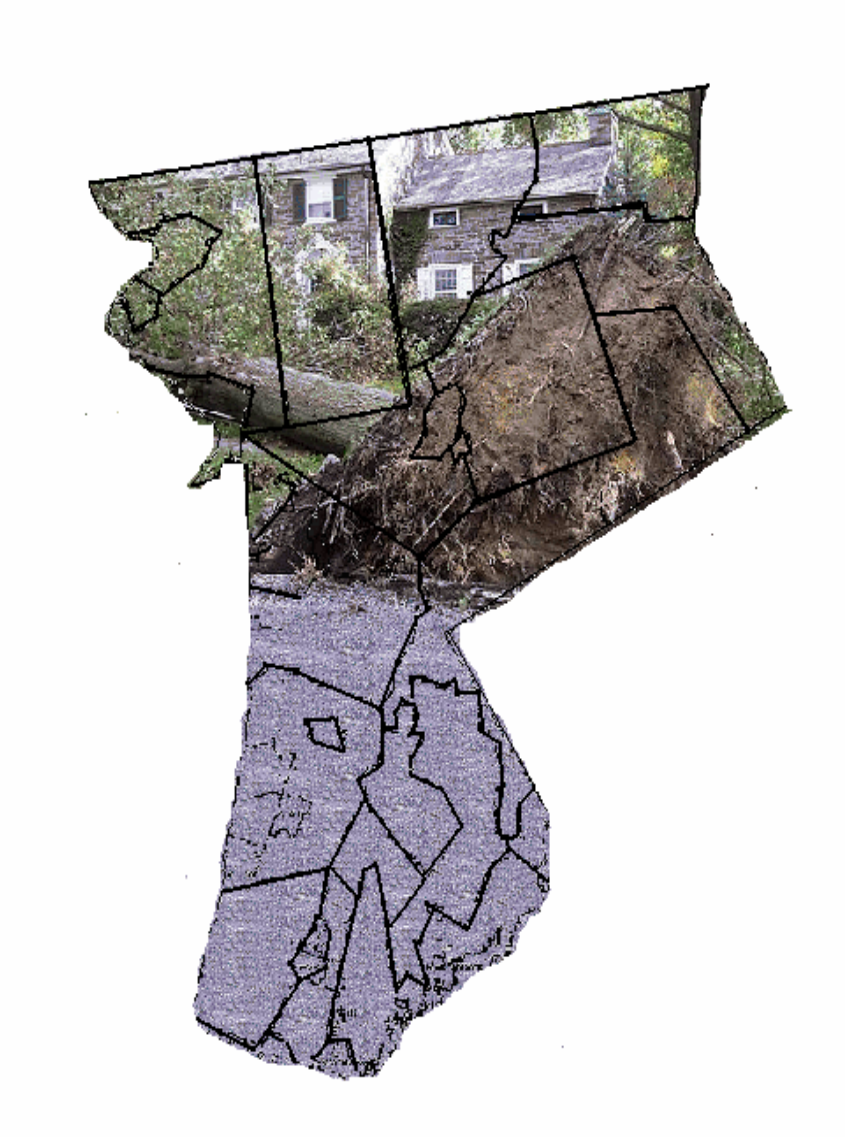
JANUARY 2006 WINDSTORM
A REPORT ON CON EDISON AND NYSEG ELECTRIC RESTORATION AND COMMUNICATION EFFORTS



NEW YORK STATE

DEPARTMENT OF PUBLIC SERVICE

JUNE 2006

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EXECUTIVE SUMMARY

On January 18, 2006, a severe windstorm swept across New York State, causing widespread electric service interruptions. The windstorm affected customers served by Central Hudson Gas & Electric Corporation, Consolidated Edison Company of New York, Inc. (Con Edison), the Long Island Power Authority, Niagara Mohawk Power Corporation d/b/a National Grid, New York State Electric & Gas Corporation (NYSEG), and Orange and Rockland Utilities, Inc. The hardest hit area was Westchester County, which is served by Con Edison and NYSEG. Restoration for these utilities took up to five and four days, respectively. This report provides Department of Public Service Staff's (Staff) assessment of the performance of Con Edison and NYSEG during their respective restoration efforts. The other utilities experienced much less damage and restored service quickly and were not part of Staff's assessment.

Over 132,000 customers experienced electric service interruptions in New York State as a result of the storm. Approximately 60,000 Con Edison customers and 40,000 NYSEG customers were affected. The length of time to fully restore service was due, in part, to the widespread nature of the storm in New York and surrounding states, which made it difficult to obtain outside assistance, and additional bad weather during the restoration period. Service to all customers was restored by January 23, 2006.

New York electric utilities experiencing service outages where the restoration period exceeds three days are required to submit reports to the Commission assessing their restoration efforts. Con Edison and NYSEG complied with this requirement; as part of their assessments, both utilities provided several recommendations on how they intend to improve performance during future storm events. Con Edison determined that it needs to provide more accurate estimated restoration times, more frequent briefings for public officials, and closer coordination with municipal officials, highway departments, and emergency response units. NYSEG identified the following areas for further improvement: signage on damage assessors'

vehicles so the public better understands the purpose for these company vehicles; the distribution of bottled water along with dry ice; internal communication and coordination of company line crews with local highway departments.

