METROPOLITAN EDISON COMPANY
PENNSYLVANIA ELECTRIC COMPANY AND
PENNSYLVANIA POWER COMPANY

MANAGEMENT EFFICIENCY INVESTIGATION
Evaluating the Implementation of Selected Recommendations from the 2007 Stratified Management and Operations Audit Report

Prepared by the
Pennsylvania Public Utility Commission
Bureau of Audits
Management Audit Division

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PENNSYLVANIA PUC
PUBLIC UTILITY COMMISSION

METROPOLITAN EDISON COMPANY
PENNSYLVANIA ELECTRIC COMPANY
PENNSYLVANIA POWER COMPANY
MANAGEMENT EFFICIENCY INVESTIGATION

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I. INTRODUCTION

A. Background

At the public meeting held on July 14, 2005 at D-05MGT002, D-05MGT003, and D-05MGT004, the Pennsylvania Public Utility Commission (PUC or Commission) accepted Barrington-Wellesley Group, Inc.'s (BWG's) proposal to perform a Stratified Management and Operations Audit of Metropolitan Edison Company (Met-Ed), Pennsylvania Electric Company (Penelec), and Pennsylvania Power Company (Penn Power) (collectively referred to as the FirstEnergy Pennsylvania Companies or FE-PA Companies). The FE-PA Companies are public utilities subject to regulation by the PUC. All three FE-PA Companies are owned by FirstEnergy Corp. (FirstEnergy), a registered public utility holding company headquartered in Akron, Ohio. BWG subsequently completed its work and, in January 2007, issued a final report containing 50 recommendations for improvement. The FE-PA Companies submitted their Implementation Plan on February 14, 2007 indicating that 37 recommendations were accepted, 5 recommendations were accepted-in-part, and 8 recommendations were rejected. On March 1, 2007, at D-05MGT002, D-05MGT003, and D-05MGT004, the Commission made both the audit report and the Implementation Plan public and directed the FE-PA Companies to:

- Proceed with their February 14, 2007 Implementation Plan.
- Submit progress reports on the implementation annually, by March 1, for the next three years.

Since March 2007, the FE-PA Companies have submitted three Implementation Plan updates as requested by the Commission to ascertain the FE-PA Companies' progress in implementing the recommendations from the Management Audit report. Based on a review of these updates, the Audit Staff elected to conduct a Management Efficiency Investigation (MEI) of the FE-PA Companies' progress in implementing 26 of the original 50 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 efforts to implement certain recommendations contained in the Stratified Management and Operations Audit report released in March 2007. The scope of this evaluation was limited to the FE-PA Companies' efforts in implementing 26 prior management audit recommendations in the functional areas of:

- Affiliate Interests
- Corporate Governance
- Financial Management
- Electric Reliability
- Operations
- Emergency Preparedness

- Support Services
- Human Resources
- Customer Service
- Diversity and EEO

Additionally, it was deemed prudent to review the FE-PA Companies' 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 Commission's Bureau of Audits (Audit Staff). Actual fieldwork began on June 8, 2010, and continued intermittently through January 2011. The fact gathering process included:

- Interviews with FirstEnergy personnel.

- Analysis of selected FirstEnergy records, documents, reports, and other information for the period 2006 through 2010.

- Visits to select facilities at each of the FE-PA Companies and FirstEnergy in Akron, OH.

II. SUMMARY OF MANAGEMENT EFFECTIVENESS AND OPERATING EFFICIENCY

The Audit Staff found that Metropolitan Edison Company (Met-Ed), Pennsylvania Electric Company (Penelec), and Pennsylvania Power Company (Penn Power) (collectively referred to as the FirstEnergy Pennsylvania Companies or FE-PA Companies) have effectively or substantially implemented 10 of the 26 prior Management Audit recommendations reviewed. It is noteworthy that all three FE-PA Companies are owned by FirstEnergy Corp. (FirstEnergy), and that they all receive a substantial amount of support services from FirstEnergy Service Company.

The improvements achieved by the management of the FE-PA Companies, FirstEnergy and/or FirstEnergy Service Company include:

- Developed a Federal Energy Regulatory Commission (FERC) and Regional Transmission Organization (RTO) policy department for dealing with transmission related issues. Moreover, FirstEnergy has been an active participant in PJM's Planning Committee (PC) and the Regional Transmission Expansion Planning (RTEP) process.
- Improved inventory turnover rates and reduced total inventory levels. Total inventory levels were reduced by approximately $7.4 million (i.e., $1,839,000 at Met-Ed, $5,409,000 at Penelec and $130,000 at Penn Power) resulting in estimated total annual carrying cost savings of $738,000 (i.e., $184,000 for Met-Ed, $541,000 for Penelec and $13,000 for Penn Power).
- Developed and implemented reliability improvement plans which have helped each of the FE-PA Companies improve their System Average Interruption Frequency Index (SAIFI) and System Average Interruption Duration Index (SAIDI) performance.
- Developed a Work Management Initiative Group to plan, schedule and manage workload across FirstEnergy's system and determine current and future staffing levels.
- Completed its analysis of the FERC account mapping[1] verification processes for Administrative & General (A&G) accounts, reduced the threshold for reviewing variances in these accounts to $500,000, and conducted an internal audit of FERC Form 1 report mapping.
- Corrected deficiencies identified in its assessment of internal controls over financial reporting.
- Rerouted meter reader routes that resulted in reduced annual meter reading costs at Met-Ed and Penn Power by approximately $233,000 and $202,000, respectively.
- Significantly reduced the percentage of residential and small business bills not rendered each billing cycle.

[1] Process used to transfer data from accounts used for FirstEnergy's financial and management reporting system into the FERC Uniform System of Accounts.

- Developed and implemented formal access control procedures for gaining access to information technology/cyber assets which include an examination and verification of the initial access authorized for selected users.

While these accomplishments are commendable, the Audit Staff has identified further improvement opportunities in certain areas. In particular, the FE-PA Companies need to:

- Conduct an analysis of overtime hours for each FE-PA Company and strive to maintain overtime levels at less than 15% of straight time hours. Placing linemen on different shifts and/or hiring additional line workers to offset the overtime could result in a net annual savings at Met-Ed, Penelec, and Penn Power by approximately $1.2 million, $850,000 and $150,000, respectively.
- Develop a process to track and trend historical budgeted staffing levels and compare them to actual staffing levels while continuing to enhance the Forecasting and Planning Process.
- Strive to consistently achieve injury Incidence Rate goals by continuing to provide and improve effective safety training to all employees.
- Strive to correct all major deficiencies identified during infrared scans of substations within seven days and all deficiencies identified within 30 days; and submit as an appendix to the Annual Reliability Report to the Commission, a list of deficiencies and major deficiencies not corrected within their respective time frames and the reasons they were not timely corrected.
- Take additional actions on circuits that stay on the 5% worst performing circuit list for more than a year, and where it is not cost effective to take immediate action, develop multi-year action plans to improve overall reliability on these circuits.
- Strive to answer at least 80% of calls within 30 seconds by fully leveraging the technology investments made at the Reading Contact Center.
- Complete the implementation of the previously approved revenue protection strategy or devise a new strategy and plan accordingly.
- Complete the rerouting of the FE-PA Companies' meter reading routes and explore the benefits of expediting large scale deployment of smart meter technology. Upon completion of the rerouting project, Penelec should be able to achieve reductions in meter reading costs per residential meter similar to Met-Ed's experience from 2005 to 2009, and therefore save approximately $971,000 annually.
- Reduce the number of meters not read within 6 and 12 months to achieve levels comparable to other Pennsylvania electric distribution companies.
- Modify FirstEnergy Service Company's Internal Audit Department reporting structure so that it no longer administratively reports to the FirstEnergy Chief Financial Officer.
- Revise the Amended & Restated Mutual Assistance Agreement to include all affiliates with whom the FE-PA Companies transact business and submit it to the Commission for review and approval.

- Submit a detailed, written explanation for each dividend payout that has exceeded 85% of net income to the Commission within 60 days after public release of this audit report, and ensure that advance notice and explanations are submitted to the Commission when such dividend payouts occur in the future.
- Ensure that all employees that have access to cyber assets complete required annual training related to security awareness and procedures by maintaining appropriate computer based training tracking records.

Exhibit II-1 summarizes the 26 prior recommendations reviewed and the Audit Staff's follow-up findings, conclusions, and recommendations.

FIRSTENERGY PENNSYLVANIA COMPANIES
MANAGEMENT EFFICIENCY INVESTIGATION
SUMMARY OF JANUARY 2007 MANAGEMENT AUDIT RECOMMENDATIONS AND STAFF'S FOLLOW-UP FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

Public Utility Commission Bureau of Audit's Prior Recommendations	Originally Targeted Completion Date	MEI Finding Number	Staff's Follow-up Findings and Conclusions As of January 31, 2011	Staff's Follow-up Recommendation
III. AFFILIATE INTERESTS				
Submit affiliate transaction contracts for Commission approval for all FE-PA Companies' transactions with affiliates in accordance with Section 2102.	September 2007	III-1	The Amended & Restated Mutual Assistance Agreement submitted to the Commission in January 2009 does not cover all affiliates with whom Met-Ed, Penelec and Penn Power conduct business.	Revise the Amended & Restated Mutual Assistance Agreement to include all affiliates with whom the FE-PA Companies transact business and submit it to the Commission for review and approval.
Provide to the Commission Staff a detailed, written justification for dividend payouts above 85 percent against other potential uses for cash within the utilities.	None. Recommendation Rejected.	III-2	In certain years, Met-Ed, Penelec, and Penn Power have made dividend payouts that exceeded 85% of their net income, but have never provided the Commission with a detailed, written justification why such payouts were appropriate.	Submit a detailed, written explanation for each dividend payout that has exceeded 85% of net income to the Commission within 60 days after public release of this audit report, and ensure that advance notice and explanations are submitted to the Commission when such dividend payouts occur in the future.
IV. CORPORATE GOVERNANCE				
Have the Director of Internal Audit report administratively to a senior officer of FirstEnergy other than the Chief Financial Officer (CFO).	None. Recommendation Rejected.	IV-1	FirstEnergy has not modified the reporting structure for the Internal Audit Department.	Modify the Internal Audit Department reporting structure so that it no longer administratively reports to the FirstEnergy CFO.

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V. FINANCIAL MANAGEMENT				
Finalize the analysis of the Federal Energy Regulatory Commission (FERC) account mapping verification processes for Administrative and General (A&G) to provide assurance that the FirstEnergy (FE) account mapping processes are appropriate and related systems of internal controls are effective. Notify the PAPUC Audit Staff when these efforts are complete.	December 2008	V-1	FirstEnergy has completed its analysis of the FERC account mapping verification processes for Administrative & General (A&G) accounts, reduced the threshold for reviewing variances in these accounts to $500,000, and conducted an internal audit of FERC Form No. 1 report mapping.	None.
Provide a copy of the Internal Auditing Department (IAD) Third Quarter Assessment of Internal Controls Over Financial Reporting, as well as the PricewaterhouseCoopers, LLP (PwC) management letter for the 2006 financial audit, to PAPUC Audit Staff when available.	June 2007	V-2	FirstEnergy has corrected deficiencies identified in its assessment of internal controls over financial reporting.	None.

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VI. ELECTRIC RELIABILITY				
Develop a detailed plan to improve distribution system reliability and meet the System Average Interruption Duration Index (SAIDI) goals set in the Settlement Agreement.	March 2008	VI-1	Each of the FE-PA Companies have developed and implemented reliability improvement plans which have helped each Electric Distribution Company significantly improve its System Average Interruption Frequency Index (SAIFI) and SAIDI performance.	None.
As a supplement to the existing annual report to the PAPUC, provide a list of each deficiency and major deficiency discovered during the annual infrared scans and the time to correct the major deficiency.	March 2007	VI-2	The FE-PA Companies provided an annual list of each deficiency and major deficiency as a supplement to their 2007 Annual Report of Compliance, but discontinued reporting this information thereafter; moreover a small portion of the deficiencies are not being corrected within a reasonable time frame.	Strive to correct major deficiencies within seven days and deficiencies within 30 days; and submit, as an appendix to the Annual Reliability Report to the Commission, a list of deficiencies and major deficiencies not corrected within their respective time frames and the reasons they have not been corrected in a timely manner.

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VI. ELECTRIC RELIABILITY (CONT.)				
Conduct a follow-up review at the end of 2006 to review the status of the installation of Penelec's Ampere/Ampere-Demand meters.	March 2007	VI-3	Penelec installed all but two Ampere/Ampere-Demand meters by the end of 2007 as agreed to in the 2004 Reliability Settlement Agreement; and the last of the installations was completed by June 10, 2010.	None.
As a supplement to the existing quarterly reports provided to the PAPUC, list and describe remedial actions planned or taken for any circuit that appears on the list of 5% Worst Performing Circuits for one year or more, or in four out of six quarters.	March 2007	VI-4	The FE-PA Companies have had circuits that have been consistently showing up on the 5% worst performing circuit list for two years or longer.	Take additional actions on circuits that stay on the 5% worst performing circuit list for more than a year and develop solutions to improve overall reliability on these circuits.
Conduct a more useful staffing study.	December 2007	VI-5	FirstEnergy has implemented a work management process at the three FE-PA Companies which forecasts line worker staffing based on historical and future workload.	None.

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VII. OPERATIONS				
Develop a proactive strategy for dealing with issues that limit the transmission of electric power from west to east.	February 2007	VII-1	FirstEnergy does not have a documented strategy for moving large volumes of energy from west to east; but has developed a Federal Energy Regulatory Commission (FERC) and Regional Transmission Organization (RTO) Policy Department for dealing with transmission issues and has been an active participant in PJM's Planning Committee (PC) and the Regional Transmission Expansion Planning (RTEP) process.	None.
Include in the staffing study recommended in the Electric Reliability chapter a thorough review of the engineering resource needs of the FE-PA Companies.	December 2007	VII-2	FirstEnergy conducted a review of its engineering resource needs by developing an engineering staffing strategy to include a workload analysis, staffing forecast, sourcing strategy, etc.	None.

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VIII. EMERGENCY PREPAREDNESS				
		VIII-1	The FE-PA Companies have developed and maintain comprehensive emergency response, physical security, cyber security and business continuity plans.	None.
IX. SUPPORT SERVICES				
Improve inventory turnover rates and eliminate excess inventory.	March 2008	IX-1	The FE-PA Companies have improved inventory turnover rates and reduced total inventory levels.	None.
FirstEnergy should develop and implement formal access control procedures that include a formal consolidated Access Authorization Form. Security and access control review should include an examination and verification of the initial access authorized for selected users.	February 2007	IX-2	FirstEnergy has developed and implemented formal access control procedures which include an examination and verification of the initial access authorized for selected users.	None.

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IX. SUPPORT SERVICES (CONT.)				
FirstEnergy should improve its security awareness and training programs to include computer based training (CBT) or other mandatory formal classroom training for IT and departmental personnel. A refresher course should be conducted annually.	June 2007	IX-3	FirstEnergy has implemented a program to educate its employees regarding IT security issues via computer based training, but is not ensuring that employees complete this training.	Ensure that all employees that have access to cyber assets complete required annual training related to security awareness and procedures by maintaining appropriate CBT tracking records.
X. HUMAN RESOURCES				
Examine employee staffing levels at all FirstEnergy Pennsylvania operating companies in order to ensure that staffing levels for all employee groups are appropriate:	December 2007	X-1	FirstEnergy examined employee staffing levels at the FE-PA Companies, but analyses of contractor staffing levels and spans of control were not performed.	Perform a review of contractor staffing levels and conduct an employee span of control analysis by department on an annual basis striving to limit the number of span of control ratios outside the range of 1:5 – 1:7.

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X. HUMAN RESOURCES (CONT.)				
Examine the level of overtime being paid as it relates to ensuring adequate staffing levels.	December 2007	X-2	An analysis of overtime hours for the FE-PA Companies line worker groups has not been performed.	Conduct an analysis of overtime hours for each FE-PA Company and strive to maintain overtime levels at less than 15% of straight time hours.
Develop a comprehensive work management/manpower planning program and produce a staffing plan that addresses current needs and future staffing challenges.	December 2007	X-3	A Work Management Initiative Group was developed to plan, schedule, and manage work across FirstEnergy's system and determine current and future staffing levels; however, FirstEnergy is not tracking budgeted historical staffing levels.	Develop a process to track and trend historical budgeted staffing levels and compare them to actual staffing levels while continuing to enhance the Forecasting and Planning Process.

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X. HUMAN RESOURCES (CONT.)				
Develop a more consistent and effective approach to safety training.	February 2007	X-4	FirstEnergy is taking a proactive approach to safety training, and is consistently and effectively providing safety training to all employees; nevertheless, the FE-PA Companies have not consistently met their Occupational Safety and Health Administration (OSHA) Incidence Rate goals.	Strive to consistently achieve Incidence Rate goals by continuing to provide and improve effective safety training for all employees.
XI. CUSTOMER SERVICE				
Improve customer call center performance in order to achieve the goal set in the Pennsylvania Reliability Settlement Agreement for the year ending December 31, 2005; i.e., answer 80% of customer calls within 30 seconds.	December 2006	XI-1	The FE-PA Companies' percentage of calls answered within 30 seconds needs to be improved.	Strive to answer at least 80% of calls within 30 seconds by fully leveraging the technology investments made at the Reading Contact Center.

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XI. CUSTOMER SERVICE (CONT.)				
Reduce the number of residential and small business bills not rendered once every billing period. Steps should include: Develop reports that identify these accounts prior to the bills being mailed to allow the billing representatives to either issue field work orders to obtain meter readings or calculate bills based on estimated meter readings.	February 2007	XI-2	The FE-PA Companies have significantly reduced the percentage of residential and small business bills not rendered once every billing cycle.	None.
Reduce the number of residential meters not read in six and twelve months.	December 2007	XI-3	The FE-PA Companies do not compare favorably to other Pennsylvania EDCs regarding the percentage of residential meters not read by company or customer within 6 and 12 months.	Reduce the number of meters not read in 6 and 12 months to achieve levels comparable to that of the other Pennsylvania EDCs and strive for compliance with Commission regulations.

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XI. CUSTOMER SERVICE (CONT.)				
Develop a consistent revenue protection strategy.	December 2008	XI-4	FirstEnergy has not fully developed or implemented its revenue protection strategy and the systems and processes necessary to improve the Revenue Protection Services.	Complete the implementation of the previously approved revenue protection strategy or devise a new strategy and plan accordingly.
Take steps to further reduce meter reading costs and develop a plan and schedule for the implementation of AMI if determined to be cost justified.	February 2007	XI-5.	From 2005 to 2009, the cost per meter read for residential customers decreased for Met-Ed and Penn Power but increased for Penelec; moreover the FE-PA Companies have not begun large scale implementation of AMI.	Complete the rerouting of the FE-PA Companies' meter reading routes and explore the benefits of expediting large scale deployment of smart meter technology.
XII. DIVERSITY & EEO				
Identify the employment areas that are below parity and develop feasible approaches for making the FE-PA Companies' employee mix match that of the respective service territory.	February 2007	XII-1	Met-Ed's, Penelec's, and Penn Power's workforces do not have proportional representation of women and minorities in several job categories.	Intensify efforts to attain full representation of women and minorities within the workforce.

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XII. DIVERSITY & EEO (CONT.)				
Take necessary steps to meet minority business supplier goals.	February 2007	XII-2	FirstEnergy has been consistently reaching many, but not all, of its diverse supplier goals.	Strive to achieve all FirstEnergy diverse supplier goals.
		XII-3	The FE-PA Companies do not track or annually report purchases made from persons with disabilities-owned businesses.	Track purchases from persons with disabilities owned business enterprises and report the results annually to the Commission along with purchases made from minority and women owned business enterprises.

III. AFFILIATE INTERESTS

Background - The Stratified Management and Operations Audit of Metropolitan Edison Company (Met-Ed), Pennsylvania Electric Company (Penelec), and Pennsylvania Power Company (Penn Power) (collectively referred to as the FirstEnergy Pennsylvania Companies or FE-PA Companies) conducted by the consulting firm Barrington-Wellesley Group, Inc. (BWG), released by the Pennsylvania Public Utility Commission (PUC or Commission) on March 1, 2007, at D-05MGT002, D-05MGT003 and D-05MGT004, contained five recommendations in the Affiliate Interests section. BWG rated this functional area as needing moderate improvement. In this chapter, two prior recommendations and prior situations are reviewed and two follow-up findings and two recommendations are presented.

The FE-PA Companies are public utilities subject to regulation by the PUC and are owned by FirstEnergy Corp. (FirstEnergy). FirstEnergy is a registered public utility holding company headquartered In Akron, Ohio which, in addition to Met-Ed and Penelec also directly owns the electric distribution companies (EDCs) Ohio Edison Company (Ohio Edison), Jersey Central Power & Light Company, The Cleveland Electric Illuminating Company, and The Toledo Edison Company. Penn Power is a direct subsidiary of Ohio Edison. FirstEnergy is also the parent company of American Transmission Systems, Inc. that owns and operates transmission facilities and is subject to regulation by the Federal Energy Regulatory Commission (FERC) (Refer to Follow-up Finding and Conclusion No. VII-1 in Chapter VII Operations). FirstEnergy also owns several unregulated generation companies and competitive energy supply companies. FirstEnergy Service Company, a direct subsidiary to FirstEnergy, provides the following services to affiliates:

- Executive Management – Chairman, President & CEO, and Executive Vice President, FirstEnergy Utilities
- Energy Delivery & Customer Service
- Utility Operations
- Customer Services & Energy Efficiency
- Utility Support
- FERC Policy & Compliance
- Energy Policy
- Finance, Strategic Planning & Operations
- Rates & Regulatory Affairs
- Information Technology
- Supply Chain
- Business Development/Performance & Management
- Controller
- Treasury
- Corporate Risk
- Internal Auditing
- Legal
- Real Estate, Record Management

- Corporate Affairs
- Communications
- Governmental Affairs
- Human Resources

At the time of our fieldwork, FirstEnergy also was seeking approvals for its agreement to merge with Allegheny Energy, Inc.[2] The Allegheny Energy, Inc. merger would include the Pennsylvania EDC West Penn Power Company and its affiliated EDCs Potomac Edison Company and Monongahela Power Company and the rest of the Allegheny Power System affiliates.

Prior Recommendation – Submit affiliate transaction contracts for Commission approval for all FE-PA Companies' transactions with affiliates in accordance with Section 2102.

