



Agenda Date: 3/12/12
Agenda Item: 2G

STATE OF NEW JERSEY
Board of Public Utilities
44 South Clinton Avenue, 9th Floor
Post Office Box 350
Trenton, New Jersey 08625-0350
www.nj.gov/bpu/

ENERGY

IN THE MATTER OF THE BOARD'S INVESTIGATION)
INTO RELIABILITY ISSUES RELATED TO JERSEY)
CENTRAL POWER & LIGHT COMPANY'S)
MORRISTOWN UNDERGROUND DISTRIBUTION)
SYSTEM) DOCKET NO. EO11090526

Marc B. Lasky, Attorney for Jersey Central Power & Light Company
Stefanie A. Brand, Director, Division of Rate Counsel

BY THE BOARD:

The New Jersey Board of Public Utilities ("Board") is empowered to ensure that regulated public utilities provide safe, adequate and proper service to the citizens of New Jersey. N.J.S.A. 48:2-23. In addition, pursuant to N.J.S.A. 48:2-13, the Board has been vested by the Legislature with the general supervision and regulation of and jurisdiction and control over all public utilities, "so far as may be necessary for the purpose of carrying out the provisions of [Title 48]." The courts of this State have held that the grant of power by the Legislature to the Board is to be read broadly, and that the provisions of the statute governing public utilities are to be construed liberally. See, e.g. Township of Deptford v. Woodbury Terrace Sewerage Corp. 54 N.J. 418, 424 (1969); Bergen County v. Dep't of Public Utilities, 117 N.J. Super. 304 (App. Div. 1971); in re Public Service Electric and Gas Company, 35 N.J. 358, 371 (1961). The Board is also vested with the authority pursuant to N.J.S.A. 48:2-19, to investigate any public utility, and, pursuant to N.J.S.A. 48:2-16 and 48:2-40, to issue orders to public utilities.

Jersey Central Power & Light Company ("JCP&L") operates an underground electrical system ("Network") in Morristown that consists of five (5) 12.47 kV distribution circuits including approximately 50 transformers located in vaults in the downtown Morristown area. A series of events and incidents have occurred in recent years that have affected reliability, and in some cases caused damage to persons and property. These incidents include, in the most recent case, personal injury to a member of the public.

To properly discharge its statutory responsibilities as summarized above, by Order dated September 22, 2011, the Board initiated an investigation into the reliability and safety of the Network, and directed JCP&L to hire a Special Reliability Master ("SRM") to critique the underground system's design, assess the company's maintenance and operation of the system,

determine the current status of the Network, and where warranted, make recommendations to increase the safety and reliability of the Network. The Board's October 10, 2011 Order approved the selection of PJ Downes Associates, LLC to act as the SRM and also approved a scope-of-work. In the Board's February 10, 2012 Order, the Board acknowledged receipt of the SRM report titled Report to the State of New Jersey Board of Public Utilities I/M/O the Board's Investigation into Reliability Issues related to Jersey Central Power & Light Company's Morristown Underground System, dated February 3, 2012 ("SRM Report"). The Order also directed Staff to review the SRM Report and make preliminary recommendations for JCP&L to adopt to foster the safe and reliable operation of the Network at the March 12, 2012 Board meeting.

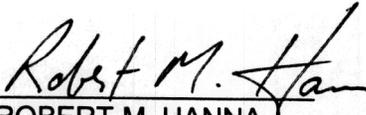
Board Staff has fully reviewed the SRM Report and the included recommendations. Staff subsequently held two meetings with JCP&L and the SRM to review the findings in detail. As indicated in the February 10th Order, JCP&L has committed to implementing all of the recommendations presented in the SRM Report, and provided Staff with current action plans to address the Network operation and safety. Staff has prepared the attached document, **Staff Review of the SRM Report and Recommendations**, in which the formal recommendations to JCP&L for the safe and reliable operation of the Morristown Network are presented. These recommendations adopt those presented by the SRM with some modifications, and include some additional directives. These recommendations are summarized on the attached document, **Tabular Synopsis of Recommendations**. The recommendations, in general, have a sunset date of December 1, 2020.