The utilities' reports, while offering useful recommendations, do not go far enough. Staff has identified additional ways in which Con Edison and NYSEG can improve their performance. For example, both utilities, and Con Edison in particular, need to make improvements in their communication procedures and ability to provide accurate restoration information. Con Edison needs to communicate much more frequently with both government officials and members of the public. NYSEG's communication effort was more effective than Con Edison's, in large part because of a daily conference call the utility held with public officials, but it also needs to provide better information on its restoration efforts. Staff commends NYSEG for the daily briefings it held with public officials and Staff will work with other companies to urge them to hold this type of briefings during other outages. Also, NYSEG needs to re-evaluate its procedures for handling downed wires and develop an improvement plan.

Because we have already entered the hurricane season, it is important that Staff's recommendations be implemented as soon as possible. The utilities should implement all recommendations by August 1, 2006, except those suggesting further study. They should report to Staff by August 1 on their progress, and then every three months thereafter, as necessary. Additionally, Staff's recommendations should be formalized through incorporation into the utilities' respective emergency plans, as appropriate. Staff will report back to the Commission if any issue arises relating to this matter.

INTRODUCTION

On January 18, 2006, a windstorm swept across New York State causing severe damage to overhead electric facilities owned by Con Edison, NYSEG, Niagara Mohawk Power Corporation d/b/a National Grid, Long Island Power Authority, Central Hudson Gas & Electric Corporation, and Orange & Rockland Utilities, Inc., and

interrupting electric service to over 132,000 customers. Westchester County, which is served by Con Edison and NYSEG, was hit the hardest with more than 60,000 Con Edison and 40,000 NYSEG customers losing service. Con Edison's restoration efforts took five days and NYSEG's efforts took four days, while the other affected utilities fully restored their customers' service within one to two days.

Commission regulations require utilities that experience emergencies where the restoration period exceeds three days to file self-assessments of their restoration efforts. Both Con Edison and NYSEG submitted reports related to this storm. Staff reviewed the reports and performed its own assessment of the utilities' storm recovery efforts. This assessment is based on a combination of factors: a review of compliance with the utilities' emergency plans, discussions and interviews with public officials, evaluation of complaint data filed with the Department's Office of Consumer Services, attendance at two Westchester County Board of Legislators' hearings, meetings with Con Edison and NYSEG management, analysis of the utilities' responses to over 100 information requests, and other salient information.

BACKGROUND

Con Edison serves about 343,000 customers in Westchester County in a territory that encompasses approximately 310 square miles. Its electric distribution system in Westchester County consists of 12 load area substations supplying 16 secondary non-network/network loads. The overhead distribution system has 75 auto-loops, 97 4kV unit substations, 91,593 poles, 26,578 pole transformers, and 15,111 radial miles of primary, secondary, and service conductors.

NYSEG's Brewster Division, the portion of its service territory that was most affected by the storm, serves about 84,000 customers in an area of approximately 585 square miles that includes parts of Westchester and Dutchess Counties and all of Putnam County. Its electric distribution system in the Brewster Division consists of 26 distribution substations supplying 76 distribution circuits. The system has 68,000 poles, 25,062 pole-top transformers, and over 2,010 circuit miles of conductor.

Prior to and at the beginning of the storm, both utility systems were operating under normal conditions with few customer interruptions. Due to heavy rains that blanketed the Hudson Valley, as well as the worsening weather forecast for January 18, 2006, Con Edison went on storm watch alert the evening of January 17. NYSEG had just finished up restoration from an earlier storm and was already in a heightened readiness posture. On the morning of January 18, the weather forecast for Westchester County was for a strong low-pressure system pushing through the area with sustained winds of 40 mph and gusts of up to 60 mph. As the severity of the storm increased steadily, Con Edison activated its Emergency Response Plan and made preparations to mobilize its workforce.

Con Edison stated that this was the worst storm it had experienced in 20 years, while NYSEG stated that it was "unusually sudden." The windstorm caused major damage to both utilities' overhead distribution systems. Residential homes and businesses throughout the County were also severely affected. Access to roadways was blocked due to fallen trees, making it difficult for emergency responders and utility crews to begin work. Downed electrical wires created hazardous conditions for local residents and emergency crews. The amount of downed wires, poles, and fallen trees was so extensive that Con Edison and NYSEG required assistance well beyond their normal line crew complement. Notwithstanding the extent of the damage, both utilities were able to restore 95% of their customers within the first 48 hours of the storm recovery effort. Restoration of service for all affected customers occurred by Monday, January 23.

COMPANY SELF-ASSESSMENTS

The reports submitted by Con Edison and NYSEG focused heavily on presenting a detailed description on the effect the storm had on their system infrastructure and a chronology of the restoration process. The reports were fairly limited in terms of self-assessment, but did provide several recommendations to improve performance. Con Edison stated it needs to provide more accurate estimated restoration times, more frequent briefings for public officials, and closer coordination

with municipal officials, highway departments, and emergency response units. NYSEG identified the following areas for further improvement: signage on damage assessors' vehicles so the public better understands the purpose for these company vehicles; the distribution of bottled water along with dry ice; and the need to improve internal communication and coordination of company line crews with the highway departments.

