, cyber security, emergency response and business continuity plans as part of this audit.

To protect infrastructure within the Commonwealth of Pennsylvania and ensure safe, continuous and reliable utility service, effective June 2005, PUC regulations at 52 Pa. Code § 101 (Chapter 101) require all jurisdictional utilities to develop and maintain written physical security, cyber security, emergency response and business continuity plans. Furthermore, in accordance with 52 PA Code § 101.1, all jurisdictional utilities are to annually submit a Self Certification Form to the Commission documenting compliance with Chapter 101. This form, available on the PUC website, is comprised of 13 questions as shown in Exhibit VIII-1.

#### Exhibit VIII-1 Pennsylvania Public Utility Commission Public Utility Security Planning and Readiness Self Certification Form

Item No	Classification	Response (Yes – No – N/A*)
1	Does your company have a physical security plan?	
2	Has your physical security plan been reviewed in the last year and updated as needed?	
3	Is your physical security plan tested annually?	
4	Does your company have a cyber security plan?	
5	Has your cyber security plan been reviewed in the last year and updated as needed?	
6	Is your cyber security plan tested annually?	
7	Does your company have an emergency response plan?	
8	Has your emergency response plan been reviewed in the last year and updated as needed?	
9	Is your emergency response plan tested annually?	
10	Does your company have a business continuity plan?	
11	Does your business continuity plan have a section or annex addressing pandemics?	
12	Has your business continuity plan been reviewed in the last year and updated as needed?	
13	Is your business continuity plan tested annually?	

\* Attach a sheet with a brief explanation if N/A is supplied as a response to a question.

Source: Public Utility Security Planning and Readiness Self-Certification Form, as available on the PUC website at http://www.puc.state.pa.us/general/onlineforms/pdf/Physical Cyber Security Form.pdf

While conducting our Management Efficiency Investigation, the audit staff reviewed the most recent Self Certification form submitted by PECO to determine the status of its responses. Our examination of the Company's emergency preparedness included a review of the physical security plan, cyber security plan, emergency response plan, business continuity plan, and associated security measures. In addition, the audit staff performed inspections at a sampling of PECO's facilities. Due to the sensitive nature of the information reviewed, specific information has not been provided as part of the findings and recommendations.

### Finding No. VIII-1

**Prior Situation** – PECO conducted Vulnerability Assessments (VAs) on its most critical facilities and Security Site Assessments (SSAs) on all other facilities periodically, with frequency depending on facility criticality. Other inspections related to security were also routinely performed, or performed as needed. PECO conducted all VAs, SSAs, and inspections in-house. Although restricting information from VAs and SSAs is crucial to protect PECO and its facilities, conducting all assessments in-house deprived PECO of the outside expert perspective and insight of a qualified and vetted third party or agency.

**Prior Recommendation** – Periodically conduct VA/SSAs using outside resources.

# Follow-up Finding and Conclusion – PECO partnered with a trusted outside agency to conduct Vulnerability Assessments for selected facilities.

<u>**Current Review**</u> – PECO's Physical Security Department performs VAs and SSAs every three years regardless of criticality. PECO's VAs photographically document any issues discovered and compare existing conditions with PECO's Tier 1 security requirements. SSAs are similar to VAs, but with less documentation requirements and with issues noted without a comparison to PECO's Tier 1 security requirements. Furthermore, monthly site security follow-up inspections are performed to verify that any identified issues have been addressed. Also of particular note, PECO Physical Security engaged a trusted third party to conduct VAs at select PECO facilities, including several Tier 1 assets in response to the 2014 Focused Management and Operations Audit. Outside perspectives in the areas of security and emergency preparedness can help identify new or previously unidentified risks and provide additional insight. The externally performed VAs identified issues that differed from internal VAs. PECO did address these externally identified issues, strengthening the security of its facilities.

While PECO's progress is commendable, it would further benefit PECO to eventually have all of their Tier 1 assets assessed by a trusted outside agency or partner. Although PECO has the capabilities to perform VAs and SSAs internally, there are benefits to partnering with a reputable third party. The audit staff suggests that rotating these external parties for VAs periodically could be beneficial and generally improve security at PECO.

VAs should include at least partial physical penetration testing, or testing of all layers of physical security in real time conditions designed to minimize the potential for heightened awareness during the test. For example, personnel that know there will be a test on a certain day at a certain facility will be unusually vigilant and often will affect the outcome of the attempt. For this reason, it is beneficial for a very large window of time to be given to the workers and security personnel so that fatigue or routine will relax the state of hypervigilance that usually accompanies a test. Although PECO has high standards for their security and inspection process, it would benefit from further testing of their physical security measures in a manner that excludes risk of damage to their facilities and minimizes risk of injury to their personnel. These partial physical security penetration tests can either be coupled with VAs, or they can be conducted separately, and they should be conducted either by a trusted third party, or Exelon resources external to PECO.

<u>Follow-Up Recommendation</u> – Continue to explore the use of external partners when performing Vulnerability Assessments and related physical security tests.

# Additional Follow-up Finding and Conclusion – Minor deficiencies in physical security were noted during inspections of PECO's non-critical facilities.

**Current Review** - As discussed in Follow-up Finding and Conclusion No. 1, PECO conducts internal VAs and SSAs periodically and has worked with a trusted third party to conduct VAs of selected facilities. As part of its review, the audit staff randomly inspected several PECO facilities, including office, storage, and operations facilities. The audit staff review focused on facility compliance with respect to the Physical Security Plan, as well as identification of any other vulnerability. As inspections were conducted, various minor vulnerabilities or deficiencies in physical security were noted at several non-critical facilities and discussed with PECO's facility managers and security team. Most of the deficiencies identified were due to facility age, oversight, weather, or general wear and tear and were highlighted during the inspection.