Prior Situation – The FE-PA Companies were not adhering to regulations established in the Public Utility Code, 66 Pa. C.S. §2102 which require utilities to submit contracts for transactions with affiliates to the Commission for its approval. Specifically, the Commission's authority to approve contracts between public utilities and their affiliates comes under the general authority to regulate public utilities in the Commonwealth, 66 C.S. §2102(a) which, in part, states:

> No contract or arrangement providing for the furnishing of management, supervisory, construction, engineering, accounting, legal, financial, or similar services, and no contract or arrangement for the purchase, sale, lease, or exchange of property, right, or thing or for the furnishing of any service, property, right or thing other than those above enumerated, made or entered into after the effective date of this section between a public utility and any affiliated interest shall be valid or effective unless and until such contract or arrangement has received the written approval of the commission.

To be valid, most transactions between FE-PA Companies and their affiliates must be covered by a contract approved by the PUC. Transactions that are not in excess of $10,000 are generally exempted from PUC approval, per 66 C.S. §2102(d):

> . . . where the amount of consideration involved is not in excess of $10,000 or 5% of the par value of outstanding common stock, whichever is smaller. Regularly recurring payments under a general or continuing arrangement which aggregate a greater annual amount shall not be broken down into a series of transactions to come with this exemption.
> (Emphasis added)

[2] The merger with Allegheny Energy, Inc. subsequently closed on February 25, 2011, after receiving final approval from the PAPUC on February 24, 2011.

In addition, subsidiary or related transactions may be valid without approval if the Commission has approved generally a class or category of transactions under 66 Pa. C.S. §2102(d):

> Where the commission has given its approval generally as to a class or category of transactions, the commission may apply such approval to all subsidiary or related transactions. Such transactions shall be valid or effective without commission approval under this section.

Moreover, in accordance with 66 Pa. C.S. §2107, the affiliate interest provisions are not applicable to the "rates and related terms and conditions for the interstate transmission of electricity…which have been submitted to and approved by a Federal regulatory agency having jurisdiction thereof…"

Ultimately, based on 66 C.S. §2102(c), the Commission has the authority to disallow the amount of the FE-PA Companies' affiliate charges or series of transactions that are not subject to the exceptions set forth above and that the Commission determines are in excess of reasonable prices or charges that are not reasonably necessary and proper.

Follow-up Finding and Conclusion No. III-1 – **The Amended & Restated Mutual Assistance Agreement submitted to the Commission in January 2009 does not cover all affiliates with whom Met-Ed, Penelec and Penn Power conduct business.**

FirstEnergy filed a revised affiliated interest agreement (AIA) with the Commission on January 26, 2009; however this agreement does not specify certain affiliates with whom the three FE-PA Companies transact business. American Transmission Systems, Incorporated (ATSI), FirstEnergy Nuclear Operating Company (FENOC), FirstEnergy Properties, Inc. (FirstEnergy Properties), and FirstEnergy Generation Corp. (GenCo) all conducted business with one or more of the FE-PA Companies during 2009, but are not specified in the revised AIA. However, the substance of the transactions between ATSI, GenCo, FENOC (formerly GPU Nuclear), and the FE-PA Companies may have been assigned through merger or acquisition from agreements previously filed and approved for their predecessor affiliate entities. Nonetheless, it appears that the transactions occurring between the FE-PA Companies and FirstEnergy Properties have never been included in an AIA submitted to the PUC for approval. In particular, Met-Ed, Penelec, and Penn Power received services in the amount of $58,000, $56,000, and $11,000, respectively, from FirstEnergy Properties in 2009.

As previously stated, the Commission's authority to approve contracts between public utilities and their affiliates is specifically provided for in 66 C.S. §2102(a). Therefore, FirstEnergy should submit an AIA(s) to the Commission that details the transactions occurring between all affiliates and the FE-PA Companies. FirstEnergy indicated that transactions between the FE-PA Companies and affiliates are consistent

with transactions covered by other AIAs[3]. However, the Audit Staff does not believe there are AIAs on file with the Commission that cover all the transactions with the affiliates listed above. Based on the Audit Staff's review, it appears that the FE-PA Companies and/or FirstEnergy are not in compliance with Section 2102 of the Pennsylvania Public Utility Code which requires them to submit contracts for transactions with affiliates to the Commission for approval. Furthermore, due to the complexities and size of the merger agreements/acquisition contracts between FE-PA Companies and their affiliates it is difficult to determine what affiliated transaction are, or are not, subject to an AIA filed with and approved by the Commission; therefore it would be beneficial for the FE-PA Companies to file an updated AIA(s) that clarifies all their transactions occurring with affiliates.

Staff's Follow-up Recommendation – Revise the Amended & Restated Mutual Assistance Agreement to include all affiliates with whom the FE-PA Companies transact business and submit it to the Commission for review and approval.

Prior Recommendation – Provide to the Commission Staff a detailed, written justification for dividend payouts above 85 percent against other potential uses for cash within the utilities.

Prior Situation – BWG found that formal dividend policies did not exist and there were no internally or externally imposed restrictions on dividends. From 2002 to 2005, the FE-PA Companies combined had paid an average of $111 million to their parent in dividends each year. The FE-PA Companies' Boards of Directors reviewed the amount of dividends that could be paid based on recommendations from "corporate" cash available and declared the dividend to be paid by each of the FE-PA Companies. BWG indicated that, based on its experience, dividend payouts from regulated utilities to holding or parent companies should range from 75 to 85 percent. Over the period 2002 to 2005, Met-Ed and Penelec had dividend payouts averaging 93.2% and 88.9% of net income, respectively. Penn Power was the only Company below the 75% to 85% benchmark, with an average dividend payout of 46.2% of net income. Although the payouts had not had a negative impact on the financial strength of any of the Pennsylvania utilities, BWG questioned whether or not the Met-Ed and Penelec customers would have benefited from retention of some of the funds for potential uses such as further system reliability improvements.

[3] In January 2009, the FE-PA Companies filed an amended affiliated interest agreement (AIA) to the Commission for approval per a recommendation made by Commission Prosecutory Staff following the conclusion of an informal investigation involving the FE-PA Companies' affiliated interest transactions. On May 11, 2010, the FE-PA Companies submitted a revised AIA that included revisions as requested by Commission staff for approval. This latter revised AIA was included as part of a Joint Application filed May 14, 2010, seeking approval of the merger of FirstEnergy and Allegheny Energy and later approved by the Commission when it approved the merger by order entered February 24, 2011. Thereafter, on May 2, 2011, the FE-PA Companies filed a petition with the Commission to withdraw the agreement filed in January 2009 as amended in May 2010 as moot because the revised AIA was approved in the merger proceeding. In the petition, the FE-PA Companies also indicated that they are reviewing their AIAs, including the AIA approved in the merger order, to determine if any additional revisions are necessary.

BWG recommended that a detailed, written justification should be provided to the Commission for dividend payouts exceeding 85% of net income against other potential uses for cash within the utilities, such as correcting electric reliability problems. The Commission has broad authority to require public utilities to provide information to the Commission.

FirstEnergy rejected this recommendation, stating that the determination of a dividend is a management decision. FirstEnergy stated that net income, cash generation, capital structures, and regulatory restrictions on borrowings for each Company are reviewed prior to a dividend recommendation being made and that such a decision is entirely within management's discretion in the context of its fiduciary responsibilities. FirstEnergy also stated that the recommendation is directly contrary to long-standing Pennsylvania precedent that the PUC may not operate as a "super board of directors".

<u>Follow-up Finding and Conclusion No. III-2</u> - In certain years, Met-Ed, Penelec, and Penn Power have made dividend payouts that exceeded 85% of their net income, but have never provided the Commission with a detailed, written justification why such payouts were appropriate.

The FE-PA Companies rejected this recommendation when they submitted their Implementation Plan in response to BWG's audit report, nonetheless the Audit Staff deemed it appropriate to follow-up on the status based upon the Commission having broad authority to require public utilities to provide information to the Commission. Under 66 Pa. C.S. § 504, the Commission can require public utilities to file periodical reports, "at such times, and in such form, and of such content, as the commission may prescribe, and special reports concerning any matter whatsoever about which the commission is authorized to inquire..." In addition, under 66 Pa. C.S. § 505, the Commission can require public utilities to furnish information to the Commission in aid of inspection, examination, inquiry, investigation or hearing by the Commission. Lastly, under 66 Pa. C.S. § 506, the Commission has authority to make any inspection, inquiry or investigation of all of a public utility's facilities and records.

The FE-PA Companies' net income, dividends paid to FirstEnergy, and the percentage of net income paid in dividends from 2006 to 2009 is summarized on Exhibit III-1. The annual dividends payments which exceeded the 75%-85% range are highlighted in red shading and were as follows:

- In 2006, Met-Ed paid dividends of $25 million despite a net loss of $240.2 million.
- In 2008, Penelec paid dividends of $90 million from net income of $88.2 million (i.e., 102% of net income was paid as dividends).
- In 2009, Penelec paid dividends of $85 million from net income of $65.4 million (i.e., 130% of net income was paid as dividends).
- In 2009, Penn Power paid dividends of $50 million from net income of $20.1 million (i.e., 249% of net income was paid as dividends).

Exhibit III-1
FE-PA Companies
Dividend Payouts ($000)
2006-2009

	Met-Ed	Penelec	Penn Power	Combined
2006				
Net Income	$(240,195)	$84,182	$9,716	$(146,297)
Dividend Payout	$25,000	$20,000	$597	$45,597
% of Net Income	NA	23.8%	6.1%	NA
2007				
Net Income	$95,463	$92,938	$22,404	$210,805
Dividend Payout	$0	$70,000	$0	$70,000
% of Net Income	0.0%	75.3%	0.0%	33.2%
2008				
Net Income	$88,033	$88,170	$23,194	$199,397
Dividend Payout	$0	$90,000	$0	$90,000
% of Net Income	0.0%	102.1%	0.0%	45.1%
2009				
Net Income	$55,523	$65,388	$20,115	$141,026
Dividend Payout	$0	$85,000	$50,000	$135,000
% of Net Income	0.0%	130.0%	248.6%	95.7%
2006-2009				
Net Income	($1,176)	$330,678	$75,429	$404,931
Dividend Payout	$25,000	$265,000	$50597	$340,597
% of Net Income	NA	80.1%	67.1%	84.1%

Source: Data Request No. AI-6

During the four year period 2006-2009, total dividends paid by each of the three Pennsylvania operating companies are as follows:

- Met-Ed paid dividends of $25 million despite a cumulative net loss of $1.2 million.
- Penelec paid dividends of $265 million from net income of $330.7 million (i.e., 80.1% of net income was paid as dividends).
- Penn Power paid dividends of $50.6 million from net income of $75.4 million (i.e., 67.1 % of net income was paid as dividends). The three FE-PA Companies combined paid dividends of $340.6 million from a combined net income of $404.9 million (i.e., 84.1% of combined net income was paid as dividends). Note the combined dividend payments were just under the 85% of net income maximum recommended by BWG.

FirstEnergy does not have a formal policy in regards to the payment of dividends by its affiliates. The payment of dividends is reviewed on an ongoing basis by

management. Other potential uses of these funds are considered (e.g., operations & maintenance and capital expenditures). Prior to paying dividends, FirstEnergy will review financial metrics such as the debt/equity ratio (i.e., total liabilities divided by shareholders equity), earnings, cash generated, and cash position. Cash is monitored daily, while the other metrics are monitored monthly.

The FE-PA Companies claim that their dividend payouts over the last several years have been based on debt issues and optimization of the capital structure. They state that their articles of incorporation, bond indentures, and various other agreements relating to long-term debt must be considered. For example, a first mortgage bond indenture may require a certain retained earnings balance before dividends can be declared. The debt/equity ratio is a measure of a company's financial leverage, with a high ratio generally indicating that a company has been aggressive in financing its growth with debt. This can result in volatile earnings as a result of the additional interest expense. The regulatory debt percentage, which includes long-term debt but excludes short-term debt, for Met-Ed, Penelec, and Penn Power for 2005 through September 30, 2010 is shown in Exhibit III-2.

Exhibit III-2
FE-PA Companies
Regulatory Debt Percentage
2005-September 30, 2010

Regulatory Debt Percentage			
	Met-Ed	**Penelec**	**Penn Power**
12/31/05 Debt %	31%	26%	31%
12/31/05 Equity %	69%	74%	69%
12/31/06 Debt %	41%	33%	24%
12/31/06 Equity %	59%	67%	76%
12/31/07 Debt %	34%	42%	20%
12/31/07 Equity %	66%	58%	80%
12/31/08 Debt %	35%	45%	20%
12/31/08 Equity %	65%	55%	80%
12/31/09 Debt %	44%	55%	36%
12/31/09 Equity %	56%	45%	65%
9/30/10 Debt %	40%	54%	32%
9/30/10 Equity %	60%	46%	68%

Source: Data Request No. AI-8

Met-Ed's debt percentage increased from 31% as of December 31, 2005 to 41% as of December 31, 2006 after it paid a dividend of $25 million during a year it incurred a net loss of $240.2 million. Penelec's debt percentage increased from 42% as of

December 31, 2007 to 55% as of December 31, 2009 after it paid dividends equal to 102% of its 2008 net income and 130% of its 2009 net income. Penn Power's debt percentage increased from 20% as of December 31, 2008 to 36% as of December 31, 2009 after it paid dividends equal to 249% of its 2009 net income. FirstEnergy indicated that Met-Ed, Penelec, and Penn Power do not match debt issues with specific expenditures, including dividends paid. The Audit Staff attempted to determine to what extent, if any, the FE-PA Companies borrowed money in order to facilitate the payment of dividends to its parent, FirstEnergy. However, FirstEnergy indicated that Met-Ed, Penelec, and Penn Power do not specifically identify or track the use of funds acquired from its debt issues, including dividends paid; and therefore we were unable to identify the specific source of the funds used to pay dividends.

There is no evidence which indicates that service, reliability and/or safety has been affected by these past dividend practices and payouts. Nonetheless, it would be a preferred practice in the future that the FE-PA Companies provide the Commission advanced notice and an explanation of the circumstances which warrant annual dividend payments that exceeds 85% of net income.

Staff's Follow-up Recommendation – Submit a detailed, written explanation for each dividend payout that has exceeded 85% of net income to the Commission within 60 days after public release of this audit report, and ensure that advance notice and explanations are submitted to the Commission when such dividend payouts occur in the future.

IV. CORPORATE GOVERNANCE

Background - The Stratified Management and Operations Audit of Metropolitan Edison Company (Met-Ed), Pennsylvania Electric Company (Penelec), and Pennsylvania Power Company (Penn Power) (collectively referred to as the FirstEnergy Pennsylvania Companies or FE-PA Companies) conducted by the consulting firm Barrington-Wellesley Group, Inc. (BWG or Consultant), released by the Pennsylvania Public Utility Commission (PUC or Commission) on March 1, 2007, at D-05MGT002, D-05MGT003 and D-05MGT004, contained three recommendations in the Corporate Governance chapter. BWG 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 one recommendation are presented.

Prior Recommendation – Have the Director of Internal Audit report administratively to a senior officer of FirstEnergy other than the Chief Financial Officer (CFO).

Prior Situation – BWG found that the Director of Internal Audit's functional reporting relationship with the Audit Committee of the Board of Directors was appropriate; however, his administrative reporting relationship with the CFO was not desirable. While it was true that the CFO was likely to have a better understanding of the Internal Audit function than another senior officer, the prime objective of the Internal Audit function is to audit activities that report directly or indirectly to the CFO. FirstEnergy had a sufficient number of senior executives other than the CFO who could have performed this administrative responsibility and eliminated the potential conflict of interest or the perception of the conflict that existed. The Consultant found it surprising that although the Audit Committee and the external audit firm were both aware of the issue they did not take steps to eliminate the conflict of interest.

Follow-up Finding and Conclusion No. IV-1 – FirstEnergy has not modified the reporting structure for the Internal Audit Department.

FirstEnergy rejected BWG's recommendation that the Director of Internal Audit report administratively to the CEO or a direct report of the CEO other than the CFO. FirstEnergy stated that it is common in other companies to have the Director of Internal Audit report administratively to the CFO and substantively to the Board's Audit Committee. It also indicated that it has sufficient internal controls to ensure that the Internal Audit function maintains appropriate independence and feels that adequate checks and balances exist.

Currently, the Director of Internal Audit reports administratively to the Chief Financial Officer (CFO) and functionally to the Audit Committee of the Board of Directors (Audit Committee). This reporting relationship is specified in the Charter of the Audit Committee (Charter). One of the purposes of the Audit Committee is to assist the Board of Directors' oversight of the performance of the Company's internal audit function. The Charter has very specific details in regards to the responsibilities of the Audit Committee in relation to the internal audit function. The Charter requires the Audit

Committee to periodically assess the reporting relationship of the Director of Internal Audit. The Director of Internal Audit discusses this reporting relationship annually (every May) with the Audit Committee.

However, the Audit Staff is concerned that the current reporting relationship creates a potential risk of undue influence, or at least the appearance thereof, over the objectivity of the Internal Audit function with respect to accounting and financial reporting matters and the scope or timing of the work efforts. Ideally, the Director of Internal Audit should report solely to the Audit Committee for operational matters and to an executive other than the CFO for administrative matters and in particular for performance evaluations.

<u>Staff's Follow-up Recommendation</u> – Modify the Internal Audit Department reporting structure so that it no longer administratively reports to the FirstEnergy CFO.

V. FINANCIAL MANAGEMENT

Background - The Stratified Management and Operations Audit of Metropolitan Edison Company (Met-Ed), Pennsylvania Electric Company (Penelec), and Pennsylvania Power Company (Penn Power) (collectively referred to as the FirstEnergy Pennsylvania Companies or FE-PA Companies) conducted by the consulting firm Barrington-Wellesley Group, Inc. (BWG or Consultant), released by the Pennsylvania Public Utility Commission (PUC or Commission) on March 1, 2007, at D-05MGT002, D-05MGT003 and D-05MGT004, contained three recommendations in the Financial Management chapter. BWG rated this functional area as needing moderate improvement. In this chapter, two prior recommendations and prior situations are reviewed and two follow-up findings are presented.

Prior Recommendation – Finalize the analysis of the Federal Energy Regulatory Commission (FERC) account mapping verification processes for Administrative and General (A&G) to provide assurance that the FirstEnergy (FE) account mapping processes are appropriate and related systems of internal controls are effective. Notify the PAPUC Audit Staff when these efforts are complete.

Prior Situation – BWG found that the FirstEnergy Corp. (FirstEnergy) FERC Form No. 1 reports for its electric distribution companies (EDCs) had significant variances during the period 2000 through 2005 which could not all be explained by changes in business practices or economic events. The quarterly and annual FERC Form No. 1 reports, which are used by federal and state regulatory agencies to oversee the electric utilities for which they have oversight responsibilities, were based on financial information provided by the FERC accounting module of the SAP, AG (SAP) business software used by FirstEnergy.

Time and expenses were mapped (i.e., transferred) from the accounts used for FirstEnergy's financial and management reporting (i.e., the Securities & Exchange Commission or SEC accounts) into the FERC Uniform System of Accounts. There was a preponderance of significant fluctuations (i.e., 20% or more) from year to year by FERC account. FirstEnergy had completed studies to identify and correct issues associated with the mapping of transmission and distribution (T&D) costs, but these same studies had not been performed for non-T&D (i.e., A&G) accounts. Also, FirstEnergy Service Company's Internal Audit Department (IAD) had not evaluated controls over the mapping processes as part of its Sarbanes-Oxley (i.e., corporate governance) compliance work because Operations and Maintenance (O&M) expenses were reported as a single income statement line item for external financial reporting purposes.

BWG suggested that FirstEnergy Service Company's General Accounting Department (GAD) reduce the threshold for reviewing variances in A&G FERC accounts from $1,000,000 to $500,000. The Consultant also suggested that IAD include an audit of FERC Form No. 1 report mapping in its next annual audit plan, and that subsequent audits should be conducted, as necessary, based on the initial audit's findings.

<u>Follow-up Finding and Conclusion No. V-1</u> – FirstEnergy has completed its analysis of the FERC account mapping verification processes for Administrative & General (A&G) accounts, reduced the threshold for reviewing variances in these accounts to $500,000, and conducted an internal audit of FERC Form No. 1 report mapping.

GAD's Desktop Procedure, known as SAP FERC Module Navigation, provides instructions for using the regulatory reporting module in FirstEnergy's SAP systems. The goal of the SAP regulatory reporting process module is to assign all amounts in the SAP accounts to the FERC accounts. In June 2006, a verification of the FERC account mappings for FERC A&G Account Nos. 920 through 935 was completed. Mapping changes and true-up adjustments for FERC Account No. 925 - Injuries and Damages; FERC Account No. 926 - Employee Pensions and Benefits; and FERC Account No. 928 - Regulatory Commission Expenses was made. The analysis confirmed that all other FERC mappings for the A&G accounts were accurate.

The threshold for reviewing variances in FERC A&G accounts was reduced, as recommended, from $1 million to $500,000. As discussed below, variances of $500,000 or more are analyzed, with an explanation of each variance provided. A flux (i.e., variation) analysis of operations and maintenance (O&M) accounts is conducted quarterly. This analysis compares the current quarterly balance of an account (e.g., the balance of an account as of March 31, 2010) with the balance in that account in the same quarter in the previous year (i.e., March 31, 2009). The flux analysis is used to identify mapping errors and trace errors (i.e., it provides an on-going FERC mapping verification). Explanations for variances of $500,000 or more are prepared by the employee responsible for that account and the supervisor/team lead must approve the explanation of the variance provided. For example, in the first quarter 2010 flux analysis, Met-Ed's Other Power Supply-Other Expenses increased from approximately $16.0 million to $41.5 million, an increase of $25.5 million or 160%. The explanation for the increase was due to an increase of $80 per Megawatt (MW) in capacity prices from 2009 to 2010. FirstEnergy also prepared an explanation of trends in O&M expenses by FERC Account for the period 2000 through 2005. For Met-Ed's Other Power Supply-Other Expenses, an explanation was provided for each of the years 2001 through 2005. In 2001, the 2000-2001 variance was due to implementation of a Provider Of Last Resort Deferral per PUC Merger Stipulation. Other explanations are listed for each of the years 2002 through 2005 for this particular account and none of the explanations were the same.