Staff found the utilities' recommendations to be useful, and they should be implemented immediately if the companies have not already done so. Most of the utilities' recommendations are also reflected in Staff's assessment and recommendations.

CONSOLIDATED EDISON

Electric Operations

Storm Anticipation and Initial Response

Con Edison's Westchester Electric Operations conducted a pre-storm meeting on January 17, 2006 at 7:00 p.m. to discuss the weather forecast and system status. By 7:00 a.m. on January 18, in accordance with its Emergency Response Plan, the company activated its full Emergency Response Organization. Key personnel were notified to report for storm duty. An Incident Command Structure organization was set up to coordinate the storm effort at the Westchester Control Center.

By 9:00 a.m., roughly 45,000 customers had lost their electric service. Con Edison reported peak wind speeds of 55-65 mph. Con Edison opened a Distribution Command Post to monitor and provide information on system conditions during restoration. Staff was notified by the Distribution Command Post staff of Con Edison's preparations for a full-scale storm. Con Edison's support services organization began mobilizing logistical support, including: 24-hour stores and garage operations; coordination of fuel supplies; and delivery of poles, transformers, wires, and other materials. Dry ice was secured in strategic locations, a mobile command bus was placed at one of the hotel sites in New Rochelle to assist in dispatching crews, and 1,300 hotel rooms were secured to accommodate restoration field forces.

By 1:00 p.m., approximately 9,000 additional customers had experienced electric outages. The shift manager at the Distribution Command Post contacted the New York Mutual Assistance Group,[1] as well as out-of-state utilities, to initiate discussions about possible assistance. With a concern that the windstorm would bring significant devastation to the service territory, manpower was requested from all departments of the company.

Staff concludes that Con Edison's storm anticipation and initial response efforts proceeded in accordance with the company's Emergency Response Plan. Staff has no recommendations for improvements to these efforts.

Reporting Requirements

Staff has an Electric Outage Reporting System that allows it to receive, process, analyze, and report outage data from the New York utilities quickly and in a uniform format. Staff had been monitoring scattered outages throughout the State and was in contact with Con Edison on the morning of January 18. By that afternoon, Staff requested the utilities to provide outage reports for the Electric Outage Reporting System. Specifically, Staff requested that two reports be submitted for the first day, one at 4 p.m. and the other at 8 p.m.

Staff did not receive either of these two reports from Con Edison which is unacceptable. The Electric Outage Reporting System reports provide critical restoration information. They also allow Con Edison and Staff to monitor the storm restoration efforts effectively. Without these reports, the information provided to Staff and the public is less informative and reliable than it should be.

Con Edison uses an Outage Management System to generate a report to help it manage restoration efforts and communicate internally and externally on the status of those efforts. The information for that report is extracted from the Emergency

[1] The New York Mutual Assistance Group consists of representatives from New York State utilities. Its main function is to assist other utilities in New York State to obtain available crews during emergencies.

Control System.[2] Calls from customers provide information that is used to create trouble tickets in the Emergency Control System. The information is then processed by a computerized system, System Trouble Analysis and Response, which analyzes trouble calls and identifies the number of customers affected by outages. The analysis of this data by the System Trouble Analysis and Response System is then sent back to the Emergency Control System.

The interface between the System Trouble Analysis and Response System, Emergency Control and Outage Management Systems was designed to accept transactions at a rate of 2,000 calls per hour. According to Con Edison, call volume exceeded the design level on the morning of January 18. This caused a backlog of transaction activities in the System Trouble Analysis and Response System and, in turn, delayed results being sent back to the Emergency Control System. Con Edison notified Staff, at approximately 3 p.m., that its Outage Management System was reporting unreliable information. The company resorted to manual reporting, a much slower communication process. As a result, the information reported to Staff was limited in scope and untimely.

Con Edison acknowledged the constraints of the interface between the System Trouble Analysis and Response System, the Emergency Control System, and the Outage Management System. This deficiency has prompted Con Edison to identify plans to eliminate the constraints by upgrading the system's hardware and rewriting its system software. Con Edison explained that the upgrade would allow for an increase in the number of transaction activities to 5,000 calls per hour. It also claimed that as a result of its self-assessment of this storm, it is better prepared for future increases in calls handled by the three systems.

[2] The Emergency Control System is a mainframe-based computer system used to process, track, and control trouble reports received from customers. Work orders are generated and distributed to field crews.

Recommendation:

1. ***Con Edison should proceed with its proposed improvements for the System Trouble Analysis and Response System, Emergency Control and Outage Management Systems and should test these improvements to ensure that these three systems can provide accurate outage information at much higher call volumes.***

Damage Assessment

The January 18 windstorm caused major damage to Con Edison's overhead distribution system. There were 2,414 sections of primary, secondary, and service conductors down; 148 damaged poles, and 98 damaged pole transformers. Con Edison's substations and transmission system were not affected.

Con Edison mobilized 200 damage assessors and 500 site safety representatives on January 18. The damage assessors consist of personnel who have electric system field experience. At the end of each site visit, the assessor reported his or her detailed observations to the Westchester Control Center. The information was used by supervisors to assist them in dispatching restoration crews and site safety representatives, as appropriate. Site safety representatives guarded downed wires to ensure the safety of the public until the area was made safe by a qualified worker. The site safety representatives also provided relief for local emergency responders who were guarding downed wires.