Physical security should be continuously reviewed and inspected and any deficiencies should be addressed as soon as possible. Although there is a multi-layered approach to security at PECO facilities, deficiencies in individual layers of security could render the layer ineffective, so these issues should be remediated in the interest of maintaining effective security.

### Follow-Up Recommendation – Correct minor physical security deficiencies.

# <u>Additional Follow-up Finding and Conclusion</u> – PECO and Exelon's data security could be improved by including the concept of "combination of data."

<u>Current Review</u> – According to Exelon's procedures (applicable to PECO) regarding Personally Identifiable Information (PII), PII is identified as a category of restricted confidential information where an individual's name is combined with his or her Social Security Number, Driver's License, number, state identification card number, bank account number, credit card or debit card number, or unique biometric data. Exelon's definition of PII also includes Protected Health Information (PHI), which is defined as information in a medical record that can be used to identify an individual, and that was created, used, or disclosed in the course of providing a health care service, such as diagnosis or treatment. PHI considers the concept of "combination of data," which is when two or more otherwise innocuous pieces of data can become PII when combined. This includes, for example, the combination of name and birth date, or address and mother's maiden name, or any other combination of data that can be used to personally identify an individual or bypass common password reset security features. Exelon's definition of PII does contain all of the elements of PII in Pennsylvania's Breach of Personal Information Notification Act (73 P.S. §§ 2301, et seq. Although PHI considers and includes the concept of, "combination of data," Exelon's definition of PII does not include this concept outside of medical records.

Because the concept of, "combination of data," was not included in Exelon's definition of PII during field work, PECO was not required to track data points from the customer which may be considered PII when the concept of, "combination of data," is applied. Therefore, PECO is currently unaware if it is securing such data in keeping with this concept. Instead the Company should explore if any conditions of "combination of data" is present within its systems and deploy appropriate safeguards where needed.

<u>Follow-Up Recommendation</u> – Review and revise PECO's data security policies to include, "combination of data," and identify any additional data elements that PECO should consider PII pursuant to this concept.

# Additional Follow-up Finding and Conclusion – PECO does not designate critical staffing requirements within its Business Continuity Plans.

**Current Review** – It is a best practice for a Business Continuity Plan (BCP) to include critical staffing levels for all major business functions. This allows a company to plan for staffing in an emergency, and to predict which business functions will be hindered or rendered inoperable due to a loss of personnel. Although it is an important part of continuity planning, PECO does not currently have critical staffing requirements within its BCPs. PECO's Business Planning Group did indicate that it is running an impact analysis for loss of personnel, and are planning to implement a tool in 2017 that will utilize the impact analysis to designate the number of required personnel per work group in their BCPs. Without identified critical staffing requirements, there could be additional confusion or complications when implementing the BCP during an emergency situation, mismatched resources for critical functions, or fruitless efforts by a few employees when more personnel are needed.

<u>Follow-Up Recommendation</u> – Integrate critical staffing requirements into the BCPs for all major business functions.

### IX. MATERIALS MANAGEMENT

**Background** – The PECO 2014 Management Audit contained one recommendation within the Materials Management functional area. The audit staff rated this functional area as needing moderate improvement. In this chapter, one prior recommendation and prior situation are reviewed and one follow-up finding and follow-up recommendation are presented.

### Finding No. IX-1

**Prior Situation** – PECO categorized inventory into Capital and O&M inventory classifications. Both classifications were further split into non-emergency reserve (non-ER) and emergency reserve (ER). The Company periodically reviewed inventory levels through several different processes (e.g., quarterly inventory reviews, critical inventory reviews, etc.) As of December 31, 2013, PECO had approximately \$2.7 million in the non-emergency O&M reserve and an additional \$4.5 million in the emergency O&M reserve, which had zero items issued during the previous 24 months. During this two-year period, PECO issued 32% of its emergency and 38% of its non-emergency inventory items. Meanwhile, emergency reserves had accounted for as much as 49% of total O&M inventory. It should be noted that PECO employs a Vendor Managed Inventory/Integrator Model (VMI), in which a third-party is contracted to maintain, manage, and supply fast moving/high turnover items.

<u>**Prior Recommendation**</u> – Perform a periodic comprehensive system-wide review of emergency and inactive inventory and eliminate inventory, as appropriate.

## <u>Follow-up Finding and Conclusion</u> – Process improvement opportunities exist to enhance PECO's comprehensive system-wide inventory review.

**Current Review** – In 2015, Supply Operations<sup>22</sup> generated a report containing all Capital and O&M materials across PECO Operations with no activity for more than five years (i.e., Capital ER, Capital non-ER, O&M ER, and O&M non-ER)<sup>23</sup>. Engineering groups comprised of employees from each of PECO's business lines were responsible for conducting an inventory analysis based upon these reports. The materials were divided into three separate areas (i.e., Gas, Electric, and Transmission). Material reviews of the Gas and Electric (including cable and wire) categories were each completed in August 2015. Meanwhile, the engineering group assigned to the Transmission category had reviewed 82% of the category's materials as of December 2016. PECO indicated the Transmission category contained nearly 2,000 material codes, significantly more than the other two categories.

<sup>&</sup>lt;sup>22</sup> Exelon BSC embedded department

<sup>&</sup>lt;sup>23</sup> See page 97 of the 2014 Focused Management and Operations Audit of PECO Energy Company (Docket No. D-2013-2370921) for more information on the differences between the Company's inventory types.