IAD performed an audit of the FERC Form No. 1 report mapping which was completed on March 6, 2009. The internal audit report states that the FERC account mapping process is necessary because the SEC chart of accounts is different from the FERC Uniform System of Accounts. The mapping from the SEC chart of accounts to the FERC Uniform System of Accounts is configured in the FERC SAP software. The Regulatory Accounting team in General Accounting processes the data monthly to allocate costs to the FERC accounts and gathers the data for the quarterly and yearly FERC reporting. The FERC Form No. 3-Q report is filed for quarters 1, 2, and 3, and the FERC Form No. 1 report is filed annually as the 4th quarter filing. The objective of

the internal audit was to determine if the mapping was accurate. Key controls evaluated during the internal audit included:

- Restriction of access to the FERC software and to the SAP FERC module to appropriate personnel.
- Appropriate FERC account mapping, including direct accounts, traced accounts, new general ledger accounts and new cost centers.
- Completeness of the quarterly variance analysis.
- Completeness and accuracy of General Accounting procedures.
- Appropriate review processes in place to ensure accurate FERC reporting.

Based on sample testing, Internal Auditing concluded that the controls surrounding the FERC account mapping process were appropriate to ensure accurate FERC reporting. Internal Auditing identified opportunities for improving the account mapping process in the following areas:

- Summarized account disbursement – The FERC mapping process includes a group of small dollar accounts that fall below established thresholds which are summarized into one small dollar line item in the FERC trace table. IAD recommended that the summarized bucket be further analyzed to determine if the limited review of the summarized bucket tracing was representative of the total population of dollars in the summarized bucket. Internal Auditing also recommended periodic monitoring to ensure allocated costs do not aggregate to significant or material costs.

- Quarterly variance review process – Each quarter, the FERC account balances are compared to the prior year's balances for the same time period, and variances of plus or minus $500,000 are analyzed for reasonableness. Testing confirmed that variances exceeding the threshold are explained; however, management or supervisory review did not occur. Internal Auditing recommended that a review process be implemented to confirm the completeness and accuracy of the explanations and question any that were not clear.

- Desktop procedures for the FERC account mapping process – Internal Auditing reviewed the process and procedures documenting the FERC monthly processing, the FERC Form No. 3-Q report preparation, and the FERC Form No. 1 report preparation to ensure completeness of documentation for the purposes of cross-training and knowledge sharing of the complex FERC account mapping process. Several areas for improvement were recommended, including:

  - ✓ Documenting all steps performed in the monthly process.
  - ✓ Documenting assumptions, expectations, and checkpoints.
  - ✓ Documenting all steps performed in the Form 3-Q process.

- Annual review of FERC software access – Internal Auditing recommended that annually, in conjunction with the FERC Form No. 1 filing, the access to the FERC software on the network be reviewed to confirm who has read/write access and who has read only access, and access to the SAP FERC module be reviewed to ensure appropriate access.

- Identification of new cost centers – New general ledger accounts and cost centers are configured in the SAP FERC module each month prior to mapping the accounts for the FERC monthly processing. Internal Auditing identified a more efficient way to identify new cost centers by using an alternate SAP transaction, which will save time in the monthly FERC processing.

Subsequently, all five recommendations from the internal audit were implemented by June 30, 2009. FirstEnergy provided evidence to support implementation of each recommendation. For example, FirstEnergy provided evidence of review of access to FERC software. Management determined that no subsequent audits were required. The Audit Staff reviewed the quarterly O&M flux analysis conducted for the first quarter of 2010, which compared the balance of each account as of March 31, 2010 with the balance in the same account as of March 31, 2009. The flux analysis showed just seven FERC A&G accounts for Met-Ed, seven for Penelec, and four for Penn Power were subject to variance reviews on the basis of having fluctuations of $500,000 or larger and 20% or more. More importantly, explanations for all of these variances were prepared and the supervisor/team lead reviewed and approved each explanation.

Staff's Follow-up Recommendation – **None.**

Prior Recommendation – Provide a copy of the IAD Third Quarter Assessment of Internal Controls Over Financial Reporting, as well as the PricewaterhouseCoopers, LLP (PwC) management letter for the 2006 financial audit, to PUC Audit Staff when available.

Prior Situation – BWG found that FirstEnergy had appropriately installed internal controls and corrected issues related to charging time and materials to expense rather than capital accounts that occurred following the implementation of SAP in 2003. In June 2003, FirstEnergy had implemented SAP corporate wide to support its information needs, including shared services, customer care, and work management throughout the Company's regulated and unregulated operations. After implementation of SAP, the Energy Delivery & Customer Service (ED&CS) group in FirstEnergy identified a significant increase in charges to Operations and Maintenance (O&M) expenses which should have been capitalized as work-in-progress or plant-in-service. In November 2003, ED&CS performed a study to identify and quantify all issues relating to potential cost misclassification. The study identified $36.6 million of costs originally charged to expense that was reclassified to capital asset accounts in 2003. In February 2004, FirstEnergy's external auditor issued a Management Letter to the FirstEnergy Audit

Committee citing the internal controls over the accounting for capital projects as a "material weakness". Further study was performed during 2004, with ED&CS focused on evaluating the root cause for each identified cost misclassification issue. Financial reclassifications identified through December 2004 totaled an additional $17.1 million.

Ultimately, in 2005, a mechanized tool was developed to identify improper charges to O&M and transfer the amounts to appropriate capital accounts. KPMG, LLP was engaged in March 2006 to identify opportunities to automate manual controls and migrate from a manual detective to an automated preventive orientation. In April 2006, FirstEnergy engaged Ernst & Young, LLP to test certain key controls. In June 2006, FirstEnergy's IAD completed its Second Quarter Assessment of Internal Controls Over Financial Reporting. Part of this assessment was a review of the accounting issues related to the accounting for capital projects. IAD reported the controls over financial reporting to be effective. IAD was performing its Third Quarter Assessment of Internal Controls Over Financial Reporting at the time of BWG's field work, so the Consultant recommended that FirstEnergy provide a copy of the Third Quarter Assessment of Internal Controls Over Financial Reporting, as well as the PricewaterhouseCoopers, LLP (PwC) management letter for the 2006 financial audit, to PUC Audit Staff when it became available.

<u>Follow-up Finding and Conclusion No. V-2</u> – FirstEnergy has corrected deficiencies identified in its assessment of internal controls over financial reporting.

Copies of the IAD's Third Quarter Assessment of Internal Controls Over Financial Reporting as of September 30, 2006, the Internal Audit Department's Fourth Quarter Assessment of Internal Controls Over Financial Reporting as of December 31, 2006, and the PwC report regarding internal control over financial reporting for the 2006 financial audit were included in FirstEnergy's Implementation Plan submitted to the PUC on June 29, 2007.

The Third Quarter Assessment of Internal Controls Over Financial Reporting as of September 30, 2006, found that, overall, the internal controls over financial reporting were effective as of September 30, 2006. More specifically:

- 22 deficiencies were closed (remediated and tested) in the third quarter.

- 39 deficiencies were open at final certification:
  - 36 control deficiencies, of which 23 had been resolved (i.e., the remediation plan had been implemented and the new or resolved control(s) were pending operational effectiveness testing by Internal Auditing).
  - One deficiency had not yet been classified (i.e., further analysis was necessary before it could be determined if this issue was limited to a deficiency).
  - Two significant deficiencies, of which one had been resolved, with the new or resolved control(s) pending operational effectiveness training by Internal Auditing, and

one had been considered a material weakness for Ohio Edison and Penn Power, a remediation plan having been developed with expected implementation by October 31, 2006.
  - The 39 deficiencies open at final certification had been documented and reported as part of FirstEnergy's report of internal control over financial reporting, and action plans were underway to remedy these deficiencies.

The Fourth Quarter Assessment of Internal Controls Over Financial Reporting as of December 31, 2006, found that, overall, the internal controls over financial reporting were effective as of December 31, 2006. More specifically:

- 81 deficiencies were closed.
- 23 deficiencies were open at final certification:
  - 21 control deficiencies, of which seven had been resolved and 14 had remediation plans developed and documented, but not implemented as of the report date.
  - Two significant deficiencies, both of which had been resolved, with the new or resolved control(s) pending operational effectiveness training by Internal Auditing.
  - The 23 deficiencies open at final certification had been documented and reported as part of FirstEnergy's report of internal control over financial reporting, and action plans were underway to remedy these deficiencies.

The Report of Independent Registered Public Accounting Firm issued by PricewaterhouseCoopers LLC states that the consolidated financial statements were presented fairly through December 31, 2006, and that management's assertion that the Company had maintained effective internal control over financial reporting as of December 31, 2006 was fairly stated based on criteria established in Internal Control – Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission.

Staff's Follow-up Recommendation – None.

VI. ELECTRIC RELIABILITY

Background – The Stratified Management and Operations Audit of Metropolitan Edison Company (Met-Ed), Pennsylvania Electric Company (Penelec), and Pennsylvania Power Company (Penn Power) (collectively, the FirstEnergy Pennsylvania Companies, FE-PA Companies or Companies) conducted by the consulting firm Barrington-Wellesley Group, Inc. (BWG or Consultant), released by the Pennsylvania Public Utility Commission (PUC or Commission) on March 1, 2007, at D-05MGT002, D-05MGT003 and D-05MGT004, contained six recommendations in the Electric Reliability chapter. BWG rated this functional area as needing significant improvement. In this chapter, five prior recommendations and prior situations are reviewed and five follow-up findings and three recommendations are presented.

Prior Recommendation – Develop a detailed plan to improve distribution system reliability and meet the System Average Interruption Duration Index (SAIDI) goals set in the Settlement Agreement.

Prior Situation – Due to several reliability issues in the past, FirstEnergy Corp. (FirstEnergy) entered into a Settlement Agreement with the Commission, in November 2004 at Docket Number I-00040102, whereby the FE-PA Companies were directed toward improving system reliability for all customers. In accordance with the Settlement Agreement, FirstEnergy had committed to making various changes and improvements in inspection and maintenance practices and procedures that would assist in addressing major causes of outages and detecting developing problems in a timely manner. The SAIDI, Customer Average Interruption Duration Index (CAIDI) and System Average Interruption Frequency Index (SAIFI) were the three reliability indices commonly used by FirstEnergy to determine system reliability across its distribution system. SAIDI is the average outage duration for each customer served and is calculated by dividing the sum of all sustained customer interruption[4] durations by the total number of customers served. CAIDI gives the average outage duration and is calculated by dividing the sum of all sustained customer interruption durations by the total number of interrupted customers. SAIFI is the average number of interruptions and is calculated by dividing the total number of sustained customer interruptions by the total number of customers served. SAIDI is the product of SAIFI and CAIDI. While SAIFI and SAIDI are driven primarily by frequency or time duration respectively, both variables drive CAIDI. The lower the SAIFI, SAIDI and CAIDI numbers, the better the overall system reliability performance.

The 2004 Settlement Agreement required the FE-PA Companies to improve their respective SAIDI performance over their 2003 calendar year values and maintain SAIDI performance at or below the 2003 levels in the years 2005 and 2006. The FE-PA Companies had not improved their SAIDI performance in accordance with the Settlement Agreement. SAIDI performance for all three of the FE-PA Companies had

[4] Sustained customer interruption is defined as the loss of electric service for one or more customers that is five minutes or longer in duration.

deteriorated significantly since 2003, and substantial improvement was required by each electric distribution company (EDC) in order to meet the 2007 goals. Met-Ed, Penelec and Penn Power needed a reduction from 2005 SAIDI levels of 43%, 37%, and 36% respectively, to meet their 2007 goals.

Therefore, BWG recommended that FirstEnergy develop a plan to improve SAIDI to meet, or exceed, the targets set in the Settlement Agreement. The plan was to include detailed steps for each of the FE-PA Companies to take for improving their SAIDI indices. The Consultant suggested that such steps include one or more of the following:

- Reduction in dispatcher average response time;
- Reduction in acceptance time by first responders; i.e., when repair crews need to be called in after normal working hours;
- Reduction in travel time to faulted area;
- Reduction in restoration of service time;
- Accurately documenting time when service is restored to each customer; and
- Installing radio-controlled sectionalizing and other means of dispatch control.

Follow-up Finding and Conclusion No. VI-1 – **Each of the FE-PA Companies have developed and implemented reliability improvement plans which have helped each EDC significantly improve its SAIFI and SAIDI performance.**

In accordance with the 2004 Settlement Agreement, the FE-PA Companies committed to improve their SAIDI performance over the calendar year 2003 achieved SAIDI levels so that for the 12 months ending December 31, 2007, the EDCs would achieve the following improvements at each of the FE-PA Companies:

- Met-Ed – At least a 5% improvement over the 2003 achieved SAIDI performance or a 2007 SAIDI goal of 133;
- Penelec – At least a 25% improvement over the 2003 achieved SAIDI performance or a 2007 SAIDI goal of 179; and
- Penn Power – At least a 30% improvement over the 2003 achieved SAIDI performance or a 2007 SAIDI goal of 134.

The FE-PA Companies' actual SAIFI, CAIDI and SAIDI levels for 2006 through 2009 are summarized in Exhibits VI-1, VI-2 and VI-3. As shown in Exhibits VI-1, VI-2 and VI-3, Met-Ed, Penelec and Penn Power were unable to meet their 2007 SAIDI goals of 133, 179 and 134, respectively. However, Penelec and Penn Power's 2009 SAIDI performance of 143 and 87, respectively, were significantly below the 2007 SAIDI goal of 179 and 134, respectively. Met-Ed's 2009 achieved SAIDI performance of 134 was one minute above its 2007 SAIDI goal of 133.

Exhibit VI-1
Metropolitan Edison Company
Reliability Indices Results
2006-2009

	2006	2007	2008	2009	Benchmark	Standard	% Change
SAIFI	1.73	1.63	1.35	1.21	1.15	1.38	-30.0%
CAIDI	121	112	104	111	117	140	-8.3%
SAIDI	210	182	139	134	135	194	-36.2%

Source: Data Request ER-4

Exhibit VI-2
Pennsylvania Electric Company
Reliability Indices Results
2006-2009

	2006	2007	2008	2009	Benchmark	Standard	% Change
SAIFI	1.47	1.71	1.56	1.22	1.26	1.52	-17.0%
CAIDI	109	110	142	117	117	141	8.3%
SAIDI	158	188	220	143	148	213	-9.5%

Source: Data Request ER-4

Exhibit VI-3
Pennsylvania Power Company
Reliability Indices Results
2006-2009

	2006	2007	2008	2009	Benchmark	Standard	% Change
SAIFI	1.22	1.19	1.13	0.75	1.12	1.34	-38.5%
CAIDI	112	126	111	116	101	121	3.6%
SAIDI	137	150	125	87	113	162	-36.5%

Source: Data Request ER-4

The FE-PA Companies have worked with the PUC's Bureau of Conservation Economics and Energy Planning (CEEP) considerably since the 2007 Stratified Management and Operations Audit and performed focused reliability audits of Met-Ed and Penelec. Met-Ed and Penelec agreed with the Commission's Staff, in particular the Bureau of CEEP, to perform a focused audit of its planning, design, construction, operations and maintenance practices, policies and procedures and to recommend additional action plans to be implemented in order to improve service reliability. In 2007, the UMS Group, an international utility management consulting firm specializing in the global energy and utilities industries, performed a focused reliability audit of Met-Ed which was completed in July 2007. This same consultant performed a focused reliability audit of Penelec which was completed in March 2009.

The recommendations from the UMS audits indicated several areas that Met-Ed and Penelec should work on to improve their reliability. Some examples include: targeting off right-of-way trees, installing/replacing lightning arrestors on select feeder backbones and substations, installing fuses and reclosers, etc. Based on recommendations from the UMS audits, the FE-PA Companies developed reliability improvement plans to include reliability improvement projects, worst performing circuit engineering reviews and annual preventative maintenance plans.

As a result of developing the reliability improvement plans and implementing the UMS audit recommendations, the FE-PA Companies have reduced (i.e., improved) their SAIFI values, which in turn, has reduced (or improved) their SAIDI performance. In addition, the FE-PA Companies experienced a number of equipment related outages due to defective porcelain cutouts and have been striving to replace these cutouts in order to further reduce equipment related outages that impact SAIFI and SAIDI results.

Staff's Follow-up Recommendation – **None.**

Prior Recommendation – As a supplement to the existing annual report to the PAPUC, provide a list of each deficiency and major deficiency discovered during the annual infrared scans and the time to correct the major deficiency.

Prior Situation – The 2004 Reliability Settlement Agreement required all FE-PA Companies to perform annual infrared scans of all substations beginning in 2005; however, as of December 2005 corrective measures had not been taken in accordance with the Settlement Agreement. During 2005, approximately 10 deficiencies and 15 major deficiencies were found during the infrared scans. Of the 15 reported major deficiencies, only six were repaired within seven days. Of the remaining nine, the average repair time was well in excess of 140 days. The FE-PA Companies had appropriately implemented an annual infrared scan program for their substations, and in 2005, 100% of all substations were scanned. The Settlement Agreement required corrective measures to be taken on major deficiencies within one week and corrective measures to be scheduled for deficiencies within 30 days.

Consequently, to help ensure that deficiencies and major deficiencies identified during thermal scans are corrected within required time limits BWG recommended that the FE-PA Companies provide additional details to the Commission in the annual report regarding each deficiency and major deficiency. To enable the Commission to more closely monitor the FE-PA Companies progress, BWG suggested that the FE-PA Companies provide their reasons that each major deficiency is not repaired within seven days.

<u>Follow-up Finding and Conclusion No. VI-2</u> – The FE-PA Companies provided an annual list of each deficiency and major deficiency as a supplement to their 2007 Annual Report of Compliance, but discontinued reporting this information thereafter; moreover a small portion of the deficiencies are not being corrected within a reasonable time frame.

The total number of substations in the FE-PA Companies' service territories and the number that were scanned from 2006 to 2009 are summarized on Exhibit VI-4. In 2007, five Met-Ed substations and two Penn Power substations were energized resulting in preventative maintenance work not scheduled for completion until 2008. In 2009, Met-Ed shifted its focus to the replacement of deteriorated/aging equipment; as a result the remaining 91 (i.e., 217-126) substations were scanned in the first quarter of 2010.

Exhibit VI-4
FirstEnergy Pennsylvania Companies
Number of Substations Scanned
2006-2009

Year	Met-Ed		Penelec		Penn Power	
	Substations	Scanned	Substations	Scanned	Substations	Scanned
2006	212	212	408	408	76	76
2007	217	212	408	408	78	76
2008	217	217	408	408	78	78
2009	217	126	408	408	78	78

Source: Data Request ER-43

The FE-PA Companies were also required to take corrective measures on major deficiencies[5] within one week and within 30 days for deficiencies[6]. The number of deficiencies and major deficiencies from 2008 through 2010 that were not fixed in the appropriate time frame (i.e., 30 days and 7 days, respectively) are provided by FE-PA Company in Exhibit VI-5. The FE-PA Companies filed the 2007 Annual Report of Compliance with the Commission on March 17, 2008. This report stated that each FE-PA Company completed its annual infrared scan of all 767 substations in 2007. In addition, a list of each deficiency and major deficiency discovered during the annual infrared scans and the time to correct each major deficiency were provided as an Appendix to the 2007 report. However, the FE-PA Companies did not divulge any details about such deficiencies in their 2008 or 2009 regular annual reliability reports. According to the FE-PA Companies, the 2007 Annual Report of Compliance was the last reporting required under the previous reliability settlement, and therefore, the FE-PA Companies discontinued this reporting. This change in reporting occurred despite BWG's 2007 management audit recommendation that the FE-PA Companies

[5] A major deficiency exists when the temperature differential between the equipment and ambient air is equal to or greater than 100 degrees centigrade.
[6] A deficiency exists when the temperature differential between the equipment and ambient air is between 50 and 99 degrees centigrade.

provide additional details to the Commission in the annual reliability report regarding each deficiency and major deficiency and provide their reasons that each major deficiency is not repaired within seven days.

Exhibit VI-5
FirstEnergy Pennsylvania Companies
Number of Deficiencies and Major Deficiencies
Found and Not Fixed in a Timely Manner
2008-2010

	Met-Ed		Penelec		Penn Power	
	Found	Not Fixed	Found	Not Fixed	Found	Not Fixed
Major Deficiency	3	3	5	5	0	0
Deficiency	19	11	36	22	7	4

Source: Data Request ER-33

The infrared scan information is of particular significance because temperature is among the first indicators for determining the condition of equipment. Thermal irregularities occur when there's a temperature differential between the equipment and ambient air. Infrared thermography is an integral part of predictive and preventive maintenance programs and is by far the most efficient and effective technology available for locating thermal anomalies. FirstEnergy management indicated that the time delay between the detection of a hot spot and when the schedule corrective action is taken depends on the type and criticality of the equipment and the magnitude of the measured temperature rise.

Some of the reasons provided by the FE-PA Companies for not fixing the deficiencies in a timely manner include unavailability of parts needed for repairs, inability to get the line out of service during summer peak conditions and inability to get outage authorization from the PJM Interconnection (PJM). FirstEnergy management indicated that it is not an easy task to take the problem equipment out of service immediately because other parties involved, such as PJM, large industrial customers etc., will not let the EDCs take the devices out of service to get fixed during certain times of the year.

The average cost of downtime across all industries associated with a failed substation could be as high as $950,000 per hour. [7] For utilities, the hourly downtime cost was approximately $650,000. Hence, in order to avoid drastic financial and operational losses, the FE-PA Companies should strive to fix identified thermal anomalies within a reasonable time frame. The FE-PA Companies should consider performing thermal scans of substations during the winter and early spring months rather than during the summer when loading is the highest. This would enable them to

[7] According to the Information Technology (IT) Performance Engineering and Measurement Strategies: Quantifying Performance and Loss, Meta Group, October 2000 found at http://www.acp-wa-state.org/resourcedoc/Downtime_Costs.pdf

have equipment in good condition to meet the demands of summer and would avoid the need for shutdown authorization from third parties during peak summer months.

Staff's Follow-up Recommendation – **Strive to correct major deficiencies within seven days and deficiencies within 30 days; and submit, as an appendix to the Annual Reliability Report to the Commission, a list of deficiencies and major deficiencies not corrected within their respective time frames and the reasons they have not been corrected in a timely manner.**

Prior Recommendation – Conduct a follow-up review at the end of 2006 to review the status of the installation of Penelec's Ampere/Ampere-Demand meters.