There were 34 major roadways in Con Edison's service territory blocked by downed wires and fallen trees. To clear the hazardous conditions, the company had to de-energize the circuits, cut and clear wires, and have the trees removed by company tree contractors and/or municipal highway departments. Con Edison stated that its coordination with the highway departments worked well, but could be improved. To confirm this statement, Staff interviewed several municipal highway superintendents that were involved in assisting Con Edison. Some indicated that the coordination was good, but others said it could have been better. One deputy highway superintendent indicated that he had a hard time contacting the company for assistance in de-energizing live wires on a major artery. The superintendent stated that it was not

until four days later that Con Edison finally came out to do the work. Another highway superintendent stated that the Con Edison crews seemed to be disorganized. A deputy commissioner for a local Department of Public Works said he was, "kept in the dark," by Con Edison and, therefore, could not respond to angry residents' questions about when live wires would be de-energized.

The severity of damage made it essential for Con Edison to keep the highway departments and officials abreast of where its crews were to ensure that all clean-up and restoration crews—municipal and private—could work safety. Based on the information obtained by Staff, it appears that Con Edison's coordination activities were not consistent throughout the County. Also, the extent of the communications with and the amount of information conveyed to the highway departments and officials was insufficient. Con Edison must improve both its coordination and communication efforts.

Recommendations:

2. ***Con Edison should develop and implement comprehensive plans for coordinating its storm restoration activities, including eliminating hazardous conditions, and improving communications with municipal highway departments and officials. These plans should include details on enhanced communications with the departments and officials regarding its activities.***

3. ***Con Edison should assign additional trained personnel in future emergencies to act as liaisons to municipal highway departments and officials.***

Crew Utilization/Mutual Assistance

Con Edison's declaration of a severe storm requires drawing crews from other operating areas, utilizing their contractors, and obtaining mutual assistance from other utilities and other utilities' contractors. Because this storm damaged overhead facilities, Con Edison was able to use underground, gas, and other crews to assist in the restoration effort. Table 1 summarizes the crews used in this and two earlier storm events.

Table 1: CREWS USED DURING STORM EVENTS			
	January '06 Storm	March '97 Storm	October '96 Storm
Con Edison Crews	222	274	254
Outside Crew Support	261	274	183
Total Field Crews Used	**483**	**548**	**437**

Overhead line crews and crews that do troubleshooting relieve site safety representatives by making an area safe from energized downed wires. A total of 296 overhead crews made repairs to the overhead facilities, and 35 troubleshooters performed quick restoration work. Additionally, 107 ladder line crews[3] worked on service wires and 45 tree-trimming crews removed trees and limbs that fell on Con Edison facilities.

As noted above, this storm affected many areas of New York State, and many utilities suffered damage to their overhead electric facilities. Therefore, only National Grid of the New York Mutual Assistance Group was able to initially provide line crews to assist in Westchester County. The first request for mutual assistance for 50 crews occurred around 3 p.m. on January 18. National Grid and Allegheny Power responded with a total of 46 crews. Con Edison also requested aid from utilities in surrounding states. The out-of-state utilities held their crews until it was clear that the windstorm would not affect their service area, at which time they did provide assistance. Other mutual assistance crews were mainly requested later on January 18 and also on January 20. Communication to receive additional crews, however, was continuous throughout the windstorm and restoration period. Mutual assistance crews arrived beginning on January 19. By the conclusion of the storm restoration, 261 mutual assistance/contractor crews had arrived from seven utilities and seven contractors.

The 483 total crews used for this storm appears to be reasonable based on prior experience. Considering the number of company-wide qualified line crews, however, and as shown in Table 1, it appears the number of company crews assigned

[3] Ladder line crews at Con Edison are distinct from normal line crews and cannot work on primary voltage lines.

to this storm from other operating areas could have been greater. Staff recommends in the future Con Edison should maximize the use of its own crews because the number of available mutual aid and contractor crews fluctuate and are not as dependable.

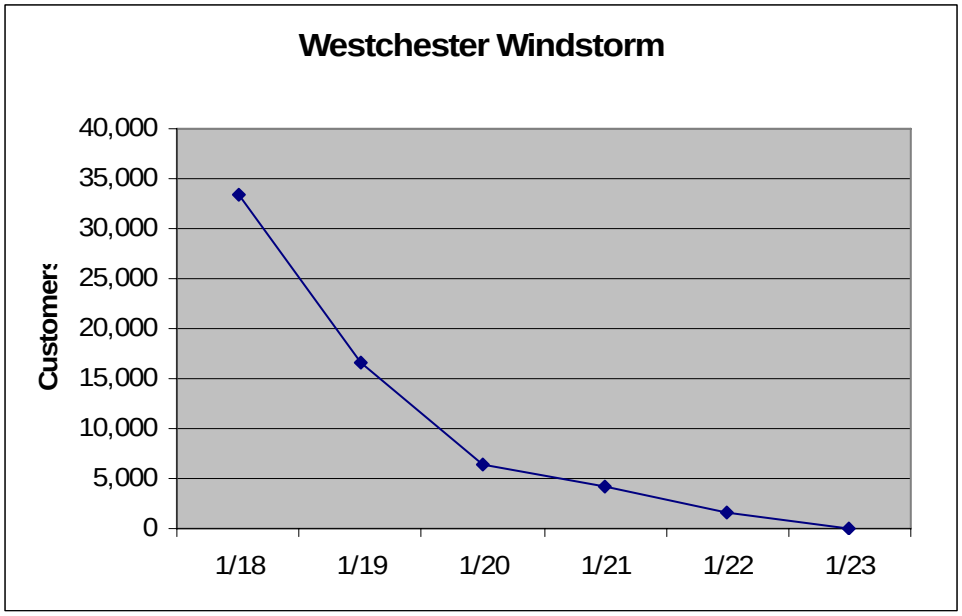
Recommendation:

4. ***For storm restoration, Con Edison should make optimal use of its own field crews from other operating areas.***

Restoration

Con Edison concluded its restoration efforts on Monday, January 23, five days after the storm. Of the 342,909 electric customers in Westchester County, 61,486 customers lost service. Figure 1 below shows customers returned to service, by day.

Figure I: Customer Restoration Curve



Con Edison stated that its first concern was to clear downed wires, clear blocked major roadways, and gain damage information from damage assessors. Primary lines affecting the largest number of customers were restored first, followed by the secondary system, and individual service lines. Based on Staff's review of Con Edison's emergency plan and customer outage cases, Con Edison prioritized its restoration in accordance with its Emergency Response Plan.

Another storm hit Westchester County on Saturday, January 21, producing 2,500 more customer outages. At that time, most of the customers still out were in small blocks or were individual services. The bad weather added to the damage, increased customer outages, and extended the recovery effort. Since service was restored for the majority of the customers by January 20, the remainder of the outage period was dominated by restorations to individual residential customers. The restoration times were greater for these individual customers because of the sheer number of service connections that had to be replaced or reconnected.

Staff assessed a sample of the company's work orders and found that they contained frequent changes. Such changes can create problems in managing restoration crews and ensuring that the restoration proceeds timely and efficiently. Estimated times of restoration were deleted from some work orders, replaced with invalid times on others, and missing entirely from yet others. Dispatch times for mutual assistance crews were often incorrectly recorded. Instead of using the time assigned to a specific job, the time of the beginning of the mutual assistance shift was used. This created the erroneous impression that the job had been assigned, crews had been dispatched, and work had commenced. These changes created incorrect restoration time estimates that were provided to customers.

Con Edison needs to manage its work process better so that information is correctly and consistently recorded on its work orders and input into its the System Trouble Analysis and Response System, Emergency Control, and Outage Management Systems. It also needs to improve the communications between field personnel and the Westchester Control Center so that work assignments are clear, the duration of restoration activities are properly recorded, and the restoration effort proceeds efficiently. With more accurate inputs, Con Edison will be better positioned to provide more accurate restoration time estimates to its customers, Staff and others.

A question was raised by the Westchester County Board of Legislators as to whether there were performance standards for utility response following a storm. Staff indicated that there are currently no performance standards for storm response in New York State, and that it is not aware of any such standards for major storm events in other parts of the country. Staff will further investigate the industry to determine if there

are any mechanisms in place or that can be developed to measure restoration performance following a major storm. This evaluation should be useful in further clarifying Staff's expectations for utilities' emergency planning, preparedness, and plan execution.

The Westchester County Board of Legislators also asked whether advanced metering would have allowed Con Edison to obtain better outage information to facilitate restoration efforts. Since Con Edison is considering widespread use of automatic meter reading technology, Staff believes it would be useful for the company to perform such an evaluation.

Recommendations:

5. ***Con Edison should review its procedures for preparing work orders following major storms to ensure that they are managed effectively, including providing proper training and supervision.***

6. ***The company should review and analyze industry practices for estimating restoration times. The analysis should include an evaluation of how advanced metering might have been used to improve information available on customer outages. Based on this analysis, and a comparison with its own practices, Con Edison should assess and implement the best practice processes for its system.***

Customer Service Operations

Communications

As part of its review, Staff evaluated Con Edison's communications efforts with its customers, government officials, and the media. Staff also reviewed the company's efforts to procure and distribute dry ice, and evaluated its interactions with customers who use life-support equipment.

During the outage, customers expected that Con Edison would be able to provide them with useful and accurate information about when their power would be restored. Customers wanted this information so they could make critical decisions about whether they should stay in their homes; actions they should take to protect their

homes from damage or vandalism; care for people who may be sick, elderly, young, or have special needs; and, how best to take care of family pets. Customers were upset and frustrated that Con Edison provided incomplete, inaccurate restoration information or could not provide any information about restoration times.

In the comments provided to Staff by the Westchester County Board of Legislators, many customers stated that they attempted to contact the company by telephone but spent extremely long periods of time on hold. Other people visited the company's web site only to discover that there was no restoration information posted on it. Others were more understanding about having to wait for extended periods of time to speak with a customer service representative; but they were infuriated that Con Edison was not able to give restoration times so customers could make appropriate sleeping arrangements for themselves and their families. One customer complained that when she called the company during the very early morning hours of January 19 to report that her home had no electricity and asked what she should do to keep her young children warm; the customer service representative allegedly stated they should cuddle. Staff learned of other situations where customer service representatives provided ill-timed or insensitive responses. These instances are an indication of poor training and supervision.