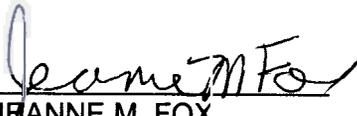
Staff recommends that the Board adopt the recommendations as presented in the Staff Review of the SRM Report and Recommendations and direct JCP&L to comply with the recommendations and directives listed therein. Additionally, Staff recommends that JCP&L continue to retain the services of PJ Downes Associates, LLC for a period of one year to assist the Company with implementation of these recommendations.

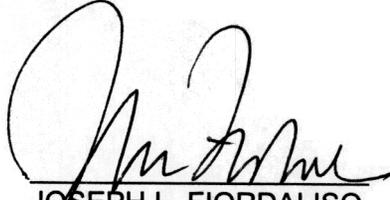
Accordingly, after review of the SRM Report and the recommendations of Staff, the Board HEREBY DIRECTS JCP&L to implement the attached recommendations for the safe and reliable operation of the Morristown Network, and start the processes necessary to report to the Board as recommended. Additionally, the Board HEREBY FURTHER DIRECTS that JCP&L continue to retain PJ Downes Associates, LLC for a period not to exceed one year to assist with implementation of the recommendations presented.

DATED: 3/12/2012

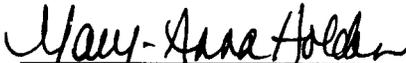
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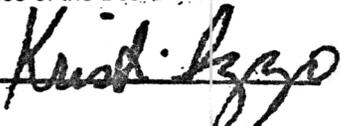

NICHOLAS ASSELTA
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MARY-ANNA HOLDEN
COMMISSIONER

ATTEST:


KRISTI IZZO
SECRETARY

I HEREBY CERTIFY that the within document is a true copy of the original in the files of the Board of Public Utilities



IN THE MATTER OF THE BOARD'S INVESTIGATION INTO
RELIABILITY ISSUES RELATED TO JERSEY CENTRAL POWER & LIGHT COMPANY'S
MORRISTOWN UNDERGROUND SYSTEM - DOCKET NO EO11090526.

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IN THE MATTER OF THE BOARD'S INVESTIGATION INTO RELIABILITY ISSUES
RELATED TO JERSEY CENTRAL POWER & LIGHT COMPANY'S MORRISTOWN
UNDERGROUND DISTRIBUTION SYSTEM
DOCKET NO. EO11090526

STAFF REVIEW OF THE SRM REPORT AND RECOMMENDATIONS
MARCH 12, 2012

Jersey Central Power & Light Company ("JCP&L" or "Company") operates an underground electrical system ("Network") in Morristown that consists of five (5) 12.47 kV distribution circuits including 51 transformers located in vaults in the downtown Morristown area which serves approximately 1,125 customers. A series of events and incidents have occurred in recent years that have affected reliability, and in some cases caused damage to persons and property. Pursuant to Board Orders of September 22, 2011, October 10, 2011 and February 10, 2012 respectively, an investigation was opened by the Board into the reliability and safety of the Network, JCP&L was directed to hire PJ Downes Associates, LLC as a Special Reliability Master (SRM) to investigate and critique the Network, and the SRM submitted a report of his investigation which the Board accepted for filing, and Staff was directed to review the report and make recommendations.

The SRM submitted his recommendations in his report I/M/O the Board's Investigation Into Reliability Issues related to Jersey Central Power & Light Company's Morristown Underground System dated February 3, 2012.

As directed, Staff has reviewed the report provided by the SRM on the Network system. Staff concurs with the SRM that, while the plan, design and construction of the Network are sound, JCP&L has shown significant deficiencies in monitoring, preventive maintenance, corrective maintenance and execution of relevant Company policies and procedures. Some specific deficiencies in the Company's practice were failure to follow the JCP&L procedures with respect to testing and maintenance on the network protectors, transformers, and switches in the Network, proper wrapping of primary cables in the vaults/manholes, vault inspections, and follow through on corrective maintenance of network equipment.

Subsequent to the issuance of the SRM report, Staff met with JCP&L and the SRM to review the results in detail. JCP&L has already started to implement some of the recommendations presented by the SRM and is finalizing action plans to address the remaining issues.

As a part of the report, the SRM listed twenty-five recommendations for JCP&L to implement. Staff agrees and has adopted these recommendations, with some modifications, and has listed additional requirements. Additionally, reporting criteria has been developed to address not only these recommendations but continued actions by JCP&L on the Network. The recommendations, criteria, and requirements listed below are placed on JCP&L in order to insure safe and adequate operation and maintenance of the Network and underground distribution system.