Prior Situation – The 2004 Reliability Settlement Agreement required the FE-PA Companies to install permanent ampere/ampere-demand meters in their distribution substations in order to gather peak load data for planning purposes by year-end 2007. Permanent ampere/ampere-demand meters are used for monitoring substation transformers and maximizing transmission line capacity. The meters can also automatically collect and store monthly demand data for all three phases in a distribution line which would help Penelec operate its system in an efficient manner. As of January 31, 2006, Penn Power had completed its installation of all planned meters while Met-Ed had installed all but three planned meters, with the remaining three meters expected to be installed by the end of 2006. Penelec had installed just 336 of 1,375 planned meters (24.4%) and estimated that 535 more meters would be installed by the end of 2006. Penelec planned to install its remaining 504 meters in 2007.

Follow-up Finding and Conclusion No. VI-3 – **Penelec installed all but two Ampere/Ampere-Demand meters by the end of 2007 as agreed to in the 2004 Reliability Settlement Agreement; and the last of the installations was completed by June 10, 2010.**

Penelec had planned to install 1,375 permanent ampere/ampere-demand meters but the number was modified in 2007 to 1,112 due to various reasons. The original list included installation of 191 demand meters on line step down transformers that were not in distribution substations and which were not required under the Reliability Settlement Agreement. Seventy-one meters included circuits with existing revenue metering therefore additional metering installations were not necessary as the existing metering met the requirement. Also, the original list counted one circuit twice resulting in a duplicate record. Exhibit VI-6 lists the number of ampere/ampere-demand meters that were installed each year from 2004-2010.

Two required meter installations were completed after the 2007 deadline. One was completed in January 2008 and was delayed due to replacement of a substation breaker. The final meter was installed in June 2010. Penelec had a temporary meter

Exhibit VI-6
FirstEnergy Pennsylvania Companies
Number of Ampere/Ampere-Demand Meters Installed
2004-2010

Year	Meters Installed
2004	60
2005	238
2006	219
2007*	593
2008*	1
2009*	0
2010*	1
Total	**1,112**

* Note that the data from 2004 to 2006 are for all three FE-PA Companies and from 2007 to 2010 only reflect Penelec installations.
Source: Data Request ER-18

installed until an outage could be rescheduled[8] for the permanent installation. Although Penelec did not technically meet the requirements of the 2004 Reliability Settlement Agreement, all ampere/ampere-demand meters were installed by June 2010.

Staff's Follow-up Recommendation – **None.**

Prior Recommendation – As a supplement to the existing quarterly reports provided to the PUC, list and describe remedial actions planned or taken for any circuit that appears on the list of 5% Worst Performing Circuits for one year or more, or in four out of six quarters.

Prior Situation – The 5% worst performing circuits for each of the three FE-PA Companies through 2005 were determined using a Circuit Reliability Index (CRI) which was affected by weighted factors including Momentary Average Interruption Frequency Index (MAIFI)[9], CAIDI, SAIFI and lock outs where a substation breaker trips and remains open. FirstEnergy reported in 2005 that no circuit on Penn Power was on the 5% worst performing feeder list for a year or more. Penelec had nine feeders that remained on the 5% worst performing circuit list for more than a year and Met-Ed had three. BWG believed that it was reasonable for a circuit to be placed on the 5% worst performing circuit list one quarter and stay on the list for two additional quarters while remedial action takes place. If the same circuit stays on the list for four quarters or is on the list for four out of six quarters, then additional action needs to be taken.

[8] The permanent installation for the final ampere/ampere-demand meter being discussed here required a forced outage to be coordinated at an opportune time with the industrial customer involved.
[9] MAIFI is the average number of momentary interruptions that a customer would experience during a given period. A momentary interruption is an outage of less than five minutes in duration.

<u>Follow-up Finding and Conclusion No. VI-4</u> – The FE-PA Companies have had circuits that have been consistently showing up on the 5% worst performing circuit list for two years or longer.

The FE-PA Companies should be routinely identifying circuits that have been on their 5% worst performing circuits list for one year or in four out of six quarters and strive to reduce the number of circuits that consistently show up on the list. Moreover, in accordance with 52 Pa Code § 57.195(e) (3), specific remedial efforts taken and planned for the 5% worst performing circuits should be identified.

Beginning in 2006, distribution circuits were ranked based on each circuit's contribution to the EDC's overall SAIDI. The FE-PA Companies use SAIDI as a measure of circuit performance where SAIDI is a measure of the total customer minutes of distribution outages on the circuit. The FE-PA Companies discontinued the use of CRI in determining their 5% worst performing circuits because the EDCs found that ranking worst performing circuits based on CRI did not necessarily align with the worst performing circuits based on a SAIDI analysis.

In the existing quarterly reports to the PUC, the FE-PA Companies provide a list of the top 5% of circuits based on a rolling 12-month period that have the highest SAIDI. The list includes the name of the substation that was affected, remedial action planned or taken, status of remedial work, date remedial work was completed and the number of quarters that the circuit has appeared on the list. Exhibit VI-7 provides a list of the top three circuits in each FE-PA Company's service territory that have shown up on the 5% worst performing circuits list and the number of quarters that they have been on the list in the past three and a half years (i.e., from January 2007 to June 2010).

Exhibit VI-7
FirstEnergy Pennsylvania Companies
Worst Performing Circuits
January 2007-June 2010

Company	Substation	Circuit	Number of Consecutive Quarters
Met-Ed	North Bangor	00826-3	14
	Shawnee	00895-3	14
	Walker	00865-3	8
Penelec	Warren South	00220-41	14
	Union City	00206-43	14
	Erie South	00259-31	14
Penn Power	Hartstown	W-126	12
	Mercer	W-167	9
	Canal	W-104	8

Source: Data Request No. ER-13

All three FE-PA Companies have had circuits that have shown up on the 5% worst performing circuits list consistently. As evident from Exhibit VI-7, five circuits have been on the 5% worst performing circuits list for 14 consecutive quarters or three and a half years. The primary causes of these outages have been attributed to vehicle accidents, line failures, non-preventable trees and equipment failures. For the most part, remedial work is performed on these circuits immediately to include field engineering reviews.

The FE-PA Companies indicated that most of the circuits that show up on the 5% worst performing circuits list on a consistent basis have a lot of wire and are very rural and not easily accessible which makes it difficult and takes longer to get to them. Moreover, some of these circuits don't have a lot of ties with other neighboring circuits making it difficult to restore outages in a short period of time leading to high customer minutes of interruption.

Sectionalizing of a distribution system can have a significant impact on continuity of service and overall system reliability. Proper sectionalizing minimizes the number of customers affected by service interruption reducing SAIFI and SAIDI. Radio controlled sectionalizing would modify the topology of the system especially the rural areas that are not easily accessible. The lines can be energized through different paths through interconnections with other feeders and/or interconnection of lines belonging to the same feeder.

The Audit Staff understands that most of these circuits are rural and not easily accessible which is why we suggest that the Company consider installing radio controlled sectionalizing at some of these locations or some other devices to improve reliability. Reportedly the FE-PA Companies have looked into radio controlled sectionalizing but didn't think that they would get the biggest "bang for the buck" (i.e., the costs to install the devices would be much higher than the benefits derived such as a reduction in SAIDI). The Audit Staff is not suggesting that the FE-PA Companies immediately install radio controlled sectionalizing, but we believe that performing a cost benefit analysis for radio controlled or similar sectionalizing devices for prospective areas would be a step in the right direction.

Staff's Follow-up Recommendation – **Take additional actions on circuits that stay on the 5% worst performing circuit for more than a year and develop solutions to improve overall reliability on these circuits.**

Prior Recommendation – Conduct a more useful planning study.

Prior Situation – In accordance with the 2004 Reliability Settlement Agreement, FirstEnergy conducted a line and substation workforce study pertaining to the FE-PA Companies. The study was a staffing analysis which examined each of the FE-PA Companies' staffing levels and how they were expected to be affected by retirement and non-retirement attrition. The workload forecast was based on historical timesheet data as well as contractor usage for the year 2004.

BWG found some of the study's results to be of questionable value. The Consultant did not find the 10-year workload forecast to be reasonable, in part because the Met-Ed and Penelec line workforce forecast projected man hours decreasing from 2005 to 2014. Plus, the study used two assumptions that BWG deemed to be somewhat contradictory. The FE-PA Companies' strategy was to backfill attrition on a one-to-one basis (i.e., one new hire or internal transfer would replace each lineman who retires, resigns, or leaves for some other reason). The study also assumed productivity improvements of 1.5% per year based on future improvements in planning and scheduling and modified work practices and process improvement. Nonetheless, BWG felt that replacing experienced lineman with one of lesser experience would suggest a loss of productivity rather than an improvement.

Follow-up Finding and Conclusion No. VI-5 – **FirstEnergy has implemented a work management process at the three FE-PA Companies which forecasts line worker staffing based on historical and future workload.**

FirstEnergy hired an outside consultant in 2007 to perform a Workload and Manpower Planning Analysis. FirstEnergy refined the model and the process that was recommended by the outside consultant to include additional focus on forecasting and planning workload and resource requirements. The model is designed with a number of features such as historical, current and future workload, historical and current manpower resources, etc. FirstEnergy also introduced a Forecasting and Planning process at each of the FE-PA Companies throughout 2010. The process included developing a Forecasting and Planning Group at each of EDCs which would allow them to estimate the amount of work needing completion with an accurate and balanced staffing forecast. The process was introduced at Penelec and Penn Power during the second quarter and at Met-Ed in the third quarter of 2010. The model that is used by the Forecasting and Planning Group at each FE-PA Company is similar to the one suggested by the outside consultant and is intended to help managers gain a meaningful perspective on the past and future nature of line worker workload.

The Forecasting and Planning process involves keeping monthly dashboards and summary workload reports but the Audit Staff was unable to review any of these reports because the final format for the process was still under development. FirstEnergy management indicated that the process would be refined further in 2011 as it is fully implemented at each FE-PA Company and that once the line worker forecasting and planning process is finalized, a similar process will be implemented for the substation group. The primary goal of the Forecasting and Planning process is to enable management to review possible gaps in the line work plan, resources, or financial targets and adjust and manage the work plan in order to meet operational and financial commitments.

FirstEnergy does not maintain historical staffing budget data; hence, neither FirstEnergy nor the Audit Staff could identify any trends in the variances between budgeted and actual staffing levels for prior years. FirstEnergy indicated that the comparison between actual and budgeted staffing levels for prior years is not made because planning and forecasting is based on known and anticipated workload and not on actual versus budgeted staffing levels. Although the Audit Staff thinks that

FirstEnergy is following the right method in projecting its staffing needs, we believe that the Company would benefit considerably from tracking and trending actual staffing levels against budgeted staffing levels. Such trends would indicate any problems that FirstEnergy has had in the past filling certain positions, what can be done to resolve those issues and be better prepared for projecting future staffing needs; see Follow-up Finding and Conclusion No. X-3, in the Human Resources chapter for further discussion and related recommendation.

The FE-PA Companies have established a two year line/substation program called the Power Systems Institute (PSI) for hiring future linemen and substation technicians. In this program, college students train for two years in several aspects such as pole climbing, substation equipment, etc. and upon graduation from the program and from college are hired in the line/substation field. The PSI program is designed to hire a diverse group of individuals that will fulfill the line worker staffing needs of the companies. The PSI program begins every fall and the enrollment numbers are determined by the attrition forecasts developed by each operating company. Exhibit VI-8 shows the total number of individuals that were hired through the PSI program from 2008 through 2010. These numbers include graduate hires for the PA operating companies from other PSI programs in the states of Ohio and New Jersey.

Exhibit VI-8
FirstEnergy Pennsylvania Companies
Power Systems Institute Hires
2008-2010

	2008	2009	2010	Total
Met-Ed	13	16	21	50
Penelec	26	37	31	94
Penn Power	4	4	4	12
Total	**43**	**57**	**56**	**156**

Source: Data Request EO-22

A staffing study and/or workforce management plan should be focused on projected workload requirements (i.e., manhours) that are based on historical trends for work activities and estimated hours needed to perform planned work activities. The estimated workload should be compared to the productive hours available from the workforce and any gaps in available hours to projected workload needs should be identified. Any projected gaps could be filled by contractors and/or workers from other locations that have excess available hours estimated. Forecasting and planning helps align resources with the amount of anticipated workload and provides the data and predictability to make well informed staffing decisions as far as possible in advance.

Staff's Follow-up Recommendation –**None.**

VII. OPERATIONS

Background – The Stratified Management and Operations Audit of Metropolitan Edison Company (Met-Ed), Pennsylvania Electric Company (Penelec), and Pennsylvania Power Company (Penn Power) (collectively referred to as the FirstEnergy Pennsylvania Companies or FE-PA Companies) conducted by the consulting firm Barrington-Wellesley Group, Inc. (BWG), released by the Pennsylvania Public Utility Commission (PUC or Commission) on March 1, 2007, at D-05MGT002, D-05MGT003 and D-05MGT004, contained three recommendations in the Operations chapter. BWG rated this functional area as needing minor improvement. In this chapter, two prior recommendations and prior situations are reviewed and two follow-up findings and one recommendation are presented.

Prior Recommendation – Develop a proactive strategy for dealing with issues that limit the transmission of electric power from west to east.

Prior Situation – In order to serve the customers of the FE-PA Companies, FirstEnergy had to deal with the issue of moving power from west to east. FirstEnergy Corp. (FirstEnergy) did not have a plan at the regulatory or transmission provider level to address west to east power transmission issues. FirstEnergy had taken several steps to facilitate higher volumes of west to east power transfers such as working within various committees and working groups of the regional transmission organization (RTO), the PJM Interconnection (PJM), to support the long range development of the PJM transmission system and capability. PJM manages the high voltage electric grid and wholesale electricity market that serves 13 states and the District of Columbia. FirstEnergy had also upgraded minor items which limited transmission line loading and utilized new technology high temperature conductors in order to make maximum use of facilities. FirstEnergy was also active in scheduling transmission maintenance and construction related outages such that congestion impacts were kept to a minimum.

BWG suggested that in addition to working with PJM, FirstEnergy should develop a cohesive plan for improving and enhancing its capabilities and options for making Midwestern based power available to its Pennsylvania customers. Additionally, the consultant recommended that the FE-PA Companies monitor and offer solutions to congestion related issues as they evolve within PJM.

Follow-up Finding and Conclusion No. VII-1 – **FirstEnergy does not have a documented strategy for moving large volumes of energy from west to east; but has developed a Federal Energy Regulatory Commission (FERC) and RTO Policy Department for dealing with transmission issues and has been an active participant in PJM's Planning Committee (PC) and the Regional Transmission Expansion Planning (RTEP) process.**

FirstEnergy owns American Transmission Systems Incorporated (ATSI), a subsidiary that owns and controls transmission system assets that were previously owned by four of FirstEnergy's electric distribution companies: Ohio Edison Company (Ohio Edison), Pennsylvania Power Company, The Cleveland Electric Illuminating

Company, and The Toledo Edison Company. ATSI owns major high voltage facilities including approximately 7,100 miles of transmission lines with voltages of 345kV, 138kV, and 69kV including 37 interconnections with six neighborhood controlling areas. ATSI's transmission system offers gateways into the east via high capacity ties with Penelec and Met-Ed. In July 2009, FirstEnergy proposed to integrate ATSI's footprint into PJM effective June 1, 2011. FirstEnergy's proposal was primarily based on the relative strength of the tie lines that connect the ATSI transmission facilities with the PJM system compared to the Midwest Independent System Operator (ISO). FirstEnergy expects that more optimum day-ahead commitments, and therefore a reduction in the total congestion across the combined PJM and Midwest ISO systems, will be achieved by including the ATSI system in PJM, the transmission system to which it is more strongly tied.

In the fall of 2006, FirstEnergy developed the FERC and RTO Policy Department in order to deal with RTO policies and FERC matters. In order to improve power flow, the FERC and RTO Policy Department gets actively involved in stakeholder processes that involve major transmission facilities. The primary objective of the FERC and RTO Policy Department is to coordinate FirstEnergy's participation in the FERC and RTO stakeholder processes and to develop and advocate a corporate mission on various FERC and RTO initiatives. In FERC Order 890, FERC obligated transmission owners such as FirstEnergy to address, among other things, transmission planning for the purpose of alleviating transmission congestion. The FE-PA Companies implement this requirement through their participation in the PJM and Midwest ISO RTOs. PJM's FERC approved Operating Agreement describes and provides for robust annual planning that addresses identification and mitigation of congestion as it occurs on the grid including the transmission systems of Met-Ed and Penelec.

The Secretary of the PJM Planning Committee indicated that FirstEnergy is an active member of the Planning Committee and the Transmission Planning Advisory Committee (TEAC). FirstEnergy attends and interacts with these committees on a monthly basis. The PJM Planning Committee addresses technical and procedural issues related to planning and the PJM RTEP process. The TEAC focuses mainly on the results of the analytical studies and the proposed solutions. PJM's RTEP identifies transmission system additions and improvements needed to keep electricity flowing to 51 million people throughout 13 states. Studies are conducted to test the transmission system against mandatory NERC standards as well as PJM regional standards. These studies project 15 years into the future to identify transmission overloads, voltage limitations, and other reliability standards violations. PJM develops transmission plans based on these studies in order to resolve violations that could otherwise lead to overloads and/or blackouts.

Working with PJM and FERC on transmission related issues is extremely vital, especially when working with transmission lines across state borders. By developing the FERC and RTO Policy department, FirstEnergy has taken steps to ensure that transmission issues are proactively acted upon and dealt with in a timely manner. By including ATSI in PJM's footprint, a reduction in total congestion across the combined PJM and Midwest ISO systems has been achieved. Moreover, PJM conducted energy market simulations using two different scenarios regarding the inclusion of the ATSI

footprint in a particular RTO (i.e., PJM and the Midwest ISO). The simulations included detailed models of the Midwest ISO and PJM load generation and their respective constraints. By including FirstEnergy's load and generation into the PJM commitment and dispatch process, FirstEnergy's total system production costs were reduced by 0.08% or about $26 million and total system congestion costs were reduced by 6.3% or about $91 million, for the 12 month period included in the 2009 study. Approximately $16 million of this congestion cost was realized in the combined Met-Ed and Penelec zones as a result of the ATSI move. Therefore, at a minimum, the FE-PA Companies realized congestion cost savings of approximately $16 million during 2009 by moving the ATSI from MISO to PJM. Additionally, savings will be realized annually into the future, but the impact of the savings is uncertain because the PJM simulations that quantified the results from 2009 do not reflect 2010 and future economic conditions (i.e., different economy, different transmission system, and different fuel prices). Furthermore, once the ATSI move to PJM is completed there will be no way to accurately quantify future savings.

Staff's Follow-up Recommendation – **None.**

Prior Recommendation – Include in the staffing study recommended in the Electric Reliability chapter a thorough review of the engineering resource needs of the FE-PA Companies.

Prior Situation – In accordance with the Settlement Agreement, FirstEnergy conducted a line and substation workforce study for its three Pennsylvania operating companies. The study was a staffing analysis that examined each of the FE-PA Companies' staffing levels and how they were expected to be affected by retirement and non-retirement attrition. The study did not address the FE-PA Companies' engineering capabilities and needs as it was not required by the Settlement Agreement. Moreover, the consultant did not find any other studies of FirstEnergy's staffing levels that addressed the FE-PA Companies' engineering resource needs.

Follow-up Finding and Conclusion No. VII-2 – **FirstEnergy conducted a review of its engineering resource needs by developing an engineering staffing strategy to include a workload analysis, staffing forecast, sourcing strategy, etc.**

In 2007, FirstEnergy hired a consultant to perform a Workload and Manpower Planning Analysis to determine future staffing needs based on the work to be performed. The consultant recommended a staffing database model approach but FirstEnergy did not implement the model as suggested because the model did not meet FirstEnergy's accounting structure (i.e., the staffing database model could not fully integrate with the accounting program that FirstEnergy had in place). FirstEnergy updated the model and refined the process to include additional focus on forecasting and planning workload and resource requirements. FirstEnergy developed seven staffing strategies in 2008 that included the following groups: engineering, line, substation, transmission and distribution, system operators, relay, and underground

technicians. These strategies are updated by FirstEnergy annually to include updates on attrition levels, staffing forecasts, etc.

In November 2005, the FE-PA Companies developed and implemented an entry level two-year rotational system called the Engineering Development Program (EDP) for training future engineers. This program was the foundation of the engineering staffing strategy. Moreover, an engineering subcommittee was formed in 2005 to help manage staffing and training issues during the inception of the EDP. The engineering subcommittee consisted of a mix of operating company members and corporate engineering leaders. The Engineering Staffing Strategy included the Engineering Staffing Plan, shown in Exhibit VII-1, which projected the hiring need and staffing data five years into the future.

Exhibit VII-1
FE-PA Companies
Engineering Staffing Plan
2008-2012

	2008	2009	2010	2011	2012
Need					
Staffing Budget Increase	19	2	2	2	0
Forecasted Attrition	27	24	21	21	19
Hiring Need	**46**	**26**	**23**	**23**	**19**
Source					
Rotational Engineering "Grads"	10	21	22	22	16
Experienced Level Hires	36	5	1	1	3
Total Hires	**46**	**26**	**23**	**23**	**19**

Source: Data Request EO-8

In addition to the attrition forecast and the staffing plan, the Engineering Staffing Strategy also includes a detailed recruitment strategy and training and development strategy. The FE-PA Companies have a two-year rotational program for hiring entry level engineers. Once they have completed the two-year program, the graduating engineers are placed in an entry level position within each FE-PA Company which is reflected in Exhibit VII-1 as Rotational Engineering "Grads". When these entry level engineers are hired by the FE-PA Companies, they are deemed as fully capable of being an asset to the department and are accounted for in the staffing plan.

Budgeted staffing levels for prior years were not available for review because FirstEnergy does not maintain historical budgeted staffing data. FirstEnergy management indicated that actual staffing levels are not compared against budgeted levels because planning and forecasting of staffing is based on known and anticipated workload and not on budget/actual staffing levels; see Follow-up Finding and Conclusion No. X-3, in the Human Resources chapter for further discussion and related recommendation. Hence, gaps between budgeted and actual staffing levels for prior years could not be verified for prior years. FirstEnergy has taken a significant step forward by forecasting staffing needs based on current and future workload but comparing actual staffing levels against budgeted levels and trending these levels over a period of time could give the FE-PA Companies a historical indication of any gaps that

have been experienced in the past. For any historical gaps, the FE-PA Companies could look at the projected workload, the staffing levels that were budgeted to complete the workload which could in turn help management make more informed staffing decisions in the future.

Staff's Follow-up Recommendation – **None.**

VIII. EMERGENCY PREPAREDNESS

Background - In order to protect the Commonwealth's infrastructure and ensure safe, continuous and reliable utility service, effective June 2005, Pennsylvania Public Utility Commission (PUC or Commission) 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 should annually submit a Self Certification Form to the Commission documenting compliance with Chapter 101. This form 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?	