As a result of this analysis, PECO eliminated 50 O&M inventory items valued at approximately \$67,000<sup>24</sup>, and one item from Capital non-ER of immaterial value. Moving forward, PECO plans to continue conducting quarterly reviews of remaining material with inactivity of 5 years. Exhibit IX-1 below compares the value of eliminated O&M inventory to the value of inventory with various inventory levels including no activity for five or more years as of September 30, 2016.

#### Exhibit IX-1 PECO Energy Company Comparison of Eliminated O&M inventory to Inactive and Overall O&M Inventory Levels As of September 30, 2016

O&M Account	Eliminated	> 24 Months	Pct.	> 60 Months	Pct.	2016 YTD*	Pct.
Emergency	\$37,861	\$6,157,620	0.61%	\$3,676,910	1.03%	\$12,353,717	0.31%
Non-Emergency	\$28,799	\$4,233,379	0.68%	\$1,956,707	1.47%	\$13,943,670	0.21%
O&M Total	\$66,660	\$10,390,999	0.64%	\$5,633,617	1.18%	\$26,297,387	0.25%

Source: Data Requests MM-1, MM-2, and MM-4

\* Average Month-End Inventory from January through September 2016

As highlighted in Exhibit IX-1, the amount of O&M inventory eliminated through this analysis was approximately 1% of O&M inventory with five or more years of inactivity and roughly 0.25% of overall O&M inventory. For this analysis, Supply Operations identified material for the various engineering groups (i.e., Gas, Electric, and Transmission) to review and make a determination if the material was still useful or needed. PECO Management indicated the primary focus for its analysis was to identify obsolete material. Obsolescence was an appropriate issue to tackle with roughly 30% of O&M ER and 14% of O&M non-ER inventory being inactive for five or more years. However, the audit staff contends that there is opportunity to enhance the review process.

The audit staff recognizes that PECO's VMI creates a unique situation where by nature, PECO will manage a higher percentage of slow moving inventory. For instance, PECO's current O&M ER inventory is approximately 47% of overall O&M inventory as of September 30, 2017. Meanwhile, emergency reserve and obsolete inventory levels of approximately 10-20% and 1%, respectively are typical industry benchmarks. The VMI model makes it unfair to compare PECO in its current form to these industry benchmarks. Nonetheless, audit staff questions how non-emergency inventory can remain inactive for five or more years and not be obsolete. Instead, material is either critical to the system (i.e., emergency stock) or it's no longer needed.

As highlighted in the Management Audit and briefly discussed above, PECO performs various analysis on its inventory and consistently performs at a high level on

<sup>&</sup>lt;sup>24</sup> 20 inventory items valued at \$37,861 from emergency O&M and 30 inventory items valued at \$28,799 from nonemergency O&M

metrics like inventory turnover, inventory accuracy, etc.<sup>25</sup> However, obsolescence is a topic that must be continually investigated and occasionally challenged. The audit staff believes PECO could improve its process of reviewing obsolescence through one of two methods. First, PECO could require the engineers to substantiate via documentation the retention of any material designated for review by Supply Operations that hasn't moved in five years. This documentation would enable Supply Operations or senior management to discuss attributes of the material in question and possibly further define the need for the material. In addition, this process should hopefully hasten future reviews since a valid reason would simply be revisited instead of synthesized every quarter. The second option would be to integrate Supply Operation and Engineering reviews of material that hasn't moved in five years into a single process/analysis so that logistical and engineering concerns can be weighted at the same time. This combined approach is more robust but should not be undertaken every quarter. Instead, an initial analysis should be completed and then subsequent analysis should occur as new inventory is added or roughly every 1 to 3 years.

<u>Follow-up Recommendation</u> – Enhance the inventory review process by documenting justification for inventory retention of inactive inventory or conducting Engineering reviews, with support from Supply, of inactive material.

<sup>&</sup>lt;sup>25</sup> See the Focused Management and Operations Audit of PECO Energy Company issued September 2014 at Docket No. D-2013-2370921

## X. CUSTOMER SERVICE

**Background** – The PECO 2014 Management Audit contained three recommendations within the Customer Service functional area. The audit staff rated this functional area as needing moderate improvement. In this chapter, all three prior recommendations and prior situations are reviewed and three follow-up findings are presented.

### Finding No. X-1

**Prior Situation** – PECO's Customer Service goals, established in 2012, focused on the achievement of first quartile performance in overall customer satisfaction.<sup>26</sup> However, while reaching that milestone in nationwide perception based surveys; PECO's 2012 transactional-based statewide customer service performance was below the Pennsylvania Electric Distribution Company (EDC) average.<sup>27</sup>

<u>Prior Recommendation</u> – Strive to achieve transactional customer service satisfaction levels equal to or greater than the Pennsylvania Electric Distribution Company average, through continued training, first call resolution, process improvements, etc.

# <u>Follow-up Finding and Conclusion</u> – PECO has achieved transactional customer service satisfaction levels equal to or greater than the Pennsylvania Electric Distribution Company average.

**Current Review** –Annually, the PUC's Bureau of Consumer Services publishes a Customer Service Performance Report that includes data on certain customer service performance metrics, including customer satisfaction levels with the Pennsylvania EDC's handling of recent interactions with customers.<sup>28</sup> Between 2012 and 2015, PECO's transactional customer service satisfaction levels reflect overall improvement, as presented in Exhibit X-1. Moreover, as illustrated below, PECO's 2015 customer service satisfaction levels are, generally, equal to or greater than the 2015 Pennsylvania EDC average.

<sup>&</sup>lt;sup>26</sup> First quartile performance is based upon perception based surveys from groups like JD Powers. PECO earned first quartile in JD Power's 2012 survey.