With respect to the distribution of dry ice, Con Edison established three locations – New Rochelle, Cortland, and Yonkers – and maintained them for three days. At the sites, the company had instruction sheets (in English and Spanish), and company representatives were available to answer questions and explain the use of the ice. Approximately 1,000 pounds were distributed. Information about availability and distribution sites was made available to customers via local media and the company's toll-free telephone number. Some customers attempted to find information about the locations of dry ice distribution on the company's web site, but none was posted.

Customers may not be aware of how the company assesses the extent of the outages and determines the priority of restoration of service. Clearly, customers are perplexed about why a crew may be in their area but not working on restoring service.

The company should make customers aware of the process it uses to determine the order of restoration of service. It is important to include public officials in this educational process because they also interface with customers.

During major storms, customer calls can assist the company in identifying the locations and extent of the outages. However, customers may not be aware of the importance of their assistance during and after major storms in identifying where outages are and of dangerous situations like downed live electric wires. The customers should be made aware that their calls help determine the order to dispatch crews and restore service, and they provide useful information.

Con Edison must improve the quality and quantity of information provided during and after outages. Most importantly, the company must ensure that the estimated time to restore service to specific areas and customers is as accurate as possible. The company should also employ all available means for disseminating up-to-date information, including press releases, conference calls with the media and public officials, press conferences, recorded messages on its phone system, conversations between customer service representatives and individual customers, and frequent updates on its web site. The notices on the web site should be highly visible, such as a running banner or a pop-up box, so that those who are able to log on to the web site will be immediately alerted to the information.

The company has mobile command center vans which, in the past, have been dispatched to the affected parts of its service territory. The purpose of the mobile command centers is to have company personnel available on-site to meet with the public. The company did not use its mobile command center for this purpose during the restoration period, although it could have done so. In future outages where the restoration period is expected to exceed one day, the company should dispatch one or more of its mobile command center vehicles to central locations in affected areas (e.g., town halls, shopping centers) and/or other areas where dry ice is to be distributed. Wherever the location, they should be publicized in the same manner as is the availability of dry ice.

Recommendations:

7. ***The company should review its procedures for training and supervising customer service representatives to ensure that proper sensitivity is used when dealing with customers.***

8. ***The company should take measures to better communicate emergency information to its customers and public officials. Actions should include oral, written, and web site communications that will:***

   - ***Provide restoration prioritization information;***
   - ***Provide restoration estimates;***
   - ***Provide emergency actions for customers to take (safety and personal protection);***
   - ***Provide locations and times for dry ice distribution;***
   - ***Enhance its present educational efforts so that customers are aware that their calls to the company can help to pinpoint the extent and location of an outage; and***
   - ***Develop a more comprehensive program to educate citizens and customers on the dangers posed by downed electric wires.***

9. ***The company should, in future outages where the restoration period is expected to exceed one day, dispatch one or more mobile command center vehicles so that company personnel are available on-site to meet with customers. The company should include information about the location of the mobile command center vans in press releases, in information provided to customer service representatives, in briefings with public officials, and with other communications to the public.***

Customer Call Center

During and following the storm, over 62,000 customer calls were received by Con Edison. During peak daytime call periods, over 280 customer service representatives were in the Call Center. They answered nearly 95% of the calls, and of those calls, 70% were answered within 30 seconds. Staff reviewed the statistics of the Call Center and found them to be within acceptable levels of performance for all periods (with call answer rates of 90% or better) except Saturday, January 21, 2006, when there

was an insufficient number of representatives during most periods of the day. As a result of the inadequate staffing on January 21, the company's call answer rate was under 50%. Such a low answer rate is unacceptable.

The company reported that weekend staffing levels are routinely lower than weekday levels, commensurate with call traffic. On Saturday, January 21, staffing levels were not increased because of the company's forecast on Friday, January 20, that most customers' service would be restored that same day. Because of the continuation of customer outages through Saturday, actual call volumes on Saturday were significantly higher than anticipated. The company should have recognized this change in call volume either before or early on Saturday and brought in additional staff. Based on the company's projections on Saturday that service outages would extend into Sunday, January 22, the company called in additional personnel to increase Call Center staffing on Sunday. As a result of that staffing increase, the call answer rate on Sunday rose to 90%. Staff' concludes that the company handled its inbound call traffic adequately, except for Saturday. During future outages, Con Edison should strive for a 95% call answer rate on each day of the outage.

Life Support Equipment Customers

Commission regulations require that the company contact each life support equipment customer during each storm event. The guidelines under the Customer Operations Corporate Event Response Plan call for timely and accurate information to be provided to life support equipment customers. The Plan requires company personnel to undertake a review and identification of life support equipment customers, and establish the necessary communications when a storm is expected to become severe.

On January 18, at 7:55 a.m., the company began notifying life support equipment customers of severe weather conditions causing outages and recommended that they go to a hospital, call 911, or make other arrangements to ensure their well being, if need be. The customers were also provided with a priority toll-free number to call to speak to a customer service representative.

After the initial contacts, the company made two additional sets of calls to life support equipment customers using its outbound voice response system. In all, 522 life support equipment customers were contacted. Thirty-seven of these customers responded that they were without power. Seventy-six customers requested updates and assistance, which the company provided.