* Brief explanation needed if supplied as a response
Source: Public Utility Security Planning and Readiness Self Certification Form, as available on the PUC website.

The Audit Staff reviewed the most recent Self Certification Forms submitted by Metropolitan Edison Company (Met-Ed), Pennsylvania Electric Company (Penelec), and Pennsylvania Power Company (Penn Power) (collectively referred to as the FirstEnergy Pennsylvania Companies or FE-PA Companies) to determine the status of their responses. Our examination of the FE-PA Companies' emergency preparedness included a review of their physical security plans, cyber security plans, emergency response plans, business continuity plans, and all associated security measures. Due to the sensitive nature of the information that was reviewed, specific information is not revealed but rather the generalities of the information reviewed are summarized.

<u>Finding and Conclusion No. VIII-1</u> – The FE-PA Companies have developed and maintain comprehensive emergency response, physical security, cyber security and business continuity plans.

FirstEnergy maintains an electronic version of the Emergency Response Plan (ERP) which it utilizes for system outages and responding to other emergency events such as natural disasters, terrorist threats, vandalism, etc. The ERP is FirstEnergy wide and covers all three FE-PA Companies. State, local, and emergency contact numbers are maintained in the plans. Met-Ed, Penelec and Penn Power perform summer and winter readiness drills annually. Network and tabletop exercises are also performed on an annual basis.

FirstEnergy's Corporate Security maintains a combined or Corporation wide Physical Security Plan (PSP) for Penelec, Met-Ed, and Ohio Edison/Penn Power. The PSP includes cyber asset identification, maintenance and testing programs, North American Electric Reliability Corporation critical infrastructure protection computer security training, and Federal Energy Regulatory Commission standards of conduct training. The Penelec and Met-Ed PSP's are similar to the FirstEnergy Corporate PSP. The Met-Ed PSP includes plans for the Regional Dispatch Office (RDO) and the System Control Center (SCC). All facilities inspected by the Audit Staff appeared to be adequately secured. Additionally, as indicated in Finding and Conclusion No. IX-3, FirstEnergy has implemented a computer based training program to educate its employees regarding IT security issues.

FirstEnergy has a corporate wide Cyber Security Disaster Recovery Plan. The plan includes procedures for every application in the system (approximately 183). FirstEnergy has a separate plan for different functions such as Geographic Information System (GIS), customer outage reporting system, energy management system, etc. All plans are reviewed and updated annually. FirstEnergy also has a Disaster Recovery Plan for the Information Security Operations Center which is located approximately five miles from the Akron headquarters.

The Company has a corporate wide Business Continuity Plan (BCP) but also maintains individual BCP's for Met-Ed's Reading SCC and RDO, and Penelec's RDO. All the BCP's cover business recovery and business resumption and include contingency planning. Each of the BCP's also includes a Pandemic Health Emergency Response Plan. All BCPs and related plans are reviewed and updated annually.

In 2009, a consultant performed a Critical Infrastructure Protection (CIP) assessment of FirstEnergy's cyber and physical security. A total of 119 substations were reviewed in three states. Vulnerability Assessments (VA's) were performed on four substations in Penn Power's service territory, 25 substations in Met-Ed's service territory and 22 substations in Penelec's service territory. There were three substations that had security issues at the time of the assessment, but upon review by the Audit Staff it appeared that all security issues have been appropriately rectified.

Routine periodic updating of the emergency response, physical security, cyber security and business continuity plans is a crucial aspect of emergency preparedness and is something FirstEnergy is doing well. By maintaining up-to-date plans, the Company has help to ensure that they are prepared to respond to emergency situations in a timely and organized manner. Additionally, testing the plans and performing readiness drills with emergency personnel and the Commission is also a significant aspect of emergency preparedness and goes to show that the FE-PA Companies are prepared to respond to emergencies when they occur.

Staff's Follow-up Recommendation – **None.**

IX. SUPPORT SERVICES

Background - The Stratified Management and Operations Audit of Metropolitan Edison Company (Met-Ed), Pennsylvania Electric Company (Penelec), and Pennsylvania Power Company (Penn Power) (collectively referred to as the FirstEnergy Pennsylvania Companies or FE-PA Companies), conducted by the consulting firm Barrington-Wellesley Group, Inc. (BWG), released by the Pennsylvania Public Utility Commission (PUC or Commission) on March 1, 2007 at D-05MGT002, D-05MGT003 and D-05MGT004, contained six recommendations in the Support Services chapter. BWG rated this functional area as needing minor improvement. In this chapter, three prior recommendations and prior situations are reviewed and three follow-up findings and one recommendation are presented.

Prior Recommendation – Improve inventory turnover rates and eliminate excess inventory.

Prior Situation – BWG found that inventory levels for each of the FE-PA Companies had increased each year from 2003 through 2005, and recommended that the FE-PA Companies implement practices to reduce their materials and supplies inventories. Year-end inventory levels for the three FE-PA Companies combined had increased from $24.4 million in 2003 to $30.2 million in 2005. Inventory turnover levels in 2005 for Met-Ed, Penelec, and Penn Power were 1.81, 1.47, and 1.45, respectively, which were below the levels of the better performing Pennsylvania utilities. BWG believed that FirstEnergy could increase its inventory turnover rates to 3.0, reduce inventory balances by $5.2 million, and reduce annual inventory carrying costs by $522,000. BWG also noted that inventory turnover was not a FirstEnergy Supply Chain incentive objective and recommended that a Supply Chain incentive objective based on maintaining improved inventory turnover rates (including inventory turnover rates for materials and supplies inventory) be developed.

As of December 31, 2005, Met-Ed, Penelec, and Penn Power had inventory with no issues since the implementation of the SAP, AG (SAP) system in 2003 of 34.7%, 28.4%, and 18.8%, respectively. Parts with no issues or receipts since the implementation of SAP in 2003 totaled $6.5 million (i.e., $3.3 million for Met-Ed, $3.2 million for Penelec, and $8,670 for Penn Power). These amounts represented slow moving or inactive inventory requiring periodic review to determine if the inventory was obsolete (i.e., non-emergency stock) and should be sold for scrap. BWG suggested that the FE-PA Companies review the materials for which there have been no receipts or issues since the implementation of SAP in 2003 and dispose of obsolete and non-emergency stock. FirstEnergy estimated that the total value of both its obsolete and non-emergency stock was approximately $300,000. The disposal of both obsolete and non-emergency stock would have resulted in associated annual carrying cost savings of approximately $30,000.

<u>Follow-up Finding and Conclusion No. IX-1</u> – The FE-PA Companies have improved inventory turnover rates and reduced total inventory levels.

FirstEnergy has attempted to increase inventory turnover levels to 3.0 for items it considers as part of working inventory (i.e., general distribution materials and supplies, distribution transformers, network and underground equipment, and meter equipment) and has achieved some improvement. The actual working inventory turnover levels experienced by the FE-PA Companies for 2006 through 2009 are shown in Exhibit IX-1. Met-Ed and Penelec have achieved sizeable improvements in their inventory turnover rates, while Penn Power's turns have remained about the same which are above the improved levels of Met-Ed and Penelec. The FE-PA Companies achieved the improved turnover rates by reducing their year-end working inventory levels and total year-end inventories during the period 2006 through 2009 as shown in Exhibits IX-2 and IX-3. In part, these inventory reductions were accomplished by FirstEnergy annually reviewing inventory for potentially obsolete items.

Exhibit IX-1
FE-PA Companies
Working Inventory Turnover Levels
2006 – 2009

Company	2006	2007	2008	2009
Met-Ed	1.7	2.7	2.2	2.4
Penelec	1.2	1.5	1.9	2.2
Penn Power	2.7	3.5	4.0	2.7
Total PA	**1.5**	**2.1**	**2.1**	**2.3**

Source: February 2010 Implementation Plan

Exhibit IX-2
FE-PA Companies
Year-End Working Inventory Levels
2006 – 2009

Company	12/31/06	12/31/07	12/31/08	12/31/09	Total Reduction 2006-2009	
Met-Ed	$9,786,304	$7,784,863	$6,694,977	$6,492,086	$3,294,218	33.7%
Penelec	$12,588,901	$10,790,178	$9,277,407	$8,615,291	$3,973,610	31.6%
Penn Power	$964,242	$721,283	$735,117	$906,478	$57,764	6.0%
Total PA	**$23,339,447**	**$19,296,324**	**$16,707,501**	**$16,013,855**	**$7,325,592**	**31.4%**

Source: February 2010 Implementation Plan

Exhibit IX-3
FE-PA Companies
Total Year-End Inventory Levels
2006 – 2009

Company	12/31/06	12/31/07	12/31/08	12/31/09	Total Reduction 2006-2009	
Met-Ed	$12,503,178	$12,101,591	$10,799,975	$10,663,890	$1,839,288	14.7%
Penelec	$18,837,038	$15,705,265	$14,108,181	$13,428,474	$5,408,564	28.7%
Penn Power	$1,046,199	$722,763	$753,469	$916,281	$129,918	12.4%
Total PA	**$32,386,415**	**$28,529,619**	**$25,661,625**	**$25,008,645**	**$7,377,770**	**22.8%**

Source: February 2010 Implementation Plan

FirstEnergy indicated that inventory which is not considered as working inventory is either transmission-related inventory or substation-related inventory. As of December 31, 2009, the FE-PA Companies had approximately $9 million of transmission related and substation related inventory ($25,008,645-$16,013,855=$8,994,790). The turnover level for this inventory has been less than 1.0 turns. Inventory turnover for total inventory has been approximately 1.1 turns. Based on its efforts and experience gained during the years 2006 to 2009, FirstEnergy believes that it would be very difficult to achieve an inventory turnover rate of 3.0 for its working inventory because slow moving spare parts are included along with the active inventory items.

FirstEnergy estimates that 58% of the FE-PA Companies' working inventory, or approximately $9.3 million, is slow moving (spare parts) inventory. The remainder of the working inventory is actively managed inventory. FirstEnergy estimates that $2.0 - $2.5 million of the $9.3 million in slow moving inventory represents excess usable parts on hand. FirstEnergy plans to reduce excess usable parts on hand by not replenishing the excess portion of the inventory once it is used. This is a reasonable approach because disposing of such inventory now would expose the FE-PA Companies to the risk of having to purchase spare parts when needed in the future at higher prices and possibly extending outages. When work projects (i.e., capital improvements, etc.) slow down, as occurred during the recent economic downturn, inventory levels can be lowered, but the Company then risks stock outs if normal activity levels swiftly return. Also, a major event (e.g., a heat wave or an ice storm) could put the Company at risk of not having the necessary parts on hand, meaning a normal four hour restoration could take days to complete.

FirstEnergy is comfortable with the inventory reductions achieved, but feels that any further decrease would put the FE-PA Companies at risk of an inventory stock out (i.e., the inability to meet a demand due to lack of inventory). FirstEnergy indicated that the total materials and supplies inventory was approximately 1% of rate base for the FE-PA Companies as of December 31, 2009. Since the excess usable parts on hand represent approximately 10% of total inventory, the Audit Staff estimates that these parts represent only about 0.1% of rate base, or an immaterial amount.

The FE-PA Companies annually review inventory levels for potentially obsolete materials. A report on excess stock is generated by Supply Chain in order to search for

old excess inventory. Spare inventory items are retained, but if an item is slow moving and the Company is not sure why it is still in inventory, then it becomes a candidate for being designated as obsolete. The write-offs resulting from the annual reviews conducted during 2006 through 2009 are shown in Exhibit IX-4.

Exhibit IX-4
FE-PA Companies
Obsolete Inventory Write-offs
2006 – 2009

	2006	2007	2008	2009	Total 2006-2009
Combined FE-PA Companies	$66,775	$151,170	$71,907	$21,763	$311,615

Source: February 2010 Implementation Plan

FirstEnergy did not establish an incentive goal based on maintaining improved inventory turnover rates as suggested by BWG. Instead, the Company bases its incentive goal on inventory levels. The FE-PA Companies' inventory goals, for 2007 through 2010 are shown in Exhibit IX-5.

Exhibit IX-5
FE-PA Companies
Inventory Level Incentive Goals ($Millions)
2007 – 2010

Company	2007	2008	2009	2010
Met-Ed	$11.4	$10.9	$10.7	$10.7
Penelec	$17.0	$14.5	$14.2	$14.2
Penn Power*	$14.6	$13.8	$12.8	$38.8

* Penn Power inventory was included in the inventory level incentive goals for Ohio Edison-Penn Power in 2007 – 2009, and in the overall inventory level incentive goal for the Western Distribution Center (Ohio Edison-Penn Power, Cleveland Electric Illuminating, and Toledo Edison) for 2010.
Source: Data Request No. SS-9

In regards to storerooms where the annual issues are less than the year-end inventory balance (i.e., inventory turnover is less than 1.0), the General Manager, Energy Delivery Warehousing & Logistics indicated that these line shop storerooms probably include substation inventory. For example, the Indiana Storeroom had an ending inventory balance of $317,095 at December 31, 2009, while annual issues were just $246,922. FirstEnergy indicated that the working inventory at this location might be only $50,000 to $70,000. FirstEnergy indicated that it aggressively targeted a reduction in line shop storeroom inventory to increase the inventory turnover rate.

Inventory should be managed to achieve an acceptable inventory turnover rate while minimizing the risk of stock outs that would adversely affect service levels. Considering that transformers are included in the working inventory for the FE-PA

Companies, the working inventory turnover rates at December 31, 2009 appear to be reasonable. As shown in Exhibit IX-3, the combined total inventory reduction for the FE-PA Companies was approximately $7.4 million (i.e., $1,839,000 for Met-Ed, $5,409,000 for Penelec, and $130,000 for Penn Power) from 2006 to 2009. Assuming a conservative average annual carrying cost of approximately 10%, the FE-PA Companies combined inventory reduction from 2006 to 2009 has resulted in an associated reduction in annual inventory carrying costs of approximately $738,000 (i.e., $184,000 for Met-Ed, $541,000 for Penelec, and $13,000 for Penn Power).

Staff's Follow-up Recommendation – **None.**

Prior Recommendation – FirstEnergy should develop and implement formal access control procedures that include a formal consolidated Access Authorization Form. Security and access control review should include an examination and verification of the initial access authorized for selected users.

Prior Situation – BWG concluded that FirstEnergy's access control processes and procedures were not adequate. FirstEnergy did not have a formal process or a formal Access Authorization Form to administer the critical function of access control over their approximately 40 applications. Virtual Private Network (VPN) and Network Access Agreements had been developed to address these areas but there were other critical systems and applications such as software from SAP that were without a formal process for documenting access. Moreover, FirstEnergy had not deployed an automated tool for security monitoring and analysis of access control within its Information Technology (IT) enterprise. FirstEnergy's IT Department was performing security analysis manually.

Follow-up Finding and Conclusion No. IX-2 – **FirstEnergy has developed and implemented formal access control procedures which include an examination and verification of the initial access authorized for selected users.**

FirstEnergy uses Active Directory (AD) to enforce access control policies on employees that use IT infrastructure. AD was initially implemented in August 2001. AD is comprised of user and service accounts, machine accounts, printers and security groups. Beginning in early 2009, to acquire access for a user, a request must be submitted to the IT service desk which creates a ticket for the Central Security Administration (CSA) group who in turn create a user account in AD. The entire provisioning process is documented within FirstEnergy's Lotus Notes system and is updated when a change to the process occurs. The CSA group requires the SAP identification and application owners' approval before they can grant user access.

Beginning in 2008, critical and sensitive systems and critical applications, such as SAP, had a formal process for documenting access which is documented and available for periodic reviews for internal and external auditors. Access control procedures are crucial when dealing with IT applications, especially those as comprehensive as SAP. Also, in 2008, security monitoring and analysis of such access

controls were automated. Moreover, annual security analysis is performed to review processes for documenting access from initial user access to account termination and all changes in between.

Critical Infrastructure Protection (CIP) reviews are performed on a quarterly basis and CIP Access Request Database (CARD) reviews are performed annually. The CARD reviews include asset approver identification and verification, granting and revoking access, and regular review of asset procedures which are performed manually. In order to automate the CARD review process, FirstEnergy is committed to implementing Agiliance RiskVision (RiskVision) in January 2011 with configuration, testing and preparations to be performed prior to that date. RiskVision is an enterprise Governance, Risk and Compliance (GRC) software package that will be utilized for compliance purposes for FirstEnergy's CIP program. RiskVision can monitor CIP compliance status of assets, automate periodic review requirements, and report on the compliance status of the business units.

Staff's Follow-up Recommendation – **None.**

Prior Recommendation – FirstEnergy should improve its security awareness and training programs to include computer based training (CBT) or other mandatory formal classroom training for IT and departmental personnel. A refresher course should be conducted annually.

Prior Situation – Of the 654 IT Department employees, approximately 269 employees, or less than 50% of the IT staff, completed training activities/courses/conferences in 2005. FirstEnergy was conducting security awareness training every two years in the form of posters, broadcast e-mails, and newsletters. However, FirstEnergy was not regularly conducting any formal classroom or CBT security awareness training, except for small groups of IT personnel.

Follow-up Finding and Conclusion No. IX-3 – **FirstEnergy has implemented a program to educate its employees regarding IT security issues via computer based training, but is not ensuring that employees complete this training annually.**

In 2007, FirstEnergy partnered with a consultant, Global Learning Systems, to implement CBT. CBT was implemented in June 2007 and cost FirstEnergy approximately $80,000 to implement across all of its subsidiaries. FirstEnergy uses a software application called the "Learning Management Solution" to administer, document, track and report on the CBT program, including:

- Number of employees that took the test
- Number of employees that completed the test
- Completion percentage, etc.

FirstEnergy management stated that refresher courses are updated and made available annually for all employees that have access to cyber assets. The process for delivering the training is as follows:

- An initial email is sent informing the individual of the mandatory training, along with a deadline date.
- A reminder email is sent after one week to individuals that have not completed the training.
- An email is sent after two weeks to managers/supervisors containing a list of individuals that have not completed the training.
- An email is sent from the Director of Corporate Security to the individual directors of any personnel that have not completed the training after four weeks.

The training is provided through the FirstEnergy portal to all employees and contractors who have access to any FirstEnergy cyber assets. This allows all individuals access to the training on a continuous basis. It also acts as a reference should they have any questions concerning the training or cyber security.

However, summary statistical data that was provided by the FE-PA Companies shows that not all employees are completing this annual training. See Exhibit IX-6 summary of CBT training statistics. Less than 80% of all FE-PA operating company employees with access to cyber assets completed cyber security training from 2007 to 2009.

Refresher training on cyber security should be conducted annually in order to keep the workforce well educated about security threats and vulnerabilities that cyber assets are exposed to and any changes in policies and procedures. FirstEnergy did not provide any particular reason as to why its employees that have access to cyber assets did not complete CBT training from 2007 to 2009. Moreover, the Audit Staff is not certain whether FirstEnergy's method of tracking the CBT statistics is appropriate. In particular, when reviewing the data in Exhibit IX-6 it is not clear whether the 16% of Met-Ed employees that did not complete CBT related to security awareness and procedures in 2007 were a part of the 79% that completed the similar training in 2008 or similarly in 2009 and so on. FirstEnergy should strive to track the number of employees that did not complete CBT, the reason for not doing so and expedite the training of these employees in future years. By not maintaining and reporting this information, there could be a possibility that employees which have access to cyber assets never receive CBT related to security awareness and procedures and are not identified; even if the training data seems to indicate most employees have received training and periodic update/refresher training.

Information technology has progressed markedly in recent years and with this advancement in technology the security risks to the cyber infrastructure have also increased considerably. It is imperative for companies, especially one such as an electric distribution utility that maintains thousands of confidential customer records, to be aware of the potential dangers of cyber security threats and vulnerabilities. It is crucial for the workforce to know and learn how FirstEnergy protects its cyber assets

Exhibit IX-6
FE-PA Companies
Percentage of Employees that Completed Computer Based Training
Related to Security Awareness and Procedures
2007-2009

Met-Ed			
Year	Number of Employees With Access to Cyber Assets	Number of Employees Completing CBT	Percentage of Employees Completing CBT
2007	383	322	84%
2008	494	390	79%
2009	534	410	77%
Penelec			
Year	Number of Employees With Access to Cyber Assets	Number of Employees Completing CBT	Percentage of Employees Completing CBT
2007	727	520	72%
2008	782	474	61%
2009	970	610	63%
Penn Power			
Year	Number of Employees With Access to Cyber Assets	Number of Employees Completing CBT	Percentage of Employees Completing CBT
2007	83	75	90%
2008	92	68	74%
2009	124	93	75%
FE-PA Companies			
Year	Number of Employees With Access to Cyber Assets	Number of Employees Completing CBT	Percentage of Employees Completing CBT
2007	1,193	917	77%
2008	1,368	932	68%
2009	1,628	1,113	68%

Source: Response to Data Request SS-5

and what they can do to help make the cyber environment safer. Refresher training helps employees be proactive and adopt good cyber security habits.

<u>Staff's Follow-up Recommendation</u> – Ensure that all employees that have access to cyber assets complete required annual training related to security awareness and procedures by maintaining appropriate CBT tracking records.

X. HUMAN RESOURCES

Background – The Stratified Management and Operations Audit of Metropolitan Edison Company (Met-Ed), Pennsylvania Electric Company (Penelec), and Pennsylvania Power Company (Penn Power) (collectively referred to as the FirstEnergy Pennsylvania Companies or FE-PA Companies), conducted by the consulting firm Barrington-Wellesley Group, Inc. (BWG or Consultant), released by the Pennsylvania Public Utility Commission (PUC or Commission) on March 1, 2007, at D-05MGT002, D-05MGT003 and D-05MGT004, contained eight recommendations in the Human Resources chapter. BWG rated this functional area as needing minor improvement. In this chapter, four prior recommendations and prior situations are reviewed and four follow-up findings and four recommendations are presented.

Prior Recommendation – Examine employee staffing levels at all FirstEnergy Pennsylvania operating companies in order to ensure that staffing levels for all employee groups are appropriate.

Prior Situation – FirstEnergy Corp. (FirstEnergy) employed 13,442 employees at the end of 2005, compared to over 15,000 in 2000 (a 10% decrease in five years) while staffing levels for the FE-PA Companies increased by approximately 8%. Despite the increase in staffing levels, BWG was concerned that the FE-PA Companies may have been understaffed. The ratio of union to non-union employees at all three FE-PA Companies was less than 3:1 which indicated that the increase likely occurred in the non-union ranks. BWG also found that many of FirstEnergy's spans of control ratios were 1:4 or less, which was outside the generally accepted sound business practice range of 1:5 to 1:7.