<sup>&</sup>lt;sup>27</sup> Approximately 98% of PECO's customer base receives electric service from PECO, either as a stand-alone service or in combination with PECO's natural gas service. As such, the audit staff evaluated PECO's transactional customer service performance in comparison with other Pennsylvania EDCs.

<sup>&</sup>lt;sup>28</sup> As required under 52 Pa Code § 54.154







Source: Customer Service Performance Report 2013, Customer Service Performance Report 2014 and Customer Service Performance Report 2015

PECO implemented a number of changes to improve its transactional customer service satisfaction levels to those commensurate with the Pennsylvania EDC average. In 2013, PECO adjusted the hours of availability for its Customer Contact Center, which provided an additional eleven hours of availability for its customers each week. PECO also increased the number of hours of annual training for its Customer Service Representatives, including refresher training on high volume type calls (high bill, outages, etc.), skill development, business literacy training, and demand-based topics (i.e., software upgrades, regulations, etc.). In addition, PECO began monitoring call metrics to focus on first call resolution. Repeated customer calls<sup>29</sup> are tracked to identify subject matter for training aimed at more effectively meeting customer needs on

<sup>&</sup>lt;sup>29</sup> First Call Resolution tracking metrics include calls made to the Company within prescribed timeframes (i.e., same day, 3 days, etc.) from the same contact number.

the first call. Therefore, first call resolution provides customers with an improved customer experience by eliminating the need for additional contacts relating to the same issue.

PECO has also enhanced its self-service portals, updating its processes to create a more intuitive environment for its customers. Self-service portals include PECO's advanced interactive voice response system (IVR) and Company website, which provide self-service options for customers via telephone and internet. PECO's advanced IVR automatically identifies the customer's account by contact number. streamlining the account verification process. The advanced IVR's self-service options have also been expanded to include payment arrangements, payment extensions, and generation of customer reports<sup>30</sup>. Similarly, PECO's website has been updated for ease of use, automatically adjusting and resizing when accessed by a mobile device. In addition, PECO has streamlined its website processes for customers to set up online accounts and apply for new service. Further, PECO introduced a Preference Center option for customers with online accounts who elect to be contacted via text message, e-mail, etc. by PECO in certain instances (i.e., outage alerts, estimated restoration time, etc.). All these efforts have allowed PECO to improve its customer interface and have resulted in the Company achieving customer service performance levels commensurate to the Pennsylvania EDC average performance in 2015.

### Follow-up Recommendation - None

<sup>&</sup>lt;sup>30</sup> Utility reports are comprised of the customer's account record information including payment history, amount owed, prior payment agreements, and results of the most recent payment negotiation between the utility and the customer.

### Finding No. X-2

**Prior Situation** – PECO's residential customer long-term (i.e., greater than 120 days) arrearages had increased for the years ended December 31, 2011 through 2013. More specifically, arrearages greater than 366 days had increased steadily rising by 40% for this same time period. The Company contended this was partially attributed to the expiration of its residential electric heat rate class in 2012 which resulted in both heat and non-heating customers paying the same rate. The Company experienced a 30% increase in payment arrangements which consequently drove arrearages higher.

**Prior Recommendation** – Strive to reduce long-term residential customer arrearages by conducting analysis to explore the enhancement of existing payment programs and collection policies.

# <u>Follow-up Finding and Conclusion</u> – PECO has reduced long-term residential customer arrearages.

**Current Review** – PECO successfully improved its long-term (i.e., greater than 120 days) residential customer arrearages between 2013 through September 2016. The fourth quarter of 2016 was excluded from the period of review due to data anomalies<sup>31</sup> associated with implementation of a special one-time arrearage forgiveness and repayment program in October 2016.<sup>32</sup> Therefore, the audit staff analyzed and presented PECO's residential accounts receivable (A/R) aging schedule in Exhibit X-2 for the years ending December 31, 2013 through 2015 and September 30, 2016. As shown in Exhibit X-2, A/R balances aged 121 days to 365 days have decreased by \$15.9 million and A/R balances aged over 365 days have decreased by \$5.1 million. PECO attributes the improvement to the enhancement of its credit and collections processes including: improved payment options for customers, changes to payment arrangement procedures, remote termination and restoration technologies, and a specialized focus on accounts with high balances.

<sup>&</sup>lt;sup>31</sup> The program reset approximately \$30 million in past due balances as current balances in October 2016, degrading PECO's December 31, 2016 accounts receivable aging in the 61-90 day category. Conversely, the resetting of these balances produced nearly equal improvement to PECO's remaining residential accounts receivable aging categories.

<sup>&</sup>lt;sup>32</sup> The program offers arrearage forgiveness of two-thirds of the outstanding amount, forgiven over five-year repayment terms. As such, a significant portion of the program balances will return to the long- term aging categories, prior to gradually resolving through the collection of installments and the write-off of the proportionate forgiveness credits during the term of the program.

#### Exhibit X-2

#### PECO Energy Company Residential Customer Accounts Receivable Aging Schedule For the Years Ended December 31, 2013 through 2015 and For Nine Months Ended September 30, 2016

Voor	Number of Days Past Due									Total Accounts		
Tear	0-30	31-60 61-90		61-90	91-120		121-365		366+		Receivable	
2013	\$ 182.9	\$ 32.	3 \$	15.8	\$	11.4	\$	34.9	\$	16.1	\$	293.4
2014	\$ 163.7	\$ 27.	) \$	14.7	\$	10.3	\$	32.5	\$	14.7	\$	263.1
2015	\$ 127.7	\$ 26.	4 \$	14.5	\$	9.6	\$	25.1	\$	11.2	\$	214.4
2016	\$ 189.4	\$ 33.	) \$	10.8	\$	6.1	\$	19.0	\$	9.0	\$	267.4

Source: Data Request CS-5

More specifically, PECO reduced its credit card customer payment fee in 2014 as a result of negotiations with its third-party vendor from \$3.50 to \$2.35 per transaction. PECO also implemented a zero-cost automated clearing house (ACH) transaction option for those customers opting to utilize the customer portal on PECO's website. Further, as mentioned previously in Follow-up Finding and Conclusion X-1, PECO enhanced its self-service portals, streamlining processes and improving overall customer experience and satisfaction.