Staff's review of Con Edison's implementation of the Corporate Event Response Plan during this outage indicates that Con Edison adequately contacted and responded to the needs of its life support equipment customers. Therefore, Staff has no recommendations for improvements to these efforts.

Media Relations

Con Edison only issued two press releases during the five-day outage. The first release was issued on Wednesday, January 18 at 4:49 p.m. and the other on January 19 at 5:10 p.m. Both releases included information that crews were hard at work restoring service, addressed important safety issues, and identified a toll-free telephone number for customers to call to report any downed wires. The January 19 release included a statement that the company was working to restore service to a majority of customers by Friday evening. Issuing only two press releases for the entire restoration period was not sufficient. In contrast, NYSEG issued four press releases each day.

The media began to contact Con Edison about 6:30 a.m. on January 18 for information; these contacts continued through January 22. While the company stated that it responded to inquiries received from the media, it did not hold any press conferences during the restoration period.

The company's actions regarding the media appeared to be limited and mostly reactive. Since much of the public relies on the media for information on restoration progress, Con Edison needs to be more proactive in working with the media and disseminating information during future events.

Recommendation:

10. Con Edison should provide more frequent press releases and hold news conferences during restoration periods.

Contact with Public Officials

Staff reviewed the lists of public officials the company contacted during the days that service was being restored to customers. In addition to County Officials and emergency service personnel throughout Westchester County, the list includes various City, Town and Village officials. The company's list, however, is not a comprehensive list of public officials at all levels of government in Westchester County.

The company stated that members of the State Assembly and Senate generally do not want to be contacted during emergencies. During other outages in Con Edison's service territory, however, the company has routinely contacted members of the Assembly and Senate whose districts were affected. Staff contacted members of the Assembly and Senate who represent Westchester County as part of its review. The majority of these officials were not contacted by Con Edison during the outage, but many reported that they contacted the company. Once the contact was initiated, the company continued its dialogue with these officials. According to several of the officials Staff spoke with, Con Edison met with them to discuss how to improve communications during outages. These officials provided some specific suggestions for improvements and changes for future emergencies – some dealt with more frequent communications, others with the difficulties customers had in getting more specific restoration information.

Each operating division compiles its own list of public officials to contact during system events. This practice has resulted in inconsistent lists of public officials for the various operating divisions. The company should use the same set of procedures in all outages and should be consistent in who is contacted. Moreover, as with some of the other areas discussed previously, the company should be proactive, not reactive. That is, the company's contact list should be expansive in scope and should include all elected officials at all levels of government whose districts are affected. The company should be forthcoming with information for these individuals and not wait for them to make the initial contact.

Con Edison's self-assessment acknowledged that improvements should be made to provide more frequent and closer coordination with municipal officials and provided suggestions for doing so. Staff agrees with those suggestions and offers

some additional improvements. Rather than discussing storm-related issues separately with public officials, the company should conduct daily (or more frequent, if appropriate) conference calls with officials to share the most recent information about the progress to restore service and to answer questions. By having these briefings, the same information will be presented to these officials at the same time.

Recommendations:

11. ***The company's contact list for the provision of information should include all elected officials at all levels of government (municipal, county, and state), as well as all appropriate municipal officials (e.g., police, fire, highway, public works).***

12. ***The company should provide daily or more frequent updates and conference calls for municipal and public officials, as appropriate.***

NEW YORK STATE ELECTRIC & GAS

Electric Operations

Storm Anticipation and Initial Response

When the storm hit on January 18, NYSEG was already in the service restoration mode due to a storm that came through its Brewster Division on January 14. Twenty-four thousand customers were affected by the first storm; all but 120 customers had been restored by the early morning of January 18. Many of the customers that were affected by the first storm were also affected by the second one. As a result, NYSEG's corporate storm room and the Brewster Division storm room remained open. There were no major operational changes in preparation for the windstorm other than regrouping and staffing for two shifts. The System Emergency Director continued to monitor the weather in anticipation of increased winds and gusts. If needed, the Director was prepared to call upon crews from other divisions or request mutual assistance from the New York Mutual Assistance Group.

The Call Center continued to answer customer inquiries around-the-clock. The Special Contacts Coordinator verified contact lists for nursing homes, hospitals, fire departments, and other emergency facilities. An estimate for dry ice distribution was

obtained and arrangements for delivery to assigned locations were made. A list of life support equipment customers was reviewed for completeness and accuracy. Emergency generators were made available had the need arose.

Staff concludes that NYSEG's storm anticipation efforts were followed in accordance with its Electric Utility Emergency Plan (Emergency Plan). Staff has no recommendations for improvements to these efforts.

Reporting Requirements

NYSEG submitted its first report to Staff on January 18 at 4 p.m., and it submitted its last report on January 21 at 12 p.m. The reports were provided in accordance with Staff's requirements.

Damage Assessment

NYSEG uses engineers, technicians, and other personnel to perform damage assessment, while its line crews perform the restoration work. The former drive along circuit routes and mark damaged locations on system maps. If they find a hazardous situation, they call in to the Damage Assessment Coordinator for further instructions. The damage assessment effort was satisfactory, but the company indicated that it could improve the effort if proper signage was used for vehicles performing damage assessment duties. This would minimize confusion by customers concerning restoration expectations. Staff concurs with this suggestion.