1. Remove all oil switches located underground in primary circuits of the Morristown Network and/or underground system by May 1, 2012.
2. In order to verify projected loads on the network transformers during summer peak loading, the special SRM has recommended that the Company obtain spot load checks on each transformer in the Morristown network during periods when the ambient temperature exceeds 90 degrees and during such hours as the daily peak load normally occurs. The company will complete collection of this data by the end of September 2012.
3. Provide micro-processor relays on each of the five primary circuits that supply the Morristown Network by the end of December 2012.
4. Install substation grade animal guards on all bushings of the 12 kV network distribution breakers by the end of December 2012.
5. Provide substation grade lighting arrestors for all the 12 kV circuits associated with the Morristown Network by the end of December 2012.
6. All primary cables located in the Morristown ducted distribution system not covered with fire retardant arc proofing tape as required by the FirstEnergy (FE) Distribution Engineering Manual shall have this tape installed by the end of December 2012.
7. Fiber optic cables in manholes or vaults must be removed from floors and properly secured to walls or ceilings by December 2012.
8. The Company shall select a suitable handheld data logging device to collect the results of Network tests and inspections in electronic format that will provide logic to the field technician that a complete test or inspection is performed, and to aid in the distribution of the results to the appropriate reviewers. After the selection process is complete, the Company shall act promptly to place the chosen devices into service
9. The Company will provide a monthly report on the progress of items 1 thru 8 until all items have been completed.
 - 9.1. The report shall identify:
 - 9.1.1. the task being reported
 - 9.1.2. the locations where the tasks were done
 - 9.1.3. an estimate of the percentage of the total task completed.
 - 9.2. The Company shall provide a hardcopy and a separate copy of the report electronically transmitted to the Secretary of the Board and the Chief, Bureau of Engineering Services, Division of Energy in pdf format.
 - 9.3. The monthly report shall be signed by the Manager of Engineering responsible for the Morristown Network certifying to the accuracy and completeness of the data the report contains.
10. The Company will complete its research of the manufacture and age information for the transformers in the Network, and provide to the SRM by April 1, 2012.
11. During the SRM review of the Network a list of pending corrective work was identified, and the Company has agreed to implement these items.

- 11.1. The Company shall submit concurrently with the first quarterly report specified in item 27 of this review a listing identifying the item to be corrected and the expected completion date of the work.
12. The SRM identified the need for a study of secondary network grid limiters on the Morristown network.
 - 12.1. The company will perform a study of the placement and sizing of such devices with the aim of increasing the reliability, safety and reparability of the Morristown network system.
 - 12.2. Concurrent with the first quarterly report required under item 27 of this review, the company will report the results of this study with recommendations for placement of these devices and a suggested timetable.
 - 12.3. Staff may require consultation with the SRM to review the Company's findings and implementation schedule.
 - 12.4. JCP&L shall install limiters as recommended by this report.
13. The cable termination chamber of each Network transformer shall be completely inspected and dielectric fluid changed.
 - 13.1. The chamber cover is to be removed.
 - 13.2. The cable terminations inspected for deterioration.
 - 13.3. The cover shall be reinstalled with new gaskets and pressure tested for leaks.
 - 13.4. The chamber refilled with a high flash point non-petroleum insulating fluid.
 - 13.5. A permanent placard shall be attached to the chamber identifying the type of fluid in the cable termination chamber.
 - 13.6. All deficiencies are to be corrected before the unit is returned to service.
 - 13.7. All Network transformers with such chambers shall have this service completed by the end of June 1, 2012.
 - 13.8. The Company shall provide a section in the report to the Board under item 27 of this review on the progress of this item until the Company reports that this task is complete.
14. The SRM has expressed concerns about the ventilation of Network transformers located in underground vaults.
 - 14.1. The Company shall perform a study of the present transformer ventilation that details the location of all the vaults in the network and reports the percent of compliance with the First Energy vault ventilation standards of twenty square feet of clear grate opening per thousand kVA of transformer capacity.
 - 14.2. The report should document the Company's plan for correction of deficiencies.