Also in 2014, PECO implemented changes to its payment arrangement procedures, requiring a minimum 20% down payment on arrearages prior to establishing a payment arrangement for the majority of agreements. However, for customers who have a history of defaulted payment arrangements<sup>33</sup>, subsequent payment arrangements generally require a substantially higher down payment prior to issuance. In addition, PECO customers with delinquent accounts<sup>34</sup> and/or accounts terminated for non-payment are generally required to remit a deposit in accordance with 52 Pa. Code § 56.291. As discussed in more detail in Follow-up Finding and Conclusion X-3, PECO has also implemented a number of changes in its payment arrangement procedures for its Customer Assistance Program participants.

Moreover, PECO has expanded its utilization of remote disconnect and reconnect technology for electric distribution services. Use of this technology has improved PECO's ability to successfully complete terminations and restorations of electric service through the reduction of meter access issues. Because of the technology, PECO's UTC (Unable to Complete) rate<sup>35</sup> fell from 30% in 2013 to less than 9% in 2016. Further, both the number of terminations and restorations increased from 2013 through 2015. Termination for non-payment ensures customer accountability for delinquencies and provides the utility the ability to restrict the accumulation of arrearages.

<sup>&</sup>lt;sup>33</sup> PECO considers its payment arrangements in default at the point of termination for non-payment.

<sup>&</sup>lt;sup>34</sup> Delinquent accounts are defined as accounts where late payments have occurred in any two consecutive months or three or more bills within the preceding 12 months.

<sup>&</sup>lt;sup>35</sup> The UTC rate is a ratio determined by dividing the number of incomplete termination work orders by the total number of termination work orders.

Finally, PECO implemented a Delegation of Authority (DOA) process to more effectively address high balance delinquent accounts. The DOA requires accounts with delinquent balances in excess of \$5,000 to be addressed by a Credit and Collections Specialist (CCS). Each high balance delinquent account is assigned to an individual CCS, which provides improved customer service and increases accountability. PECO tracks its high balance delinquent accounts in two categories: accounts in excess of \$5,000 and accounts in excess of \$10,000. As a result of the DOA process, delinquent residential accounts in excess of \$10,000 have been reduced from more than 200 accounts in 2014 to 26 accounts as of December 2016. Similarly, PECO has reduced its total number of accounts with delinquent balances in excess of \$5,000 from over 7,500 in 2014 to approximately 5,500 in 2016.

PECO's net charge-off levels for bad debt have remained relatively constant from 2013 through 2016, confirming the effectiveness of PECO's newly implemented collections practices. The timely collection of delinquent balances reduces the risk of loss from non-payment by customers and the audit staff contends PECO's long-term accounts receivable arrearages (i.e., 121-365 days and 366 days and over) reflect marked improvement. Overall, as a result of the changes implemented by PECO, the Company has significantly improved its accounts receivable collections and thereby reduced its overall risk of lost revenue.

### Follow-up Recommendation - None

### Finding No. X-3

**Prior Situation** – PECO's procedures included protections to restrict termination in adherence with 52 Pa. Code Chapter 56 and 66 Pa. C.S. Chapter 14, and allowed CAP participants to establish deferred payment arrangements (DPAs) for overdue CAP balances accrued during the winter season (December 1 – March 31), billing disputes and medical certification exemption periods. DPAs allowed for long-term repayment schedules for up to 60 months and many CAP customers were receiving newly established DPAs each year. PECO's utilization of DPAs resulted in higher overall CAP bills which included both the cost of repayment for CAP arrearages and the current amount due, increasing the likelihood of their total utility costs to exceed affordability parameters as prescribed by 52 Pa. Code § 69.265(2). While PECO's CAP participation rate experienced an 8% increase between 2008 and 2012, the number of new DPAs increased approximately 52% during the same timeframe.

**Prior Recommendation** – Initiate additional measures to reduce the utilization of deferred payment arrangements for Customer Assistance Program (CAP) participants and decrease the Company's balance of outstanding customer accounts receivable balances.

<u>Follow-up Finding and Conclusion</u> – PECO has decreased its utilization of deferred payment arrangements for Customer Assistance Program participants and reduced the balance of its outstanding customer accounts receivable balances.

**Current Review** – Late in 2013, PECO conducted a Low-Income Summit<sup>36</sup> to evaluate possible strategies to improve collections performance while minimizing the adverse impact to low-income customers. The Low-Income Summit also addressed the Management Audit recommendation to reduce the use of DPAs for CAP participants. As a result, several changes to PECO's CAP payment agreement procedures were implemented beginning in 2014. This included requiring income verification if it was unverified in the previous 6 months, requiring a 20% down payment on in-program arrearages for a subsequent DPA, and the inclusion of the CAP agreement for preprogram arrearages as the participant's only required payment arrangement. As shown in Exhibit X-3, newly issued DPAs for CAP participants declined significantly from 2013 through 2015 in response to the updated procedures. Moreover, as also demonstrated in Exhibit X-3, the number of DPAs sharply declined during 2016.

<sup>&</sup>lt;sup>36</sup> PECO's Low-Income Summit included personnel from multiple departments including: Customer Care, Customer Financial Operations, Legal and Regulatory.