The FE-PA Companies experienced a substantial loss of employees from 2001 to 2005 primarily through retirements. Approximately 67% of personnel that left FirstEnergy from 2000 through 2005 retired, resignations accounted for approximately 16% and terminations and severances accounted for another 16% of departures. For the FE-PA Companies, the ratio of customers to employees increased by almost 20% (i.e., 80.3 to 94.6) from 2000 to 2005. FirstEnergy had employed a substantial number of contract workers in 2005. Thus the Consultant recommended that any examination of staffing levels include a review of contractor staffing.

Follow-up Finding and Conclusion No. X-1 – **FirstEnergy examined employee staffing levels at the FE-PA Companies, but analyses of contractor staffing levels and spans of control were not performed.**

In 2007, FirstEnergy engaged a consultant to perform a Workload and Manpower Planning Analysis. One of the recommendations resulting from this analysis was to track contractor productivity. FirstEnergy strives to ensure contractor productivity, performance and conformance with the contract provisions through oversight and monitoring by the project manager throughout the contract period. Amounts paid to contractors by the FE-PA Companies from 2007 to 2009 are shown in Exhibit X-1. The

FE-PA Companies were unable to identify the number of external contractors that were utilized from 2007 through 2009. From 2007 to 2009, the amounts paid to contractors decreased for Met-Ed and Penn Power but increased slightly for Penelec.

Exhibit X-1
FE-PA Companies
Amounts paid to Contractors ($ millions)
2007 – 2009

	2007	2008	2009
	$	$	$
Met-Ed	47.4	37.7	26.4
Penelec	32.3	46.5	35.0
Penn Power	7.9	19.5	5.1

Source: Data Request HR-21

An employee span of control analysis should be performed on an annual basis in order to limit the instances of spans of control outside the 1:5 to 1:7 range. The appropriate span of control ratio depends on the type of work involved, but a span of 1:8 or more usually indicates that a manager or supervisor is responsible for too many employees, while a ratio of 1:4 or less usually indicates that there are more managers and supervisors than necessary. The Workload and Manpower Planning Analysis performed in 2007 did not include a span of control analysis. Exhibits X-2, X-3 and X-4 show the number of management and non-management employees at each of the FE-PA Companies during 2007, 2008 and 2009. The non-management counts in the following exhibits mostly include union employees.

Exhibit X-2
Metropolitan Edison Company
Average Span of Control Ratios
2007 – 2009

	2007	2008	2009
Management	89	92	81
Non-Management	619	631	577
Average Span of Control Ratio	1:6.95	1:6.85	1:7.12

Source: Data Request HR-17

Exhibit X-3
Pennsylvania Electric Company
Average Span of Control Ratios
2007 – 2009

	2007	2008	2009
Management	106	113	102
Non-Management	831	850	775
Average Span of Control Ratio	1:7.84	1:7.52	1:7.60

Source: Data Request HR-17

Exhibit X-4
Pennsylvania Power Company
Average Span of Control Ratios
2007 – 2009

	2007	2008	2009
Management	21	22	21
Non-Management	196	192	173
Average Span of Control Ratio	1:9.33	1:8.73	1:8.24

Source: Data Request HR-17

As evident from Exhibits X-3 and Exhibit X-4, the average span of control ratios for Penelec's and Penn Power's employees have consistently been over the 1:7 range. There are no steadfast rules in determining proper management to staff span of control ratios but there should be some guidelines that can assist in establishing these ratios. A span of control analysis would help the FE-PA Companies efficiently assess and evaluate each cost center or department and help create benchmarks to gauge and define a model ratio range that works best with the FE-PA Companies' business needs. Each instance of spans of control that occur outside of model ratio range (e.g., 1:5 to 1:7) should be periodically reviewed and a justification provided. The ultimate goal of the model should be to maximize efficiency in employee management. Creating a model and varying it to reach the most efficient and effective management to staff ratio will provide valuable metrics and a framework needed to reach that goal.

Moreover, as part of its Project Management and Work Management capabilities, FirstEnergy should strive to track contractor time by type of job and use this information within Manpower Planning to better assess the cost effectiveness of performing work internally versus using contractors.

Staff's Follow-up Recommendation – **Perform a review of contractor staffing levels and conduct an employee span of control analysis by department on an annual basis striving to limit the number of span of control ratios outside the range of 1:5 – 1:7.**

Prior Recommendation – Examine the level of overtime being paid as it relates to ensuring adequate staffing levels.

Prior Situation – BWG found that the FE-PA Companies' overtime had increased from 2000 levels and was relatively high compared to other utilities. Overtime as a percentage of straight time hours for the FE-PA Companies had fluctuated during the period 2000-2005, increasing by almost 50% between 2001 and 2002, decreasing by about a third in 2004 and increasing again in 2005 by about 40%. Overtime at the FE-PA Companies had been over 15% in two of the last four years reviewed during the audit.

BWG estimated that the FE-PA Companies should be able to achieve approximately $3.7 million in annual savings. This was based on the following assumptions:

- An average pay rate of $30 per hour and that the FE-PA Companies pay time and a half for overtime hours; BWG calculated that the 518,782 hours of overtime in 2005 cost the Company approximately $23.3 million
  - (518,782 hours x $30 per hour x 1.5 = $23,345,190)
- BWG calculated that reducing overtime to 10% would save FE-PA Companies approximately $7.4 million.
  - 3,545,551 straight time hours x 10% = 354,555 overtime hours.
  - 354,555 hours x $30 per hour x 1.5 = $15,954,975.
  - $23,345,190 - $15,954,975 = $7,390,215.
- Reducing overtime would in many cases require the hiring of additional staff. Thus, the actual savings would be offset by the cost of hiring additional personnel. Consequently, BWG concluded that the FE-PA Companies would be able to achieve approximately half of the savings, or approximately $3.7 million.

Follow-up Finding and Conclusion No. X-2 – **An analysis of overtime hours for the FE-PA Companies line worker groups has not been performed.**

In 2007, FirstEnergy engaged an outside consultant to perform a Workload and Manpower Planning Analysis. In 2008, a staffing model was implemented for use by FirstEnergy's Forecasting and Planning group. The new staffing mode is similar to the one proposed by FirstEnergy's outside consultant in that it was designed to help management gain a logical outlook on the past and future nature of the workload. The model looks at FirstEnergy's historical workload, its current workload and the anticipated future workload. The model also takes into account the historical and current manpower resources.

The number of union and non-union employees at each of the FE-PA Companies during 2007 to 2009 is summarized in Exhibit X-5. From 2007 to 2008 staffing levels increased at the FE-PA Companies. The majority of this increase was in the non-union group which, for the most part, includes supervisors and managers. Union staffing, which would include line workers, increased slightly from 2007 to 2008. In 2009 an early retirement program was offered resulting in a drop in the number of employees at each of the FE-PA Companies.

Exhibit X-5
FE-PA Companies
Number of Union and Non-Union Employees
2007 – 2009

	2007	2008	2009
Met-Ed			
Union	535	536	509
Non-Union	173	187	149
Totals	**708**	**723**	**658**
Penelec			
Union	638	644	616
Non-Union	299	319	261
Totals	**937**	**963**	**877**
Penn Power			
Union	166	164	147
Non-Union	51	50	47
Totals	**217**	**214**	**194**

Source: Data Request HR-11

The FE-PA Companies' number of line worker straight time hours, overtime hours, and the percentage of overtime hours to straight time hours from 2006 through 2009 are shown on Exhibits X-6 through X-8. It should be noted that the straight time hours in the exhibits do not include any non-work hours such as vacation, holidays, sick time, etc. At each of the FE-PA Companies, overtime as a percentage of straight time increased consistently from 2006 through 2008 but dropped in 2009. The 2009 decrease in overtime was mainly attributed to 2009 being a relatively better year in terms of reliability performance. The FE-PA Companies did not experience as many major storms as they did in previous years and there weren't as many reliability issues which led to less usage of line workers and hence a reduction in overtime hours during 2009.

Exhibit X-6
Metropolitan Edison Company
Line Worker Straight Time and Overtime Hours
2006 – 2009

	2006	2007	2008	2009
Straight time hours	349,345	354,260	368,436	363,210
Overtime hours	106,035	126,678	133,103	108,318
Percentage	30.4%	35.8%	36.1%	29.8%

Source: Data Request HR-34

Exhibit X-7
Pennsylvania Electric Company
Line Worker Straight Time and Overtime Hours
2006 – 2009

	2006	2007	2008	2009
Straight time hours	537,796	578,671	600,554	540,963
Overtime hours	128,887	148,304	171,515	119,062
Percentage	24%	25.6%	28.6%	22%

Source: Data Request HR-34

Exhibit X-8
Pennsylvania Power Company
Line Worker Straight Time and Overtime Hours
2006 – 2009

	2006	2007	2008	2009
Straight time hours	127,963	147,450	161,336	163,267
Overtime hours	35,471	42,338	57,137	33,366
Percentage	27.7%	28.7%	35.4%	20.4%

Source: Data Request HR-34

The Workload and Manpower Planning Analysis performed by the consultant in 2007 did not include an analysis of overtime hours. Although, the FE-PA Companies do track and complete an in-depth overtime analysis on a weekly, monthly, and annual basis; it appears to the Audit Staff that this information is generally not used to determine if the levels of overtime are reasonable. The FE-PA Companies stated that they use this information for developing annual overtime budgets and each FE-PA Company is accountable to manage that budget. Additionally, the FE-PA Companies indicated that they have historically budgeted for overtime levels to be around 15%-18%

of straight time hours; however, as shown in Exhibits X-6 through X-8, the FE-PA Companies have consistently experienced overtime at levels significantly above this amount. Straight time hours and overtime hours for all three FE-PA Companies combined during 2006 through 2009 are summarized in Exhibit X-9.

Exhibit X-9
FE-PA Companies
Line Worker Straight Time and Overtime Hours
2006 – 2009

	2006	2007	2008	2009
Straight time hours	1,015,104	1,080,381	1,130,326	1,067,440
Overtime hours	270,393	317,320	361,755	259,746
Percentage	26.6%	29.4%	32%	24.3%

Source: Data Request HR-34

The FE-PA Companies overtime budget levels of 15%-18% of straight time hours are in the range budgeted by other utilities in the industry; however, as shown in Exhibits X-6 though X-9, they have been consistently exceeding these budgeted levels by significant amounts. The FE-PA Companies overtime is comprised of planned and unplanned work. Unplanned overtime includes Company-specific outage restorations as well as affiliated and unaffiliated mutual assistance support. Nevertheless, high amounts of overtime by particular line workers can lead to safety issues as excessively tired workers tends to increase the possibility of mistakes and injuries. Therefore, mutual assistance efforts should be included in overtime planning and ongoing management practices.

Reducing overtime levels should result in reduced operating costs, improvements in operational effectiveness and reductions in injuries. FirstEnergy pays time and a half for overtime hours and based on an average straight time rate of $30 per hour for line workers, 259,746 hours of overtime in 2009 cost the FE-PA Companies approximately $11.7 million (259,746 x $30 x 1.5 = $11,688,570). If the FE-PA Companies reduced the overtime for line workers to 15%, it would save the FE-PA Companies approximately $4.5 million (1,067,440 x 15% x $30 x 1.5 = $7,205,220 and $11,688,570 - $7,205,220 = $4,483,350). Placing linemen on different shifts and/or hiring additional line workers to offset the overtime could reduce the savings by approximately 50% hence the FE-PA Companies would be able to net a savings of approximately $2.2 million a year with Met-Ed realizing a majority of the annual savings of approximately $1.2 million (or approximately 55% of overall savings), Penelec realizing a savings of approximately $850,000 and Penn Power realizing a savings of approximately $150,000.

Staff's Follow-up Recommendation – Conduct an analysis of overtime hours for each FE-PA Company and strive to maintain overtime levels at less than 15% of straight time hours.

Prior Recommendation – Develop a comprehensive work management/manpower planning program and produce a staffing plan that addresses current needs and future staffing challenges.

Prior Situation –FirstEnergy did not have a comprehensive work management and manpower planning system in place. Managers had performance systems available that were useful in projecting future workload but most managers used these indicators only to measure and monitor day-to-day business and not for long range planning. BWG concluded that none of FirstEnergy's systems truly represented a comprehensive work management and manpower planning system.

Employees were time reporting for accounting purposes, but very little of the data was used for manpower planning. FirstEnergy did not utilize any systems that covered management employees in "white collar work" functions hence there was little or no data available to determine those staffing needs. Staffing levels were arbitrarily determined by top management based on a review of historical levels. Changes to staffing levels were usually granted based on qualitative criteria, rather than an objective analysis.

Therefore, BWG recommended that FirstEnergy develop a work management/manpower planning program that includes: a comprehensive time reporting system for each department, an appropriate work management system in each department, a comprehensive manpower planning process, and a staffing plan that addresses the future challenges presented by the aging workforce.

Follow-up Finding and Conclusion No. X-3 –**A Work Management Initiative Group was developed to plan, schedule, and manage work across FirstEnergy's system and determine current and future staffing levels; however, FirstEnergy is not tracking budgeted historical staffing levels.**

The outside consultant that performed the Workload and Manpower Planning Analysis for FirstEnergy in 2007 recommended a staffing database model approach, but FirstEnergy did not implement the model as suggested because it did not easily integrate with the corporation's accounting structure and was not viewed as a practical approach. As an alternative, during the third quarter of 2007, FirstEnergy developed the Work Management Initiative Group that uses a staffing model similar to the one that was suggested by the consultant. FirstEnergy refined the staffing model approach to include forecasting and planning workload and resource requirements. The staffing model used by the Work Management Initiative Group is designed to help management look at historical workload and anticipated future workload to determine future staffing needs.

Each FE-PA Company has a Forecasting and Planning Group that looks at known and anticipated work, and develops an annual staffing plan based on the anticipated work levels. The annual work plan consists of comparing historical workload to anticipated workload. It also includes looking at historical productive hours, the

number of hours that will be required to complete the future work and establishes future staffing needs. In addition to utilizing SAP AG (SAP) to record time reporting information, FirstEnergy uses a Work Management System called the Customer Request Work Scheduling System (CREWS) to capture timesheet information for field employees which is transferred to SAP on a daily basis.

The FE-PA Companies do not maintain historical budgeted staffing levels for prior years, hence the Audit Staff could not evaluate gaps between budget and actual staffing levels. FirstEnergy management indicated that its approach to forecast and plan for staffing is based on known and anticipated work and not actual versus budgeted staffing levels. It appears that the FE-PA Companies are moving in the right direction by using historical workload to determine future staffing needs but that the FE-PA Companies would gain more benefits if they tracked budgeted staffing levels and compared them to the actual levels and analyzed any trends that have developed. It would help the FE-PA Companies determine past gaps in staffing, problems that occurred (including problems in timely filling certain positions), and what adjustments can be made to address these issues in the future. In particular the tracking and trending of budgeted and actual staffing levels would be useful in addressing the line worker staffing level concerns discussed in Follow-up Finding and Conclusion No. VI-5, and the engineering resource issues discussed in Follow-up Finding and Conclusion No. VII-1.

The forecasting and planning process is the foundation for strategic staffing because it identifies and addresses current and future challenges of acquiring and retaining talent necessary to execute the business strategy. Forecasting provides a view of known and anticipated work and helps compute the amount of resources that will be required to accomplish the work. Forecasting and planning for workload and resources provides visibility into the future to make informed staffing decisions and helps management determine staffing levels on an objective analysis.

Staff's Follow-up Recommendation – **Develop a process to track and trend historical budgeted staffing levels and compare them to actual staffing levels while continuing to enhance the Forecasting and Planning Process.**

Prior Recommendation – Develop a more consistent and effective approach to safety training.

Prior Situation – BWG found that FirstEnergy's safety training had some minor deficiencies. Due to inconsistency in the delivery of services from one location to the next, all employees may not have received a handbook on the first day of employment. Although a copy of the handbook was available on FirstEnergy's internet portal, many skilled and craft workers did not have access to computers, and therefore, did not have easy access to the manual. The Human Resources (HR) Department required each location to provide safety training to its employees at least once a week; however, the training was not always consistently administered due to varying schedules.

Therefore, BWG suggested that FirstEnergy:

- Provide each employee with an "Accident Prevention Handbook" on a consistent basis on the first day of employment.
- Address areas where there is confusion with regard to administration of policy.
- Provide safety training to all employees on a consistent basis and schedule.

<u>Follow-up Finding and Conclusion No. X-4</u> –FirstEnergy is taking a proactive approach to safety training, and is consistently and effectively providing safety training to all employees; nevertheless, the FE-PA Companies have not consistently met their Occupational Safety and Health Administration (OSHA) Incidence Rate goals.

A copy of the revised Accident Prevention Handbook was provided to all employees of the FE-PA Companies in 2010. Also, all new employees receive a copy of the Accident Prevention Handbook on the first day of employment. A safety message, developed by FirstEnergy Service Company's Human Resources Department, is provided to employees daily. The Accident Prevention Handbook is reviewed each Tuesday and Thursday, with detailed discussion taking place. Instructors are used for this training. Employees also complete computer-based training (CBT) for such subjects as electrical safety, pole top safety, office related modules, etc. CBT, taken in the morning, takes two hours to complete. There are approximately 35-40 topics. All linemen, substation workers, office workers, and field workers (e.g., meter readers) take CBT.

Training related to the Accident Prevention Handbook and CBT is tracked for each employee by the SAP system. An employee must complete certain courses specific to their position. Supervisors must make sure that each employee completes their required training. SAP queries can be made by a supervisor to see if all mandatory training has been completed by each employee.

In order to measure the success of FirstEnergy's safety training, the Audit Staff reviewed safety related performance measures for the FE-PA Companies. The OSHA Incidence Rate represents the number of injuries and illnesses per 100 full time workers. The FE-PA Companies' Incidence Rate target, 'stretch goals' and actual results for 2007 through June 30, 2010 are shown in Exhibit X-10; in summary:

- In 2007, all three of the FE-PA Companies met their target goals, but Met-Ed did not meet its stretch goal.
- In 2008 and 2009, Met-Ed and Penn Power did not meet either their target or stretch goals, while Penelec met both its target and stretch goals.
- January through June 2010, none of the EDCs had met either their target or stretch goals.

Exhibit X-10
FE-PA Companies
OSHA Incidence Rate Goals/Actual
2007 – June 30, 2010

Year	Target Goal	Stretch Goal	Met-Ed Actual	Penn Power Actual	Penelec Actual
2007	1.70	1.20	1.51	0.00	1.01
2008	1.62	1.24	3.33	3.68	1.06
2009	1.41	1.12	2.02	1.46	0.93
2010*	1.16	0.97	1.43	1.95	1.57
* Through June 30, 2010					

Source: Data Request No. HR-32, Corporate Safety Reports

The United States Department of Labor, Bureau of Labor Statistics (BLS) tracks Incidence Rates by industry and establishment employment size. Incidence rates show the relative level of injuries and illnesses among different industries, firms, or operations within a single firm. Because a common base and a specific period of time are involved, these rates can help identify both problem areas and progress in preventing work related injuries and illnesses. The OSHA Incidence Rate for the Utilities Industry sector in 2009 was 3.3. In 2009, all three FE-PA Companies' Incidence Rates were below the OSHA Utilities Industry sector average. However, as mentioned above, the FE-PA Companies have not consistently met their own target and stretch Incidence Rate goals.

<u>Staff's Follow-up Recommendation</u> – Strive to consistently achieve Incidence Rate goals by continuing to provide and improve effective safety training for all employees.

XI. CUSTOMER SERVICE

Background - The Stratified Management and Operations Audit of Metropolitan Edison Company (Met-Ed), Pennsylvania Electric Company (Penelec), and Pennsylvania Power Company (Penn Power) (collectively referred to as the FirstEnergy Pennsylvania Companies or FE-PA Companies) conducted by the consulting firm Barrington-Wellesley Group, Inc. (BWG), released by the Pennsylvania Public Utility Commission (PUC or Commission) on March 1, 2007 at D-05MGT002, D-05MGT003 and D-05MGT004, contained ten recommendations in the Customer Service chapter. BWG rated this functional area as needing moderate improvement. In this chapter, five prior recommendations and prior situations are reviewed and five follow-up findings and four recommendations are presented.

Prior Recommendation – Improve customer call center performance in order to achieve the goal set in the Pennsylvania Reliability Settlement Agreement for the year ending December 31, 2005; i.e., answer 80% of customer calls within 30 seconds.

Prior Situation – At its public meeting of November 4, 2004, at Docket Number I-00040102, the Commission approved the Settlement Agreement in which the FE-PA Companies agreed to a set of commitments that were directed toward improving the service reliability of the FE-PA Companies. The FE-PA Companies committed to take appropriate steps to answer 80% of calls to its customer call center within 30 seconds for the year ending December 31, 2005. The FE-PA Companies answered only 64% of customer calls within 30 seconds during 2005. A higher than expected call volume, introduction of an upgrade to the voice response system and longer call durations in order to accommodate a change in call handling procedures contributed to the FE-PA Companies failure to achieve the Settlement Agreement requirement.

Follow-up Finding and Conclusion No. XI-1 – The FE-PA Companies' percentage of calls answered within 30 seconds needs to be improved.

FirstEnergy Corp. (FirstEnergy) uses three call centers to receive customer calls, one which is operated by FirstEnergy and two which are contract operations. The Reading, PA Contact Center operated by FirstEnergy handles customer service related calls such as reporting an outage, a request to start or stop service, billing related inquiries, and other general questions related to electric service. The other call centers, one operated by Out-Sourcing, Inc. (OSI) and the other operated by National Collection Office (NCO) after its merger with OSI, handle the incoming credit related calls for FirstEnergy's active Pennsylvania customers.

A comparison of the percentage of calls answered within 30 seconds by the FE-PA Companies and a panel of other Pennsylvania electric distribution companies (EDCs) for the years 2005 through 2009 is summarized on Exhibit XI-1. As shown in Exhibit XI-1, although the FE-PA Companies' percentage of calls answered within 30 seconds increased from 64% in 2005 to 80% in 2006, it subsequently declined to 78% in 2009. The percentage of calls answered within 30 seconds for the panel of other

Pennsylvania electric distribution companies (EDCs) increased from an average of 78% in 2005 to 80% in 2006, then declined to 76% in 2008 and 2009. However, the panel average (excluding Allegheny Power) in 2008 and 2009 was 81% and 80%, respectively.