- 14.3. The report shall be signed by the Manager of Engineering responsible for the Network certifying to the accuracy and completeness of the data the report contains.
 - 14.4. The Company shall provide a hardcopy and a separate copy of the report electronically transmitted to the Secretary of the Board, the Chief, Bureau of Engineering Services, Division of Energy, in pdf format.
 - 14.5. The report shall be submitted by May 30, 2012.
15. For those four vaults that contain two transformers in the same vault, the Company shall evaluate the feasibility of construction of a fire barrier in each of the vaults.
 - 15.1. For those vaults where it is feasible to install a fire partition, the Company shall install the partition by the end of December 2012. Board Staff will review any finding of non feasibility and inform the Company of its concerns, if any.
 - 15.2. The report shall be signed by the Manager of Engineering responsible for the Network certifying to the accuracy and completeness of the data the report contains.
 - 15.3. The Company shall provide a hardcopy and a separate copy of the report electronically transmitted in pdf format to the Secretary of the Board, and the Chief, Bureau of Engineering Services, Division of Energy.
 - 15.4. The report shall be submitted by the end of December 2012.
16. During the course of the review of the Network system, the SRM received input from Morristown first responders that they would like the Company to provide training to them on the components, expected faults with and first responders' correct reactions to the expected faults of both the overhead and underground distribution systems.
 - 16.1. The company shall reach out to these groups and provide the training they need and update or retrain them at the frequency they request.
 - 16.2. As part of the quarterly reports required under item 27 of this review, the Company will include a section that will:
 - 16.2.1. Outline any training provided by the Company during the quarter including the name of the group trained;
 - 16.2.2. Indicate the number of persons trained; and
 - 16.2.3. Summarize items covered in the training.
 - 16.3. If no training was provided during the reporting quarter, this section should note the fact.
17. The Company indicated to the SRM that it has begun to share with elected and appointed officials summaries of a Company internal document that tracks faults in the Morristown underground system, and to inquire monthly from the same officials reports of electrical problems they have received from sources other than the Company.
 - 17.1. The Company shall include a section in the quarterly report specified under item 27 of this review a section that includes a copy of the

summaries transmitted to Morristown officials and copies of any summaries presented by the Morristown officials to the Company.

- 17.2. If no summaries were transmitted, this section should note this.
18. Going forward, all new or replacement Network transformers should be equipped with load break primary elbow input, micro processor controlled NWP and low flammability non-petroleum dielectric fluid.
 - 18.1. If the new or replacement transformer is to be installed in an existing vault that will not allow a network transformer of these characteristics to operate safely or physical dimensions are incompatible with the vault space, JCP&L may specify an alternative unit.
19. Electrical faults in ducted system may cause a sudden pressure rise in the system, and may dislodge manhole covers. Vented covers or tethered covers offer the possibility to limit damage as compared to unrestrained covers.
 - 19.1. The Company shall review the various systems available to minimize the effects of sudden overpressure, and install a minimum of twelve manhole covers of its choosing in order to gain operating experience in their use.
 - 19.2. The test installations shall be complete by the end of December 2012.
 - 19.3. The Company shall provide a section in the report to the Board under item 27 in this review on the progress of this item until the Company reports that this item is complete.
 - 19.4. JCP&L should continue to work with other utilities and research groups to understand all the dynamics of this problem.
20. Twice a calendar year the Company will perform a functional test of the Network Protectors (NWPs) by de-energizing the primary circuit connected to a group of network transformers and noting whether any back feed occurs. If a back feed occurs, the Company will record the failure of the test and promptly repair the problem. Re-testing shall be done until no back feed is detected.
 - 20.1. The results of this testing are to be reported under item 27.4.1 of this review
21. The Company shall perform a complete inspection of the network protector on each of its network transformers every four years.
 - 21.1. The test may be done to First Energy standards and reported on its Network Protector Inspection Sheet Form 1062, or its electronic equivalent.
 - 21.2. To insure that the inspections are done on a continuous basis, no less than 20% of the units must be tested per year.
22. The Company should replace and upgrade all electro-mechanical and analog relays with micro-processor units.
23. The Company shall perform dielectric testing of the oil in each oil containing chamber of each network transformer every two years.
 - 23.1. To insure that the inspections are done on a continuous basis, no less than 40% of the units must be tested per year.