In October 2016, changes to PECO's CAP took effect, which resulted in the significant decline of DPAs. PECO's new CAP design is outlined in its 2016-2018 Universal Service and Energy Conservation Plan at Docket No. M-2015-2507139. At the direction of the Commission, PECO conducted evaluations of alternative CAP designs and on July 8, 2015, the Commission approved PECO's settlement agreement for a fixed credit option (FCO) CAP. As such, PECO's CAP migrated from a multiple tier format under the previous CAP (Legacy CAP) to the FCO in October 2016. Under the FCO, CAP participants receive a bill credit based upon the difference between their actual energy costs and their maximum energy burden<sup>37</sup> percentage.

As mentioned previously, the additional cost of installments resulting from DPAs inflated the total cost of the CAP participant's utility bill, which increased the likelihood for PECO's CAP participants to receive bills above affordability guidelines. This in turn likely contributed to the escalation in long-term residential accounts receivable balances described in the Prior Situation of Follow-up Finding and Conclusion X-2. To address the adverse impact to CAP participant's energy burdens, the Company offered a special, one-time payment agreement for in-program arrearage forgiveness (in-PA). In tandem with PECO's introduction of the FCO, PECO's CAP in-PA replaced existing DPAs.

As discussed in Follow-up Finding and Conclusion X-2, in-PA was offered in October 2016, and in total, 68,531 in-PA agreements were issued after October 2016.

<sup>&</sup>lt;sup>37</sup> Energy burden is the maximum percentage of income (expressed as a range) affordably expensed for electric and/or gas service as prescribed by 52 Pa. Code § 69.265(2) and varies depending upon Federal Poverty Level and heating type.
Under in-PA, the customer pays one-third of the arrearages from the DPA under the Legacy CAP over a 60-month term, with two-thirds of the balance forgiven incrementally over the same period.

Due to the design of the FCO, the number of newly issued DPAs for CAP participants is anticipated to be significantly reduced. The Legacy CAP was a rate discount program with seven tiers, the discount rate varied by tier, with the lowest income participants receiving the highest discounted rate. Under the Legacy CAP, a customer who experienced an income reduction was eligible for a newly issued DPA if the reduction impacted their tier level. As of October 2016, the tiers have been replaced by the FCO, and a reduction in income would be limited to the change in CAP credits applied to their monthly bill and therefore would not result in a new DPA. The CAP participant will still receive the appropriate discount under the FCO but will remain in the same DPA to satisfy the outstanding in-program arrearages.

Because of the newly implemented payment arrangement procedures and transition to the FCO, the availability of DPAs for CAP participants will be nearly eliminated.<sup>38</sup> As mentioned previously, specific circumstances (i.e., Pennsylvania Regulations at 52 Pa. Code Chapter 56 and 66 Pa. C.S. Chapter 14) suspend termination for a limited timeframe. As such, CAP participants may temporarily accumulate in-program arrearages without being subject to termination for non-payment. However, under the FCO, upon expiration of those protections, the entire arrearage must be satisfied to maintain utility service, regardless of changes to the CAP participant's income levels. Therefore, the Company encourages its customers to make regular timely payments. PECO uses its LIHEAP<sup>39</sup> outreach events to provide information and applications for Federal assistance to aid low-income customers in making timely utility payments. In addition, in February 2017, PECO sent over 50,000 delinquent customers<sup>40</sup> a mailer with contact information on grants and informed them that they could be subject to termination for non-payment.

<sup>&</sup>lt;sup>38</sup> Certain provisions for payment arrangements exist under Pennsylvania regulations (i.e., billing errors made by the Company, outstanding amounts due to budget billing, etc.).

<sup>&</sup>lt;sup>39</sup> LIHEAP (Low Income Home Energy Assistance Program) is a Federal program designed to provide temporary assistance to low income households to maintain utility service, including electric and natural gas.

<sup>&</sup>lt;sup>40</sup> Delinquent customers included regular customers as well as confirmed low-income customers.

## XI. FLEET MANAGEMENT

**Background** – The PECO 2014 Management Audit contained two recommendations within the Fleet Management functional area. The audit staff rated this functional area as needing minor improvement. In this chapter, two prior recommendations and prior situations are reviewed and three follow-up findings and follow-up recommendations are presented.

#### <u>Finding No. XI-1</u>

**Prior Situation** – PECO had developed a risk-based model to support the Fleet Department's vehicle replacement decisions. The model used a weighted average of maintenance cost, down-time, and vehicle age to assess vehicles by class and identify the 100 to 125 worst performing vehicles in the fleet. However, PECO did not document the risk-based model or selection criteria in any policy or procedure. Guidelines for vehicle replacement were limited to Exelon's Vehicle Replacement Policy, which provided only general guidelines for the acquisition of new or replacement vehicles.

<u>Prior Recommendation</u> – Document a comprehensive PECO vehicle replacement policy incorporating its current practices to supplement the Exelon BSC vehicle replacement policy.

## <u>Follow-up Finding and Conclusion</u> – Exelon documented a comprehensive vehicle replacement policy that incorporated PECO practices.

<u>**Current Review</u>** – The PECO Fleet Department had oversight responsibility for 1,420 vehicles and pieces of equipment as of December 31, 2016 and replaces approximately 115 vehicles annually. In October 2013, the Department purchased a vehicle replacement module (VRM) to provide additional analysis in the replacement process. This software replaced the Company's risk rank model and is designed to incorporate all vehicle information, maintenance costs, acquisition and disposal costs, etc. to determine vehicle life cycles and produce vehicle replacement schedules. The Company first ran the module in 2014 to create a list of vehicle replacement candidates for 2015.</u>

In 2015, Exelon documented the VRM in an updated vehicle replacement procedure. This procedure provides high-level and step-by-step guidelines of the processes, roles, and responsibilities associated with vehicle replacement at PECO. In addition to the VRM, the procedure includes end user needs and priorities, mechanic evaluation, and amortization balance as the criteria to be used by the Fleet Manager to identify vehicle replacements.