Exhibit XI-1
FE-PA Companies Compared to a Panel of Pennsylvania EDCs
Percentage of Calls Answered Within 30 Seconds
2005-2009

Company	2005	2006	2007	2008	2009
UGI-Electric	71%	72%	80%	87%	80%
Duquesne Light	80%	81%	77%	80%	78%
PECO	76%	82%	79%	80%	81%
PPL	80%	79%	83%	76%	81%
Allegheny Power	83%	85%	88%	58%	60%
Panel Average	78%	80%	81%	76%	76%
FE-PA Companies*	64%	80%	79%	81%	78%

* Met-Ed, Penelec, and Penn Power use the same call center and are combined under FE-PA Companies.
Source: PUC Bureau of Consumer Services 2007-2009 Customer Service Performance Reports

The fluctuation in the percentage of calls answered within 30 seconds is primarily due to FirstEnergy's attempts to balance call center costs with customer satisfaction. The Reading Contact Center handles customer service related calls (i.e., reporting outages, starting or stopping service, billing inquiries, etc.). Out-Sourcing Solutions (OSI) and National Collection Office (NCO) have also been used for credit related calls. OSI and NCO have consistently lower performance compared to the Reading Contact Center. FirstEnergy stated that the diminished performance is likely due to economic conditions because these two companies handle FirstEnergy's credit related calls. The number one area of growth in call volume is in the credit area. The percentage of customer calls answered within 30 seconds by each contact center for 2006 through 2009 is shown in Exhibit XI-2. Although the Reading Contact Center answered 80 percent of calls within 30 seconds in 2009, OSI and NCO achieved just 72%, resulting in a combined rate of 78%, which is below the 80% level agreed to in the Settlement Agreement.

Since 2003, FirstEnergy has invested $10 million in technology at the Reading Contact Center in the form of an Interactive Voice Response (IVR) system, call routing, virtual hold, and customer service representative training. These initiatives have allowed the FE-PA Companies to increase the percentage of calls answered within 30 seconds from 76% in 2004 to 78% in 2009. FirstEnergy states that the IVR system has increased customer satisfaction by enabling more self service utilization. FirstEnergy states that 40% of calls are virtual (i.e., without connection to a CSR), using the IVR system or the virtual hold system. Nonetheless, the FE-PA Companies are not achieving the goal of answering 80% of incoming calls within 30 seconds as set in the

Exhibit XI-2
FE-PA Companies
Percentage of Calls Answered Within 30 Seconds by Contact Center
2006-2009

	2006	2007	2008	2009
Reading	87%	82%	86%	80%
OSI/NCO	76%	69%	65%	71%
Combined	85%	79%	81%	78%

Source: Data Request No. CS-1

Settlement Agreement. Performance goals should be set with contracted call centers as well, especially if they are the cause of too many calls not being answered within 30 seconds.

Staff's Follow-up Recommendation – Strive to answer at least 80% of calls within 30 seconds by fully leveraging the technology investments made at the Reading Contact Center.

Prior Recommendation – Reduce the number of residential and small business bills not rendered once every billing period. Steps should include: Develop reports that identify these accounts prior to the bills being mailed to allow the billing representatives to either issue field work orders to obtain meter readings or calculate bills based on estimated meter readings.

Prior Situation – Compared to other Pennsylvania EDCs, the FE-PA Companies did not rank favorably with regard to billing based on the PUC Customer Service Performance Report. The FE-PA Companies generally had a higher percentage of residential and small business bills that were not rendered once every billing period. The percentage of 2004 residential and small business bills not rendered once every billing period for the FE-PA Companies and other Pennsylvania EDCs is shown in Exhibit XI-3.

Exhibit XI-3
FE-PA Companies Compared to a Panel of Pennsylvania EDCs
Percentage of Residential and Small Business Bills
Not Rendered Once Every Billing Period
2004

Company	Residential	Small Business
Duquesne	.00%	.00%
PECO	.00	.00
UGI-Electric	.00	.01
Allegheny Power	.01	.05
PPL	.01	.01
Met-Ed	.02	.07
Penelec	.01	.05
Penn Power	.02	.09

Source: Exhibit XII-3 of January 2007 Stratified Management & Operations Audit

<u>Follow-up Finding and Conclusion No. XI-2</u> – The FE-PA Companies have significantly reduced the percentage of residential and small business bills not rendered once every billing cycle.

The FE-PA Companies should be striving to reduce their number of residential and small business bills not rendered once every billing period to better align with the performance of the other Pennsylvania EDCs. The percentage of residential and small business bills not rendered once every billing period for each of the FE-PA Companies compared to a panel of Pennsylvania EDCs for the years 2005 through 2009 is shown in Exhibits XI-4 and XI-5, respectively.

Exhibit XI-4
FE-PA Companies Compared to a Panel of Pennsylvania EDCs
Percentage of Residential Bills Not
Rendered Once Every Billing Period
2005-2009

Company	2005	2006	2007	2008	2009
Allegheny Power	.01%	.00%	.01%	.00%	.00%
Duquesne Light	.00%	.00%	.00%	.00%	.00%
PECO	.00%	.00%	.01%	.00%	.00%
PPL	.00%	.00%	.00%	.01%	.01%
UGI	.00%	.00%	.01%	.01%	.00%
Panel Average	**.00%**	**.00%**	**.01%**	**.00%**	**.00%**
Met-Ed	.01%	.00%	.00%	.00%	.00%
Penelec	.01%	.00%	.00%	.01%	.00%
Penn Power	.01%	.00%	.01%	.00%	.00%

Source: BCS 2007-2009 Customer Service Performance Reports

Exhibit XI-5
FE-PA Companies Compared to a Panel of Pennsylvania EDCs
Percentage of Small Business Bills Not
Rendered Once Every Billing Period
2005-2009

Company	2005	2006	2007	2008	2009
Allegheny Power	.04%	.01%	.02%	.02%	.01%
Duquesne Light	.00%	.00%	.00%	.00%	.00%
PECO	.00%	.04%	.05%	.03%	.00%
PPL	.03%	.02%	.02%	.03%	.02%
UGI	.00%	.00%	.01%	.01%	.00%
Panel Average	**.01%**	**.01%**	**.02%**	**.02%**	**.01%**
Met-Ed	.02%	.04%	.02%	.01%	.00%
Penelec	.02%	.01%	.01%	.01%	.00%
Penn Power	.03%	.02%	.02%	.01%	.00%

Source: BCS 2007-2009 Customer Service Performance Reports

FirstEnergy has made improvements to reduce the number of residential and small business bills not rendered once every billing period. In 2003, FirstEnergy began using SAP, AG (SAP) software, and ongoing improvements to the SAP systems since that time have helped to reduce the number or residential and small business bills not rendered once every billing period. FirstEnergy has also helped to reduce the number of bills not rendered once every billing period by cross training employees. This has reduced the number of "specialized" employees. It also enables the completion of prioritized tasks first by having more employees able to complete the task. As of 2009, the FE-PA Companies are now in line with the other Pennsylvania EDCs in terms of the number of bills not rendered once every billing period.

Staff's Follow-up Recommendation – None.

Prior Recommendation – Reduce the number of residential meters not read in six and twelve months.

Prior Situation – Compared to other Pennsylvania EDCs, the FE-PA Companies did not rank favorably with regard to timeliness of meter reading based on the PUC 2004 Customer Service Performance Report. The FE-PA Companies generally had a higher percentage of residential meters not read in 6 and 12 months than a panel of Pennsylvania EDCs. The percentage of residential meters not read by the FE-PA Companies and the Pennsylvania EDCs or their customers in 6 and 12 months during 2004 is shown in Exhibit XI-6.

Exhibit XI-6
FE-PA Companies Compared to a Panel of Pennsylvania EDCs
Percentage of Residential Meters Not
Read in Six and Twelve Months
2004

Company	Six Months	Twelve Months
UGI-Electric	.00%	.00%
Duquesne	.00	.00
Allegheny Power	.01	.01
PPL	.01	.00
PECO	.05	.19
Penn Power	.08	.01
Met-Ed	.08	.02
Penelec	.08	.02

Source: January 2007 Stratified Management & Operations Audit

To help reduce the number of FE-PA Companies' meters not read for extended periods, BWG suggested that FirstEnergy develop reports that routinely identify residential meters that have not been read during the appropriate interval and issue field work orders to obtain meter readings.

Follow-up Finding and Conclusion No. XI-3 – The FE-PA Companies do not compare favorably to other Pennsylvania EDCs regarding the percentage of residential meters not read by company or customer within 6 and 12 months.

In 2009, the percentage of residential meters not read by the utilities or the customer in 6 and 12 months for all three FE-PA Companies was significantly higher than the panel average of other Pennsylvania electric distribution companies. The percentage of residential meters not read by the company or the customer in 6 and 12 months for the FE-PA Companies and a panel of other Pennsylvania EDCs, for 2006 through 2009, is shown on Exhibit XI-7. From 2006 to 2009, the percentage of residential meters not read by the company or the customer in 6 months increased for Met-Ed, but remained the same for Penelec and Penn Power. Both Penelec and Penn Power are performing slightly better in 2009 than in 2004, but Met-Ed is performing worse. From 2006 to 2009, the percentage of residential meters not read by the Company or the customer in 12 months remained the same for Met-Ed, Penelec, and Penn Power. Penelec is performing slightly better in 2009 than in 2004, while Met-Ed and Penn Power are performing the same.

The FE-PA Companies have developed reports to identify residential meters not read in six and twelve months. The reports, which are developed monthly, are used to identify meters that need to be addressed. Accounts appearing on the reports may receive a letter, phone call, and/or be scheduled to obtain a meter reading.

Exhibit XI-7
FE-PA Companies Compared to a Panel of Pennsylvania EDCs
Percentage* of Residential Meters Not Read By
Company or Customer in Six and Twelve Months
2006-2009

	6 Months				12 Months			
Company	2006	2007	2008	2009	2006	2007	2008	2009
Allegheny Power	0.01%	0.01%	0.02%	0.01%	0.00%	0.00%	0.00%	0.00%
Duquesne Light	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
PECO	0.07%	0.06%	0.04%	0.03%	0.04%	0.02%	0.01%	0.01%
PPL	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UGI-Electric	0.00%	0.00%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%
Panel Average	0.02%	0.01%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%
FE-PA Companies:								
Met-Ed.	0.07%	0.06%	0.08%	0.10%	0.02%	0.01%	0.02%	0.02%
Penelec	0.06%	0.05%	0.06%	0.06%	0.01%	0.01%	0.01%	0.01%
Penn Power	0.05%	0.03%	0.02%	0.05%	0.01%	0.01%	0.00%	0.01%

* 12 month averages
Source: BCS 2008, 2009 Customer Service Performance Reports

PUC regulations at 52 Pa. Code § 56.12 (4) state that a utility may estimate the bill of a ratepayer if utility personnel are unable to gain access to obtain an actual meter reading, as long as the following apply:

- The utility has undertaken reasonable alternative measures to obtain a meter reading, including, but not limited to, the provision of preaddressed postcards upon which the ratepayer may note the reading or telephone reporting of the reading.
- The utility, at least every 6 months, or every four billing periods for utilities permitted to bill in excess of 1 month, obtains an actual meter reading or ratepayer supplied reading to verify the accuracy of the estimated readings.
- The utility, at least once every 12 months, obtains an actual meter reading to verify the accuracy of the readings, either estimated or ratepayer read. (Emphasis added)

Therefore, the FE-PA Companies are obligated to minimize the number of and percentage of meters not read by the company or the customer in 6 and 12 months to be more in line with the panel of other Pennsylvania EDCs. The FE-PA Companies attribute their residential meters not read by the company or the customer in 6 and 12 months to vacant properties, uncooperative tenants, incomplete customer records, foreclosures, frequent ownership changes of certain properties, unfavorable weather, etc. It is noteworthy that most of the other Pennsylvania EDCs are using more

automatic meter reading technology than the FE-PA Companies. For whatever reasons, the FE-PA Companies have not improved their meter reading frequency sufficiently to be on a level comparable with the other Pennsylvania EDCs. Moreover, the FE-PA Companies are not in compliance with 52 Pa. Code § 56.12 (4) because an actual meter reading for all customer accounts has not been obtained at least once every 12 months in order to verify the accuracy of the estimated or ratepayer supplied reading.

Staff's Follow-up Recommendation – Reduce the number of meters not read in 6 and 12 months to achieve levels comparable to that of the other Pennsylvania EDCs and strive for compliance with Commission regulations.

Prior Recommendation – Develop a consistent revenue protection strategy.

Prior Situation – Revenue Protection Services was the process used by FirstEnergy for the detection and prevention of theft of service and included the investigation of cases of suspected theft of service, theft by deception (fraud) and any other form of unauthorized use of electric service resulting in revenue loss or a potential unsafe condition.

A FirstEnergy internal audit report, dated January 4, 2006, described the revenue protection process as inefficient, fragmented, and lacking in overall management ownership and strategic direction. There was a lack of formal policies and procedures and FirstEnergy inconsistently implemented the process across the Company. The internal audit report also indicated that improvements could be made in the administering of rewards which were paid to employees for their detection of a potential unauthorized use situation, and it was difficult for the company to determine how much First Energy spent to pursue unauthorized use through the existing Revenue Protection process.

Subsequently, in FirstEnergy's Revenue Cycle Process Improvement Initiative - Phase III, the Company's revenue cycle process improvement team recommended implementation of a consistent revenue protection strategy across FirstEnergy. A related recommendation of the team was to pursue a revenue protection strategy with sufficient management ownership and to implement formal policies and procedures consistently across FirstEnergy. The team also recommended that FirstEnergy address control weaknesses in the administration of the reward system; develop a method to identify and track costs incurred in the Revenue Protection process; establish unauthorized use fees that recover 100% of reward and investigation fees; and consider supplementing the internal Revenue Protection sub-process with an outside agency that specializes in this subject area.

BWG suggested that the FE-PA Companies report the findings, recommendations and implementation plan of the Revenue Protection process improvement team to the Commission Staff when approved by senior management.

<u>Follow-up Finding and Conclusion No. XI-4</u> – FirstEnergy has not fully developed or implemented its revenue protection strategy and the systems and processes necessary to improve the Revenue Protection Services.

In 2006, subsequent to the BWG's field work, FirstEnergy conducted an assessment of revenue protection. The recommendations from the assessment were incorporated into a business case, which was approved by FirstEnergy in October 2006. The adopted recommendations were as follows:

1. Develop a central focus and consistency across operating companies.

2. Add two new corporate coordinators to help screen and manage the workload of all states and all companies.

3. Enhance the systems and tools for prioritizing, tracking and reporting Revenue Protection Services (RPS) cases.

4. Evaluate meter tampering technology and vendors to identify Commercial and Industrial losses and issues for all states and all companies.

The actions taken by FirstEnergy to address each of the four major recommendations from the approved business case can be summarized as follows:

<u>Develop a central focus and consistency across operating companies.</u> Implementation began with a pilot program in the fourth quarter of 2006 with an analyst leading the evaluation of the existing process and the baseline state of Revenue Protection Services. Efforts were initiated to identify and define roles, responsibilities, develop a structure for a centralized RPS function, and develop standardized processes and procedures.

<u>Add 2 new corporate coordinators to help screen and manage the workload of all states and all companies.</u> In contrast to the first update to the implementation plan (dated February 29, 2008), which noted that two analysts were hired and had begun work on processes relative to Revenue Protection Services, only one of the two coordinators (an analyst) was hired. The analyst was to develop a database, pilot the screening process, and coordinate the workload assigned to the contractor for whose services FirstEnergy contracted to help in the implementation of the fourth recommendation (see below). However, according to the Director, Revenue Operations, FirstEnergy has not added corporate coordinators to its workforce. The Company believed that standardizing and streamlining operations has added value to the organization whereas the addition of the corporate coordinators would not have added value.

Enhance the systems and tools for prioritizing, tracking and reporting Revenue Protection Services (RPS) cases. System tools for prioritizing, tracking and reporting vendor assigned accounts were developed for the vendor pilot program using an Access database. However, after the pilot program ended, the use of the database was discontinued. The Director, Revenue Operations indicated that the contractor pilot program identified items that Company processes had already identified. It was expected that the pilot program would uncover theft of FirstEnergy's services, but only one finding of theft was identified. Based on this single theft discovery, FirstEnergy decided that use of the contractor was not cost justified.

Evaluate meter tampering technology and vendors to identify Commercial and Industrial losses and issues for all states and all companies. A pilot program to identify and evaluate meter tampering technology via use of an outside vendor was initiated, developed and tested. The project lead monitored the effectiveness of the program and made recommendations for changes as necessary. Although the pilot program ended during March 2009, the FE-PA Companies are conducting field audits to identify meter and billing discrepancies and irregular conditions are being evaluated for the appropriate rebilling or adjustment opportunities.

FirstEnergy admitted that prior to the revenue protection assessment in 2006 processes were highly fractured, decentralized and inconsistent, and that it took steps to make processes more consistent to enhance the Revenue Protection process. FirstEnergy believes that it has evolved towards a less centralized, but still consistent, approach to provide revenue protection that relies less on a dedicated workforce (i.e., the hiring of two corporate coordinators) and more on fully leveraging existing staff and processes. This is consistent with FirstEnergy's revenue protection policies and procedures.

It is the responsibility of all FirstEnergy employees to work together to identify and follow up on suspected cases of tampering, theft of service, fraud, and all potential deceptive acts. FirstEnergy's policies and procedures address how employees should report cases of tampering, theft of service, fraud, and deceptive acts by defining reporting roles, functions and processes relative to Meter Reading, Revenue Operations, and Meter Services, as well as procedures for handling alleged identity theft/fraud.

FirstEnergy expressed an intention to continue to evolve the revenue protection processes in an effort to leverage the greatest benefit from the least level of cost. The Director, Revenue Operations indicated that FirstEnergy sees the deterring of meter tampering as more of a day-to-day issue and that the Company must weigh the costs of any specific solution against the benefits to be derived. FirstEnergy assesses each problem as it arises, mindful of the cost-benefit ratio. Toward that end, the Company indicated that FirstEnergy changed the locking device on meters, upgraded meter locking rings and employed a locking device allowing a bank of meters to be secured, such as in an apartment

building, in an effort to protect revenue and minimize fraudulent activities and follow-up work and costs associated with meter tampering.

However, the Audit Staff was informed that the personnel involved with implementing the revenue protection strategy are no longer employed by FirstEnergy. FirstEnergy has attempted pilot programs in regards to the revenue protection strategy, but we were told that little benefit was gained from these pilot programs. As a result, the revenue protection process operates more on a day-to-day decentralized basis. Nevertheless, FirstEnergy believes that its current decentralized Revenue Protection function is consistent across FirstEnergy. Existing field resources are responsible for finding, reporting and correcting circumstances of theft. FirstEnergy has indicated that the decentralization of the Revenue Protection function to a more cost effective approach during these difficult economic times has not reduced the continued major emphasis on revenue protection.

Other utilities have used Advanced Metering Infrastructure (AMI) technology to enhance their revenue protection services function. AMI meters provide a utility with automated indicators when theft of service is occurring. Follow-up Finding and Conclusion No. XI-5 discusses the fact that the FE-PA Companies have not begun any large scale implementation of AMI technology which, in part, limits the FE-PA Companies revenue protection options from those used at other Pennsylvania EDCs.

Staff's Follow-up Recommendation – Complete the implementation of the previously approved revenue protection strategy or devise a new strategy and plan accordingly.

Prior Recommendation – Take steps to further reduce meter reading costs and develop a plan and schedule for the implementation of AMI if determined to be cost justified.

Prior Situation – The FE-PA Companies meter reading costs were above average compared to the panel of multi-state EDCs used for statistical comparison despite significant decreases in meter reading costs since 2000 for Met-Ed and Penelec. Costs per meter read in 2005 were $0.74, $0.82, and $0.75 for Met-Ed, Penelec and Penn Power, respectively; all significantly above the electric industry average of $0.52 per meter based on an electric industry benchmarking study. BWG indicated that further improvements in productivity, accuracy and efficiency could be achieved through the use of advanced meter reading technology. FirstEnergy had postponed implementation of advanced metering infrastructure due to the required significant capital outlay; despite the fact that a 2005 FirstEnergy study indicated that, at that time, an investment in AMI would be economically justified.

Follow-up Finding and Conclusion No. XI-5 –From 2005 to 2009, the cost per meter read for residential customers decreased for Met-Ed and Penn Power but increased for Penelec; moreover the FE-PA Companies have not begun large scale implementation of AMI.

In 2009, the residential customer cost per meter read for Met-Ed, Penelec, and Penn Power was $0.70, $0.94, and $0.63, respectively, as shown on Exhibit XI-8, compared with $0.74, $0.82, and $0.75, respectively, in 2005. The FE-PA Companies rerouted a total of 977,797 meters in 2008 and 2009, 671,560 meters in 2008 and 306,237 meters in 2009, utilizing the rerouting capabilities of the FieldNet system (see Exhibit XI-9 for EDC breakdown). Reportedly, the rerouting project and adjustments to the FE-PA Companies routes caused the residential customer cost per meter read to increase from $0.81 in 2007 to $0.84 in 2008. FirstEnergy indicated that the rerouting at first caused inefficiencies (i.e., productivity decreases) until the meter readers became familiar with the new routes. However, as shown in Exhibit XI-8, the residential customer cost per meter read decreased as intended to $0.79 in 2009.

Exhibit XI-8
FE-PA Companies
Residential Customer Cost Per Meter Read
2007-2009

Operating Company	2007	2008	2009
Met-Ed	$0.72	$0.75	$0.70
Penelec	$0.98	$1.03	$0.94
Penn Power	$0.59	$0.62	$0.63
Totals	**$0.81**	**$0.84**	**$0.79**

Source: Data Request Response CS-9, Attachment B

Exhibit XI-9
FE-PA Companies
Number of Residential Customer Meter Reading Routes Rerouted
2008-2009

Operating Company	2008	2009
Met-Ed	103,048	176,253
Penelec	568,512	57,451
Penn Power	0	72,533
Totals	**671,560**	**306,237**

Source: Data Request Response CS-9, Attachment A

On August 14, 2009, the FE-PA Companies filed a Joint Petition with the Commission requesting approval of FirstEnergy's Smart Meter Technology Procurement and Installation Plan. The Plan outlines the FE-PA Companies' strategies and programs in order to implement and deploy smart meters in accordance with Act 129. The FE-PA Companies submitted a single comprehensive plan that applies to all three EDCs. The FE-PA Companies' long-term plan anticipates a 15-year full scale deployment of smart metering across their service territories. The FE-PA Companies' plan to utilize the first 24 months ("Assessment Period") of the 30-month grace period authorized by the Commission to create a business plan resulting in the submission of a deployment plan to the Commission. At the end of the Assessment Period, the FE-PA

Companies would submit a supplement to the Plan ("Deployment Plan") to the Commission that sets forth in detail the FE-PA Companies' plan for full scale deployment of smart meters. The FE-PA Companies' anticipated that the AMI vendor and technology selection process would start in September 2010 and continue for almost 10 months. The FE-PA Companies indicated that they would conduct an evaluation of the current legacy systems to assess network design. The network design task was expected to be commenced in January 2011, and be completed before the end of 2013.