24. The Company shall perform a physical inspection of each network transformer vault and customer vault with JCP&L owned equipment every 6 months.
 - 24.1. The test may be done to First Energy standards and reported on its Network Protector Inspection Sheet Form 1061, or its electronic successor.
 - 24.2. To insure that the inspections are done on a continuous basis, no less than 25% of the vaults must be inspected per quarter.
25. The Company will inform Staff, via e-mail and verbal communication, regarding the timing of construction or implementation of other recommendation field work in the Morristown area that could potentially have an impact on the Network and its operation.
26. The Company will report any incident (e.g. damage or fault) to equipment or facilities within the Network, regardless of whether the incident meets reportable criteria (NJAC§14:3-6.4), as well as any planned outages, to the Chief, Bureau of Engineering Services, Division of Energy via e-mail and verbal communication.
27. JCP&L shall provide a report as described below four times per calendar year up to and through the end of December, 2020, unless the end date is modified by order of the Board.
 - 27.1. A hardcopy of the report and an electronically transmitted copy of the report in a pdf format shall be sent to the Secretary of the Board and the Chief, Bureau of Engineering Services, Division of Energy and will be due the last business day of the month following the calendar quarter.
 - 27.2. The report will be due the last business day of the month following the calendar quarter.
 - 27.3. The quarterly report shall be signed by the Manager of Engineering responsible for the Network certifying to the accuracy and completeness of the data the report contains.
 - 27.4. The report will include the results of all tests or inspections specified below for the calendar quarter.
 - 27.5. This includes:
 - 27.5.1. The circuit number taken out of service for the NWP functional test and the results of the test.
 - 27.5.2. A copy of form 1062, or its electronic successor, for each NWP inspected during the calendar quarter.
 - 27.5.3. A copy of form 1061, or its electronic successor, for each vault inspected during the calendar quarter.
 - 27.5.4. A copy of form 1060, or its electronic successor, for each manhole inspected during the calendar quarter.
 - 27.5.5. A copy of the oil test results for each oil containing chamber on each network transformer tested during the calendar quarter.
 - 27.5.6. A listing in the manner of a scorecard that summarizes on a calendar quarterly basis the Company's progress on

performing the number of inspections and tests (Preventative Maintenance (PM)) necessary for the safe and reliable operation of the Morristown network for the current year.

27.5.6.1. The listing title area shall include the year and calendar quarter reported.

27.5.6.2. The rows shall include an entry for each type of equipment (i.e. transformer, network protector, etc.) and each class of location (i.e. vaults, manholes, etc.) inspected or tested. A final row shall report numeric totals for the columns where appropriate.

27.5.6.3. The columns shall include

27.5.6.3.1. the type of equipment or class of location

27.5.6.3.2. the maintenance type

27.5.6.3.3. the frequency the test or inspection (PM) is to be performed

27.5.6.3.4. the total planned PMs to be performed per calendar year

27.5.6.3.5. four columns entitled (# of PMs) Q1, Q2, Q3, Q4 that report the number of PMs completed during the reporting quarter

27.5.6.3.6. A year to date (YTD) of the total PMs for the reporting year

27.5.6.3.7. The percentage of total inspections or tests calculated by dividing the number of inspections/tests reported in the YTD column by the total planned PM column.

27.5.7. A listing in the manner of a scorecard that summarizes on a calendar quarterly basis the Company's progress managing the Corrective Maintenance (CM) orders generated by the Company's inspections and tests of the Morristown network for the current year

27.5.7.1. The listing title area shall include the year and calendar quarter it is reporting.

27.5.7.2. The rows shall include an entry for each type of equipment (i.e. transformer, network protector, etc.) and each class of location (i.e. vaults, manholes, etc.) inspected or tested and a final row that lists the total planned and actual inspections and tests performed.

27.5.7.3. The columns shall include:

27.5.7.3.1. the maintenance type or test that generated the CM

27.5.7.3.2. four columns entitled (Open) Q1, Q2, Q3, Q4, for the four quarters of the calendar year,

that report the number of CM's remaining OPEN from the previous quarter plus the number of CM's opened during the quarter