Reliable and well maintained vehicles are essential to the effective operations of utilities. Informed vehicle replacement decisions are crucial to fleet reliability, efficiency and cost control. Institutionalizing PECO's vehicle replacement activities into documented policies and procedures promotes continued adherence to established

guidelines, helps ensure fleet performance and efficiency and protects against knowledge retention issues arising from retirement and promotion.

### Finding No. XI-2

**Prior Situation** – Between 2008 and 2013, many of PECO's fleet maintenance performance goals were not being met despite being written into the contract with its third party contractor. PECO had actively taken steps to improve its fleet performance as part of a September 2013 contract extension; renegotiating contract terms to include quarterly financial penalties for not meeting certain performance goals, and including costly rust repairs as a regular priced maintenance item. However, any resultant changes could not be assessed before the close of field work.

**Prior Recommendation** – Strive to meet key fleet performance indicator goals.

# <u>Follow-up Finding and Conclusion</u> – PECO successfully met its goals or achieved significant improvement on all key performance indicators.

**Current Review** –KPIs are used to adequately and objectively evaluate organizational effectiveness. PECO Fleet Management employs KPIs to assist in fleet maintenance contractor evaluation and overall fleet health and performance. The KPIs provide insight into making future repair/replace, operating, and maintenance decisions. The PECO Fleet Department tracks approximately 16 Key Performance Indicators (KPIs) to assist in evaluating their fleet maintenance contractor. The vast majority of these KPIs are used to evaluate the contractor's principal duties (i.e., maintaining overall fleet health and minimizing downtime). Two of the KPIs track the contractor's safety compliance and the last one tracks environmental and recycling concerns (e.g., tires, rags, batteries, oil, etc.). An analysis of contractor performance relative to established KPIs is detailed in Exhibit XI-1.

#### Exhibit XI-1 PECO Energy Company Fleet Contractor Key Performance Indicators For the Years 2013 through 2016

Metric	2013	2014	2015	2016	Goal
Average Out Of Service Vehicle Count	37	35	30	32	≤ 32 Vehicles*
Average Days Out Of Service Data	15	11.8	7.3	9.4	≤ 12 days OOS
Vehicles Requiring More Than 12 Days to Repair	46	30	18	20	≤ 15 Vehicles
Mean Time to Service	112	19.1	18.3	17.7	≥ 14.8 Days**
Monthly Fleet Status Report Performance	24	27	30	30	≥ 29
Penske Backshift Work Completion Tracking	87.4%	86.2%	87.1%	87.3%	≥ 85%
Service Calls	47	38	30	26	≤ 57 Responses / Month
Response Time to Service Calls	58.37	57.07	58:42	61	≤ 90 Minutes
Preventive Maintenance (PM) Schedule Adherence	97.2%	97.6%	95.8%	96.3%	≥ 96%
Preventive Maintenance (PM) Backlog	29	35	48	31	31
Penske Quality Audit Tracking	14	15.1	15	31	24***
Condition Report Tracking	14	11	15	14	8
Penske Staffing	47	47	48	50	48

Source: Data Requests FT-3 and FT-13

= Met = Not Met

\* ≤ 30 Vehicles 2013 – September 30, 2016, ≤ 32 Vehicles October 1, 2016 – 2016 year-end

\*\* ≥ 20 Days 2013 – September 30, 2016, ≥ 14.8 Days October 1, 2016 – 2016 year-end

\*\*\* 15 Quality Audits 2013 - September 30, 2016, 24 Quality Audits October 1, 2016 - 2016 year-end

As noted above, a majority of KPI's (i.e., 13 out of 16) focused on contractor performance. Therefore, in an effort to improve contractor performance, the Fleet Department implemented revised contract terms intended to control costs and improve fleet maintenance performance as part of contract negotiations. The 2013 contract extension included quarterly financial penalties associated with failure to achieve four KPI goals (average number of vehicles out of service, backshift work completion, preventive maintenance schedule adherence, and contractor staffing) and also adjusted parts and materials discount tiers<sup>41</sup>. In addition, the Company implemented "caps not to

<sup>&</sup>lt;sup>41</sup> Discount tiers on parts provide a discount based upon the volume of parts used.

exceed" for labor charges and 50% gain-sharing/cost saving measures for labor expenses as part of 2014 contract negotiations which allows for cost savings to be shared equally by both the Company and contractor if improvements are made.

At the time of the Management Audit, seven KPI's missed their goal but as shown in Exhibit XI-1, only one metric missed the goal in 2016, indicating steady improvement since 2012.

### Finding No. XI-3

# Additional Follow-up Finding and Conclusion – Analysis of PECO Fleet Department reports revealed data accuracy concerns.

<u>**Current Review**</u> – The Asset Works fleet management software system (M5) is the database the PECO Fleet Department uses to track units and equipment, repairs and preventive maintenance work orders, service and inventory records, expenses, and other fleet-related data. The M5 database that provides information for PECO's Vehicle Replacement Model (VRM), which generates vehicle replacement schedules based on fleet data from the previous seven years.