In summary, the FE-PA Companies should continue to reduce the cost of reading meters through rerouting and the implementation of smart meter technology. From 2007 to 2009, FirstEnergy has rerouted many of its residential customer meters in the FE-PA Companies' service areas and continued rerouting is planned for 2010. Such rerouting, along with the implementation of smart meter technology, should help bring the FE-PA Companies' costs more in line with those of other EDCs. From 2005 to 2009, the residential customer cost per meter read decreased by $0.04 for Met-Ed and $0.12 for Penn Power, but increased by $0.12 for Penelec. Therefore, based on 485,668, 505,564, and 139,979 residential meters in use at December 31, 2009, respectively, for Met-Ed, Penelec and Penn Power, changes in annual meter reading costs experienced from 2005 to 2009 was a $223,121 decrease for Met-Ed, a $728,012 increase for Penelec, and a $201,570 decrease for Penn Power. Further improvement efforts should be under taken at Penelec to achieve a similar realized reduction in cost per read as experienced at Met-Ed from 2005 to 2009 (a decrease of $0.04 per read). If Penelec were to experience a realized improvement of a $0.04 decrease per read from its 2005 performance level (i.e., $0.82 per read), Penelec would realize a performance of $0.78 per read, which compared to Penelec's 2009 performance of $0.94 per read would be a potential improvement of $0.16 per read from the 2009 level or approximately $971,000 annually ($0.16 x 505,564 meters x 12 months). In addition, as discussed in Follow-up Finding and Conclusion No. XI-4, implementation of AMI technology would also enhance the revenue protection strategy of the FE-PA Companies.

<u>Staff's Follow-up Recommendation</u> – Complete the rerouting of the FE-PA Companies' meter reading routes and explore the benefits of expediting large scale deployment of smart meter technology.

XII. DIVERSITY & EEO

Background – The Stratified Management and Operations Audit of Metropolitan Edison Company (Met-Ed), Pennsylvania Electric Company (Penelec), and Pennsylvania Power Company (Penn Power) (collectively referred to as the FirstEnergy Pennsylvania Companies or FE-PA Companies), conducted by the consulting firm Barrington-Wellesley Group, Inc. (BWG), released by the Pennsylvania Public Utility Commission (PUC or Commission) on March 1, 2007, at D-05MGT002, D-05MGT003 and D-05MGT004, contained two recommendations in the Diversity and Equal Employment Opportunity chapter. BWG rated this functional area as needing minor improvement. In this chapter, two prior recommendations and prior situations are reviewed and two follow-up findings and two recommendations are presented.

Prior Recommendation – Identify the employment areas that are below parity and develop feasible approaches for making the FE-PA Companies' employee mix match that of the respective service territory.

Prior Situation – BWG found that opportunities existed to increase utilization of minorities and females throughout FirstEnergy's workforce. An analysis of 2005 employment data showed that only Met-Ed came close to employing a representative portion of the relevant population. The goal for all three FE-PA Companies was to have their workforce closely mirror the communities that they serve; however, BWG did not see any significant effort, beyond that which would normally be expected, to increase the percentage of minority and female employees at any of the FE-PA Companies. Moreover, BWG stated that it did not find any concrete evidence that there was any internal recognition or rewards to individual managers for meeting diversity goals.

Follow-up Finding and Conclusion No. XII-1 – Met-Ed's, Penelec's, and Penn Power's workforces do not have proportional representation of women and minorities in several job categories.

Exhibits XII-1, XII-2 and XII-3 show the underutilization of women and minorities at Met-Ed, Penelec and Penn Power, respectively for 2009, which was the most recent data available at the time of the Audit Staff's field work. Underutilization results when the percentage of women and minorities employed in a particular job group is less than would be reasonably expected given their availability within the applicable labor market. Although the Company has expressed a commitment to utilize a diverse workforce and has programs in place, underutilization is still occurring. There are four methods that can be used to determine if underutilization is occurring in a given job group:

1. The "any difference" rule (underutilization exists if there is any difference between the availability of women or minorities, compared to their percentages in the employer's actual workforce).
2. The "one person" rule (underutilization exists if the difference between availability and actual employment equals one person or more).

3. The "four-fifths" rule (underutilization exists if the actual employment of women or minorities is less than four-fifths of their availability).
4. A "two standard deviations" analysis (underutilization exists if the difference between availability and actual employment exceeds two standard deviations, a common measure of statistical significance).

FirstEnergy uses a two standard deviations analysis to demonstrate a standard of reasonableness for placements. The two standard deviations analysis is based on the observation that if the employer pays no attention at all to sex or race in placing people in jobs, there would be some natural degree of departure from perfect parity, both above and below, and that only extreme departures below parity should be construed as evidence of possible discriminatory practices. If the difference between actual utilization and the availability percentages results in two points from the mean, then the difference may be significant and a goal should be set.

Exhibit XII-1
Metropolitan Edison Company
Under-Utilization by EEO Category
For the 2009 Plan Year

Metropolitan Edison Company	Total	Female			Minority			Under-Represented	
EEO Category		#	%	Availability	#	%	Availability	Female	Minority
Managers	24	1	4.17%	14.43%	3	12.50%	7.13%	2	0
Supervisors	62	5	8.06%	10.73%	4	6.45%	8.59%	1	1
Sr. Prof. - Engineering	9	1	11.11%	9.02%	1	11.11%	5.05%	0	0
Prof. - Engineering	4	0	0.00%	3.81%	0	0.00%	4.99%	0	0
Sr. Prof. - Business	8	2	25.00%	46.35%	0	0.00%	7.74%	1	0
Prof. - Business	10	9	90.00%	64.66%	3	30.00%	14.46%	0	0
Sr. Tech. - Engineering	32	7	21.88%	22.37%	4	12.50%	8.79%	0	0
Tech. - Engineering	18	5	27.78%	20.98%	1	5.56%	5.79%	0	0
Sr. Tech. - Other	38	3	7.89%	24.35%	3	7.89%	8.33%	6	0
Tech. - Other	9	3	33.33%	52.90%	1	11.11%	8.21%	1	0
Sr. Clerical	17	17	100.00%	81.39%	3	17.65%	32.12%	0	2
Clerical	1	0	0.00%	81.39%	0	0.00%	32.12%	0	0
Meter Readers	80	15	18.75%	9.40%	9	11.25%	5.46%	0	0
Sr. Craft	294	10	3.40%	3.91%	25	8.50%	9.10%	0	0
Entry Craft	83	4	4.82%	9.18%	10	12.05%	10.74%	3	0
Operatives	16	4	25.00%	13.02%	2	12.50%	6.88%	0	0
Service Workers - Other	1	0	0.00%	34.96%	0	0.00%	5.34%	0	0
Totals	706	86	12.18%		69	9.77%		14	3

Source: Data Request Nos. DIV-1, DIV-2

Exhibit XII-2
Pennsylvania Electric Company
Under-Utilization by EEO Category
For the 2009 Plan Year

Pennsylvania Electric Company	Total	Female			Minority			Under-Represented	
EEO Category		#	%	Availability	#	%	Availability	Female	Minority
Managers	31	9	29.03%	18.16%	2	6.45%	6.01%	0	0
Supervisors	78	7	8.97%	13.88%	4	5.13%	3.58%	0	0
Sr. Prof. - Engineering	9	2	22.22%	13.90%	1	11.11%	1.94%	0	0
Prof. - Engineering	10	1	10.00%	7.54%	0	0.00%	1.53%	0	0
Sr. Prof. - Business	14	8	57.14%	58.95%	0	0.00%	5.84%	0	0
Prof. - Business	10	7	70.00%	67.49%	1	10.00%	10.92%	0	0
Sr. Tech. - Engineering	7	2	28.57%	22.83%	0	0.00%	0.96%	0	0
Tech. - Engineering	1	0	0.00%	15.15%	0	0.00%	6.06%	0	0
Sr. Tech. - Other	77	7	9.09%	24.78%	2	2.60%	2.71%	12	0
Tech. - Other	22	2	9.09%	35.36%	1	4.55%	3.33%	5	0
Sr. Clerical	30	30	100.00%	100.00%	2	6.67%	1.33%	0	0
Clerical	5	5	100.00%	67.24%	0	0.00%	4.77%	0	0
Meter Readers	91	23	25.27%	16.85%	6	6.59%	4.40%	0	0
Sr. Craft	398	3	0.75%	0.96%	17	4.27%	2.22%	0	0
Entry Craft	87	0	0.00%	6.60%	0	0.00%	1.60%	5	1
Operatives	39	13	33.33%	3.04%	3	7.69%	0.83%	0	0
Service Workers - Other	1	0	0.00%	22.52%	0	0.00%	2.42%	0	0
Totals	910	119	13.08%		39	4.29%		22	1

Source: Data Request Nos. DIV-1, DIV-2

Exhibit XII-3
Pennsylvania Power Company
Under-Utilization by EEO Category
For the 2009 Plan Year

Pennsylvania Power Company	Total	Female			Minority			Under-Represented	
EEO Category		#	%	Availability	#	%	Availability	Female	Minority
Officials & Managers	21	0	0.00%	16.64%	2	9.52%	1.60%	3	0
Professionals	5	0	0.00%	41.59%	0	0.00%	6.06%	2	0
Technicians	15	4	26.67%	50.82%	0	0.00%	5.61%	3	0
Sales Workers	0	0	0.00%		0	0.00%		0	0
Office & Clerical	24	11	45.83%	30.18%	2	8.33%	2.01%	0	0
Craft Workers (Skilled)	128	6	4.69%	6.86%	5	3.91%	20.84%	2	21
Operatives (Semi-Skilled)	0	0	0.00%		0	0.00%		0	0
Laborers (Unskilled)	0	0	0.00%		0	0.00%		0	0
Service Workers	0	0	0.00%		0	0.00%		0	0
Totals	193	21	10.88%		9	4.66%		10	21

Source: Data Request Nos. DIV-1, DIV-2

Met-Ed has female underutilization in six job groups and minority underutilization in two job groups; Penelec has female underutilization in three job groups and minority underutilization in one job group; and Penn Power has female underutilization in four job groups and minority underutilization in one job group. FirstEnergy continues to strive for attainment of full representation of women and minorities for all positions. FirstEnergy's efforts include:

- Utilizing intern and cooperative education programs to actively recruit and hire female and minority students who may later be considered for full time regular employment.
- Sponsoring students for internships through INROADS, an organization which helps businesses gain greater access to diverse talent through continuous leadership development of outstanding ethnically diverse students and placement of those students in internships at many of North America's top corporations, firms and organizations.
- Building relationships with targeted female and minority professional organizations to attract prospects for future opportunities.
- Increasing FirstEnergy's presence and enhancing its partnerships on targeted campuses to build the Company's brand as an employer of choice and focusing resources with their female and minority student organizations (e.g., Society of Women Engineers and National Society of Black Engineers).
- Developing a structured training workshop focused on fundamental recruiting practices and creative sourcing methods to attract diverse candidates.
- Integrating diversity and inclusion content into FirstEnergy's Careers homepage to appeal to diverse and female candidates.
- Initiating a contract with a search firm that has access to minority candidates in order to build diverse resources for external searches.
- Attending diversity career fairs and events.
- Advertising in diverse websites and publications.
- Networking with local diverse organizations to identify candidates.
- Promoting FirstEnergy's Energy Delivery and Generation business unit support of craft training programs through local colleges and universities.
- Posting all professional, craft, technical, and administrative positions on FirstEnergy's website and CareerBuilder.com's website, which includes cross postings to their diversity partner sites, and state agencies where the positions are located.

Nevertheless, there is potential for additional employee utilization success through more intensive recruitment and retention of qualified women and minorities for all positions, particularly where under representation is present. FirstEnergy should

make a good faith effort to reach parity in the under represented job groups. Similar to other public utilities, the FE-PA Companies have indicated that they have difficulty attracting women and/or minorities for certain positions (e.g., technicians and skilled craft workers). For all three FE-PA Companies combined, women are under represented by 46 individuals and minorities are under represented by 25 individuals.

Staff's Follow-up Recommendation – Intensify efforts to attain full representation of women and minorities within the workforce.

Prior Recommendation – Take necessary steps to meet minority business supplier goals.

Prior Situation – From 2003 to 2005, FirstEnergy had met or exceeded its goals for acquiring materials and services from diverse business enterprises, except for minority businesses. Although FirstEnergy exceeded the minority business goal in 2003 (1.94% actual vs. 1.5% goal), it fell short of its goals in 2004 and 2005 (2.6% actual in 2004 vs. 3% goal in 2004; 1.5% actual in 2005 vs. 3% goal in 2005).

Follow-up Finding and Conclusion No. XII-2 – FirstEnergy has been consistently reaching many, but not all, of its diverse supplier goals.

FirstEnergy establishes goals for the following diverse supplier Business Classes: Small Business, Minority Business, Woman-Owned Business, HUBZone Business (Historically Underutilized Business Zones program of the U.S. Small Business Administration), Veteran-Owned Business, and Service Disabled Veteran Business. Goals are established for total FirstEnergy purchases as opposed to the FE-PA Companies' purchases. Percentage goals for each Business Class and actual results for 2006 through 2010 are shown in Exhibit XII-4. It should be noted that the Total Spent FE-PA column reflects FirstEnergy's expenditures with Pennsylvania based suppliers. These items may or may not have been used by one of the three FE-PA Companies. This is how FirstEnergy captures this information, and is not typically being monitored by the Commission in this manner.

FirstEnergy & FE-PA Companies
Diverse Suppler Goals and Amount Spent
2006-2010

2006					
Business Class	Goal	Total Spent FirstEnergy ($ Million)	Percent	Total Spent PA Suppliers ($ Million)	Percent
Small	25%	$397.8	27.99%	$89.9	25.33%
Minority	3%	25.0	1.76%	3.2	0.90%
Woman-Owned	3%	41.0	2.89%	10.9	3.07%
HUBZone	0.06%	3.7	0.26%	0.0	0.00%
Veteran-Owned	0.25%	20.7	1.46%	4.8	1.35%
Service Disabled Veteran	0.01%	0.3	0.02%	0.02	0.01%
Subtotal Diverse Expenditures		$488.5		$108.8	
Total Expenditures		$1,421.0		$354.9	
2007					
Business Class	Goal	Total Spent FirstEnergy ($ Million)	Percent	Total Spent FE-PA ($ Million)	Percent
Small	28%	$404.7	27.36%	$95.9	29.35%
Minority	3%	21.2	1.43%	2.0	0.61%
Woman-Owned	3%	36.9	2.49%	10.8	3.31%
HUBZone	0.2%	1.7	0.11%	0.0	0.00%
Veteran-Owned	1.2%	20.2	1.37%	4.7	1.44%
Service Disabled Veteran	0.015%	0.6	0.04%	0.06	0.02%
Subtotal Diverse Expenditures		$485.3		$113.5	
Total Expenditures		$1,479.0		$326.7	
2008					
Business Class	Goal	Total Spent FirstEnergy ($ Million)	Percent	Total Spent FE-PA ($ Million)	Percent
Small	28%	$530.4	27.12%	$107.5	30.87%
Minority	3%	38.7	1.98%	5.6	1.61%
Woman-Owned	3%	60.0	3.07%	13.0	3.73%
HUBZone	0.2%	5.4	0.28%	0.3	0.10%
Veteran-Owned	1.2%	42.7	2.18%	7.4	2.13%
Service Disabled Veteran	0.015%	1.8	0.09%	1.3	0.37%
Subtotal Diverse Expenditures		$679.0		$135.1	
Total Expenditures		$1,956.0		$348.2	

FirstEnergy & FE-PA Companies
Diverse Suppler Goals and Amount Spent
2006-2010

2009					
Business Class	Goal	Total Spent FirstEnergy ($ Million)	Percent	Total Spent FE-PA ($ Million)	Percent
Small	27%	$389.0	23.53%	$113.5	32.55%
Minority	3%	33.5	2.03%	4.4	1.26%
Woman-Owned	3%	44.9	2.72%	13.3	3.81%
HUBZone	0.2%	3.8	0.23%	0.3	0.10%
Veteran-Owned	1.25%	38.3	2.32%	7.8	2.24%
Service Disabled Veteran	0.015%	0.5	0.03%	0.04	0.01%
Subtotal Diverse Expenditures		$510.0		$139.4	
Total Expenditures		$1,653.0		$348.7	
2010					
Business Class	Goal	Total Spent FirstEnergy ($ Million)	Percent	Total Spent FE-PA ($ Million)	Percent
Small	25%	$443.0	26.43%	$106.5	25.76%
Minority	3%	40.3	2.40%	4.2	1.02%
Woman-Owned	3%	44.4	2.65%	17.0	4.11%
HUBZone	0.2%	3.4	0.20%	0.2	0.04%
Veteran-Owned	1.5%	40.2	2.40%	5.2	1.26%
Service Disabled Veteran	0.02%	1.1	0.07%	0.6	0.15%
Subtotal Diverse Expenditures		$572.4		$133.7	
Total Expenditures		$1,676.0		$413.5	

Source: Data Request Nos. DIV-4, DIV-5, & DIV-6

The number of years that FirstEnergy did not meet each of its diverse supplier Business Class goals from 2006 through 2010 is shown in Exhibit XII-5.

Exhibit XII-5
FirstEnergy Corp.
Number of Years Diverse Supplier
Business Class Goals Not Met
2006-2010

Business Class	Number of Years Goal Not Met
Small	3
Minority	5
Woman-Owned	4
HUBZone	1
Veteran-Owned	0
Service Disabled Veteran	0

Source: Analysis of Data Request Nos. DIV-4, DIV-5, & DIV-6

The FE-PA Companies combined expenditures from 2006 through 2010 are shown on Exhibit XII-6.

Exhibit XII-6
FE-PA Companies
Diverse Supplier Expenditures (in $millions)
2006-2010

Business Class	2006	2007	2008	2009	2010	% Change 2006-2010
Small	$89.9	$95.9	$107.5	$113.5	$106.5	18.5%
Minority	3.2	2.0	5.6	4.4	4.2	31.3%
Woman-Owned	10.9	10.8	13.0	13.3	17.0	56.0%
HUBZone	0.0	0.0	0.3	0.3	0.2	NM
Veteran-Owned	4.8	4.7	7.4	7.8	5.2	8.3%
Service Disabled Veteran	0.02	0.06	1.3	0.04	0.6	2900.0%
Total	**$108.8**	**$113.5**	**$135.1**	**$139.4**	**$133.7**	**22.9%**

NM = Not Meaningful
Source: Data Request Nos. DIV-4, DIV-5, & DIV-6

The FE-PA Companies' combined purchases from diverse business enterprises increased by 22.9 percent over the five year period 2006 through 2010. Also, the expenditures for each business class increased from 2006 to 2010. These increases were due, at least in part, to:

- Supply Chain revising its Opportunities database to include specific language and buyer requirements on diversity opportunities in the Supply Chain pipeline. This change was made operational in the latter part of 2007 and provides more transparency into sourcing opportunities for diverse businesses.
- FirstEnergy conducting discussions with the Minority Supplier Development Council of PA-NJ-DE to institute a formal corporate/MBE mentoring program starting in 2008. This program provides more one-to-one interaction with PA-based minority business owners and FirstEnergy.

FirstEnergy continues to work with the minority advocacy groups in Pennsylvania to help identify potential suppliers, program improvements and best practices. However, FirstEnergy has been unable to achieve its diverse supplier goals for all Business Classes. Therefore, FirstEnergy should continue to make a good faith effort to meet its diverse supplier goals. Furthermore, it should be noted that FirstEnergy indicated that the 3% Minority Business goal is an aggressive (i.e., stretch) goal and difficult to achieve. Also, the economic downturn that occurred in 2008 has hampered FirstEnergy's efforts to achieve its goals.

Staff's Follow-up Recommendation – Strive to achieve all FirstEnergy diverse supplier goals.

Follow-up Finding and Conclusion No. XII-3 – The FE-PA Companies do not track or annually report purchases made from persons with disabilities-owned businesses.

The FE-PA Companies are submitting an annual diversity report with the PUC that conforms to the filing format of providing multi-year data for both human resources and procurement sections. However, although the FE-PA Companies track and report purchases made from minority owned and woman owned businesses and several other categories (as detailed in Follow-up Finding and Conclusion No. IX-2), they do not track or report on purchases made from persons with disabilities owned businesses as first directed by the Commission in April 1994.

The Commission has encouraged utilities to proactively improve the diversity in their workforces and purchasing efforts for over 18 years. On February 13, 1992, the Commission first approved a motion to make diversity an integral part of the management audit process and to direct utilities to file quarterly diversity status reports. Subsequent Commission motions and directives changed the filing requirements from quarterly to semi-annual and in March 1997 to an annual diversity report including multi-year data. Since 1994 the categories for procurement reporting have included minority owned business enterprises, women owned business enterprises, and physically challenged or persons with disabilities owned business enterprises (DBEs). It took the majority of Pennsylvania utilities one to three years to modify their systems and processes to identify and track purchases in the DBE category which is not used by the Office of Federal Contract Compliance Programs to whom they also submit reports. The

FE-PA Companies do track purchases made from service disabled veteran-owned businesses, but this category is not what was prescribed by the Commission. At this point we believe the FE-PA Companies are the only major jurisdictional utility companies in Pennsylvania that do not track and report purchases from a broader category of DBEs.

<u>Staff's Follow-up Recommendation</u> – Track purchases from persons with disabilities owned business enterprises and report the results annually to the Commission along with purchases made from minority and women owned business enterprises.

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 Metropolitan Edison Company, Pennsylvania Electric Company, Pennsylvania Power Company and FirstEnergy Corp.

This audit was conducted by Bryan Borres, Porus Irani and Brian McCauley of the Management Audit Staff of the Bureau of Audits.