- 27.5.7.3.3. A column entitled OPEN YTD that reports the year to date number of CM's open at the start of the year plus the number of CM's opened during the year up to the reporting quarter.
- 27.5.7.3.4. four columns entitled Q1, Q2, Q3, Q4, for the four quarters of the calendar year, that report the number of CM's CLOSED from during the quarter
- 27.5.7.3.5. A column entitled CLOSED YTD that reports the year to date number of CM's closed during the year up to the reporting quarter.
- 27.5.8. A listing of equipment associated with the Network or underground ducted distribution system that is inoperable or out of service at the beginning of the reporting quarter or becomes inoperable or out of service during the reporting quarter
 - 27.5.8.1. The title of the report shall include the date of the generation of the report.
 - 27.5.8.2. Each row of the report shall represent an item out of service or inoperable.
 - 27.5.8.3. Columns in the report shall include:
 - 27.5.8.3.1. A JCP&L assigned identification number
 - 27.5.8.3.2. the equipment location
 - 27.5.8.3.3. the type of equipment
 - 27.5.8.3.4. the status of the equipment (out of service or returned to service during the quarter)
 - 27.5.8.3.5. the date the equipment became inoperable or went out of service
 - 27.5.8.3.6. the number of days the equipment was or is out of service
 - 27.5.8.3.7. the date the equipment was returned to service
 - 27.5.8.3.8. if the equipment is out of service on the report date, an estimated date the equipment will be returned to service

IN THE MATTER OF THE BOARD'S INVESTIGATION INTO RELIABILITY ISSUES RELATED TO JERSEY CENTRAL POWER & LIGHT
COMPANY'S MORRISTOWN UNDERGROUND DISTRIBUTION - STAFF REVIEW OF THE SRM REPORT AND RECOMMENDATIONS -
DOCKET NO. EO11090526

Tabular Synopsis of Recommendations

5-Mar-2012

NJ BPU, Div. of Energy

Note: The priority is based on Staff's interpretation of the required work's importance. However, some items with "Immediate" or "High" priority may take longer to implement due to their nature or material/equipment requirements.

Priority	Issue	SRM and Staff Recommendation	Implementation Plan	Ordered Completion	Reporting to Board
Immediate	Preventative Maintenance practices per industry and Company standards	Continue the NWP Operational Test but increase the frequency to twice per year	Conduct a pre-summer and post summer test of all NWPs in the network on a yearly basis	Yearly cycle	Report results of each test
Immediate	Preventative Maintenance practices per industry and Company standards	The Company should complete the NWP preventative maintenance as scheduled. All corrective maintenance should be tabulated by vault number and circuit for proper tracking. This CM work should be completed within 90 days of the preventative maintenance.	Complete PMs of all Network NWPs by April 1, 2012. Then resume normal procedure. Establish process for 90 day completion and tracking of CMs resulting from PMs. Track In-op equipment in EDOA.	Initial completion by 4/1/2012 then per Company Standards	Report initial PM completion
Immediate	Preventative Maintenance practices per industry and Company standards	The electro-mechanical and analog relays on the NWPs should be upgraded to microprocessor units.	Replace analog relays as recommended	31-Dec-2012	Report monthly until completed
Immediate	Preventative Maintenance practices per industry and Company standards	Transformer oil screen & dielectric maintenance - The Company should complete the preventive maintenance as scheduled. To assure any corrective maintenance that is required is scheduled and completed; records should be tabulated by circuit, vault number, and transformer number.	Complete all required PMs of the Network transformers. Then resume normal procedure. Establish process for 90 day completion and tracking of CMs resulting from PMs. Track In-op equipment in EDOA.	Initial by 6/1/2012 then per Company Standards	Report initial PM completion
Immediate	Preventative Maintenance practices per industry and Company standards	Continue vault inspections and provide additional training for the inspectors.	Proceed per recommendations. Notify Board once training is completed	NA	Report completion of training

network system.