Auditor analysis of the VRM and M5 data reports provided by PECO revealed material year-to-year mileage discrepancies and other possible data inaccuracies for individual vehicles. The spreadsheets provided both annual miles driven and life-to-date (LTD) mileage; however, all audit staff attempts to use annual miles from the M5 data to reconcile year-to-year LTD mileage, or vice-versa, were unsuccessful. In addition, several instances (VRM reports only and not M% data) were discovered where vehicles had more annual miles driven than LTD mileage. PECO provided an explanation that the reconciliation of the year-to-year LTD mileage issues was due to the database showing only the number of miles from when PECO acquired the vehicle until end of the year. The Company's explanation hinges on pre-acquisition mileage and depending on spreadsheet configurations could cause discrepancies for the first year owning the vehicle. However, the audit staff found instances where LTD mileage driven didn't reconcile with the previous year plus miles driven in the current year. PECO acknowledged that there was a data difference between the VRM report and an M5 spreadsheet given as data requests.

Because M5 provides information into the VRM, the audit staff also closely inspected reports from the VRM. More specifically, the VRM replacement schedules provided by PECO listed multiple vehicles with the same exact LTD mileage and several others with higher annual miles driven than LTD mileage. PECO acknowledged the report inconsistencies and will work with the vendor to correct the reporting errors.

PECO's Fleet Department uses historical fleet data to analyze trends, assess fleet health, justify acquisitions, etc. Therefore, data integrity is necessary to make sound business decisions. Inaccurate or misleading data can lead to efficiency loss, mismanagement of fleet assets or increased costs. It is possible that the discrepancies noted by the audit staff are connected and will be addressed by the Company's vendor. In the meantime, PECO should review all reports generated by the VRM or M5 for accuracy and consistency.

#### Follow-up Recommendation - Investigate and address fleet reporting issues.

## XII. HUMAN RESOURCES AND DIVERSITY

**Background** – The PECO 2014 Management Audit contained two recommendations within the Human Resources and Diversity functional area. The Audit staff rated this functional area as needing minor improvement. In this chapter, one prior recommendation and prior situation are reviewed and one follow-up finding is presented.

### Finding No. XII-1

**Prior Situation** – PECO did not include company specific procurement data in its annual diversity report to the PUC. Due to PECO's role in Exelon Business Service Company's consolidated Supply Organization, PECO provided only corporate-wide diversity spending data in the procurement section for the Company's 2011, 2012, and 2013 Annual Diversity Reports. In addition, the parameters for diverse businesses were defined by Exelon's Diverse Business Empowerment Process (DBEP), a corporate-wide initiative focused on improving and strengthening relationships with diverse vendors, and providing opportunities for minority professionals employed by majority-owned firms. As a result, PECO was unable to separate diverse vendor spending by the minority-owned, women-owned, and person with disabilities-owned business enterprises (MWDBE) classifications as encouraged by the Commission.

**Prior Recommendation** – Modify PECO's Annual Diversity Report to the PUC to include PECO-specific total spending and PECO-specific diverse vendor spending by classification for minority, women, and persons with disabilities-owned business enterprises.

# <u>Follow-up Finding and Conclusion</u> – PECO reported PECO-specific total diversity spending and PECO-specific diverse vendor spending by classification in their 2015 and 2016 Annual Diversity Reports filed with the PUC.

<u>**Current Review**</u> – Exelon's DBEP provides corporate-wide diverse supplier strategy, to all Exelon business units, including PECO. The activities in this strategy include, but are not limited to, developing expenditure goals, monitoring performance, internal efforts (e.g. encouraging primary suppliers to establish supplier diversity processes and collaborating with other departments to increase diverse spending in high margin categories), and external efforts (e.g., involvement with diverse supplier advocacy organizations). Due to PECO's participation in Exelon DBEP, the Company's diverse business enterprise classifications differ from those defined by 52 Pa. Code § 69.801. As a result, PECO includes minority-owned and women-owned business enterprise classification. In addition, PECO identifies veteran-owned business enterprises (VBE), service-disabled veteran business enterprises (SDV), and an other business enterprise category. PECO's diverse vendor spending by classification for the years 2014, 2015, and 2016 are shown in Exhibit XII-1.

Although PECO does not provide all the specific classifications identified in 52 Pa. Code § 69.801, it does have a vendor diversity program. Furthermore, the Company is providing information specific to PECO, which helps the Commission track and monitor the diversity efforts of the Company.

#### Exhibit XII-1 PECO Energy Company Total Procurement from Minority, Women, and Veteran-Owned Business Enterprises For Calendar Years 2014 through 2016

-											
			Minority-Owned		Women-Owned		Veteran-Owned				
			<b>Business Enterprises</b>		<b>Business Enterprises</b>		<b>Business Enterprises</b>		Diversity Spending		
		Total	Annual	% of Total	Annual	% of Total	Annual	% of Total	Annual	% of Total	
	Year	Purchases	Purchases	Purchases	Purchases	Purchases	Purchases	Purchases	Purchases	Purchases	
	2014	\$838,000,000	\$42,000,000	5.01%	\$41,000,000	4.89%	\$10,000,000	1.19%	\$93,000,000	11.10%	
	2015	\$744,000,000	\$41,000,000	5.51%	\$39,000,000	5.24%	\$9,000,000	1.21%	\$89,000,000	11.96%	
	2016	\$711,000,000	\$58,000,000	8.16%	\$46,000,000	6.47%	\$5,000,000	0.70%	\$109,000,000	15.33%	

Source: Data Requests DV-1, DV-2, and DV-3

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### XIII. ACKNOWLEDGEMENTS

We wish to express our appreciation for the cooperation and assistance given to us during the course of this Management Efficiency Investigation by the officers and staff of PECO Energy Company.

This audit was conducted by Deron Henry, Porus Irani, Jennie Banzhof, Barry Keener, and Michael Flynn of the Management Audit Staff of the Bureau of Audits.