Priority	Issue	SRM and Staff Recommendation	Implementation Plan	Ordered Completion	Reporting to Board
High	Network system components upgrades, maintenance and monitoring	Reconnect the lightning arresters associated with Circuit 37939.	Order and install Lightning arrestors as recommended	1-Jun-2012	Report Monthly until complete
High	Network system components upgrades, maintenance and monitoring	Primary cables that were not covered with fire retardant arc proofing tape must be identified and the tape installed.	Develop inspection/repair plan and implement and review with Board Staff	31-Dec-2012	Report Monthly until complete
High	Corrective Maintenance identification and proposed follow up on actions	Prioritize and manage the network corrective maintenance work more effectively, modify business practices so that all out-of-service network equipment is logged in a data base for tracking and visibility	Provide Board with current list of outstanding CMs and planned completion date. Establish process for 90 day completion and tracking of CMs resulting from PMs. Track In-op equipment in EDOA.	5/30/12 for process, then on-going	Quarterly reports thru 2020
High	Corrective Maintenance identification and proposed follow up on actions	The Company should complete the identified corrective work that it has committed to complete during the first quarter of 2012.	Proceed per recommendations. Notify Board once completed	1-Apr-2012	Report upon completion
High	Replacement of UG oil switches in the Network	Replace remaining two oil switches with vacuum filled units.	Report to Board monthly status until complete. If not completed by May 1, 2012, an interim report should be provided to the Board detailing problems that have occurred and remediation being done to expedite the work.	1-May-2012	Report monthly until completion
High	UG Transformer PM program	Initiate a transformer PM and refurbishment program to enhance the units for better control and operation.	Proceed per recommendation in <u>Staff Analysis of the SRM Report and Recommendations</u>	1-Jun-2012	Report upon completion
High	Securing manhole covers to avoid dislodging incidents	JCP&L should continue to work with other utilities and research groups to understand all the dynamics of this problem.	Proceed per recommendation	on-going	NA
High	Securing manhole covers to avoid dislodging incidents	Initiate a pilot program various technologies for securing manhole cover in the Network. The trial should have a minimum of twelve installations. The installations should be coordinated with the earlier recommendation regarding transformer ventilation.	Proceed per the recommendations. Notify the Board of which vaults will be used in the Pilot and the varying technologies that will be incorporated.	31-Dec-2012	Report pilot program progress Quarterly to the Board until completion
High	Emergency Response Training	The earlier fire training program should be reinstated with additional training being provided regarding the underground system.	Proceed per recommendation in <u>Staff Analysis of the SRM Report and Recommendations</u>	1-May-2012	Report quarterly to Board
High	Network system components upgrades, maintenance and monitoring	Complete research of the age and manufacture information of the transformers in the network	Proceed per recommendation in <u>Staff Analysis of the SRM Report and Recommendations</u>	1-Apr-2012	Report upon completion
High	Communications	Inform Board staff of construction or other recommendation implementation field work in the Morristown area that potentially impacts the Network	Proceed per recommendation in <u>Staff Analysis of the SRM Report and Recommendations</u>	NA	On-going
High	Communications	JCP&L will report to Board Staff, Division of Energy, any incidents that occur within the network - including but not limited to events outside of the normal reporting criteria as well as any planned outages	Proceed per recommendation in <u>Staff Analysis of the SRM Report and Recommendations</u>	NA	On-going until Dec. 2014

Priority	Issue	SRM and Staff Recommendation	Implementation Plan	Ordered Completion	Reporting to Board
Moderate	Network system components upgrades, maintenance and monitoring	Fiber optic facilities must be properly secured to manhole walls and/or ceiling.	Inspect and address vault/manhole hindrances during semi-annual inspection process and address as found	31-Dec-2012	Report Monthly until complete
Moderate	Network system components upgrades, maintenance and monitoring	Once during 2012, validate the EasyPower model for the Morristown Underground network, utilizing summer loading information from spot load readings obtained on each transformer in the Morristown network during a period when the ambient temperature exceeds 90 degrees.	Perform spot load checks during June 1 and August 31 time period and evaluate against model as recommended	30-Sep-2012	Report Monthly until complete
Moderate	UG Transformer replacement or new installation	Transformers being installed to replace existing units or new installations should be equipped with load-break elbow inputs, micro-processor controlled NWP and low flammability, non-petroleum dielectric fluid	Proceed per recommendation in <u>Staff Analysis of the SRM Report and Recommendations</u>	on-going	NA
Moderate	Transformer ventilation	Perform a transformer ventilation study to compare the field conditions against current JCP&LFE standards and identify where upgrades are necessary	Results of the study should be reported to the Board and the SRM. The study should detail the number and location of vaults that do not conform to the present standard. Plans for corrections should also be submitted	1-Jun-2012	Report study results upon completion
Moderate	Multiple transformers in single vaults contrary to current FE/JCP&L standards	Conduct a vault study to determine the feasibility of construction a firewall between multiple transformers in a single vault	Proceed per the recommendation. The results of the study should be reported to the Board detailing remediation plans.	Fall 2012	Report results upon study completion
Low	Secondary fault clearing	Perform a Secondary Grid Analysis of the Network circuits to study the fault clearing characteristics and use of limiters.	Perform the Secondary grid analysis as outlined in the SRM report. Review results with SRM and Staff upon completion.	1-Jun-2012	Quarterly reports thru 2020