Recommendation:

1. ***NYSEG should place appropriate signage on all vehicles used for damage assessment purposes during outages and other events.***

Crew Utilization

NYSEG was able to use crews from its other divisions, including its sister company, Rochester Gas and Electric Corporation, to assist in the restoration effort. NYSEG did not request mutual aid from other utilities.

The Brewster Division normally has 20 line crews. After the first storm hit on January 14, 40 crews were obtained from other divisions and private contractors. After the second storm hit on January 18, 35 additional company and contractor line

crews were acquired. These additional 75 line crews were used until the end of the restoration effort. Tree clearing was supported by 17 tree contractor crews. The overall size of the work force employed by the company appears comparable to past restoration efforts of a similar magnitude.

NYSEG's self-assessment revealed that it could have done a better job of coordination between its line crews and those of the various highway departments. Staff contacted several superintendents in NYSEG's Brewster Division. The feedback Staff received was generally positive, but some officials noted that NYSEG could have been more responsive to their requests for assistance and information. Accordingly, there appears to be some opportunity for improvement.

Recommendations:

2. ***NYSEG should develop and implement comprehensive plans for coordinating its storm restoration activities, including eliminating hazardous conditions, with municipal highway departments and officials. These plans should include details on enhanced communications with the departments and officials regarding its activities.***

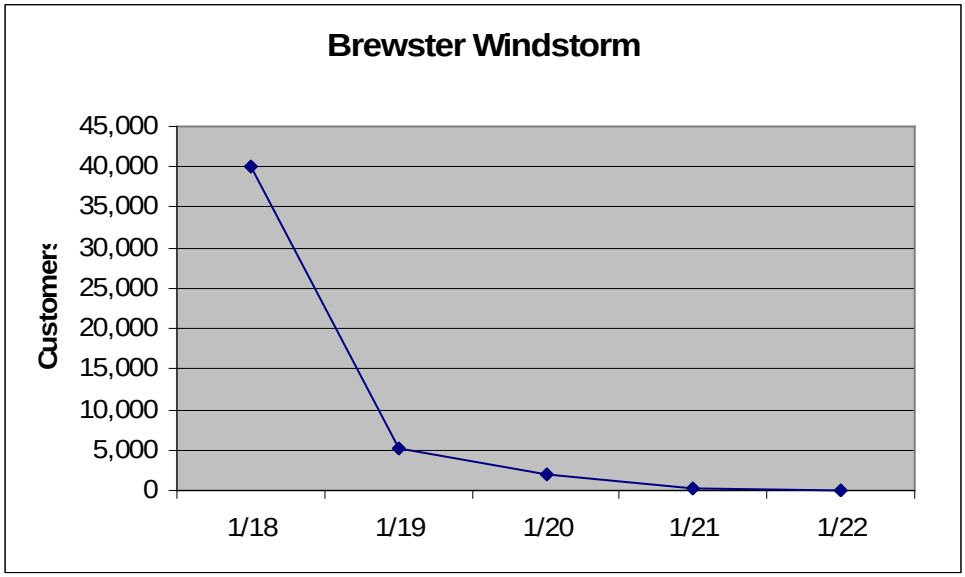
3. ***NYSEG should identify ways to improve its communications with municipal highway departments and officials to ensure that they receive accurate and timely information.***

Restoration

As previously noted, on January 18, NYSEG had been in a restoration mode because of an earlier, albeit less severe, storm. NYSEG reported that within the area served by the Brewster Division, there were 70 mph peak winds and approximately 40,000 of its 83,944 customers lost power. At one point, twenty circuits lost all power, with 80 transformers and 15,000 feet of conductor requiring replacement. Following the

wind storm, all service was restored by January 22. Figure 2 below shows the number of customers whose service was restored throughout the wind storm by each day.

Figure 2: Customer Restoration Curve



Staff's assessment indicates that NYSEG staffed the restoration effort adequately. It appears that the restoration length for this storm was similar to past storms causing similar damage. Staff concludes that NYSEG followed proper restoration priorities as outlined in its Emergency Plan. Staff has no recommendations for improvements to these efforts.

Downed Wires

On January 19, an individual who lived alone in a house on Hook Road in the Town of Bedford was found electrocuted in his backyard. According to police and NYSEG reports, the victim had apparently been investigating a power problem and somehow came in contact with both phases of a 4,800 –volt primary line that a large tree, in falling, had detached from the transformer serving his home. NYSEG has no record of any calls reporting trouble at the victim's location, except for the fatality call from the police. Apparently, the victim had called an electrical contractor; when the contractor arrived at the victim's home, he did not get an answer at the door.

The right-of-way along the spur line on the victim's property was well trimmed. In many cases during a storm, and such is the case here, when a large tree falls, no amount of trimming, short of clear cutting, could prevent it from taking out the line. Because there were no witnesses, Staff does not know the exact circumstances surrounding this incident and cannot offer any opinion as to whether it could have been avoided through some action by NYSEG.

On the morning of January 20, a yellow labrador retriever was electrocuted after coming in contact with a downed 4,800-volt primary line on Baylis Lane in Bedford. According to NYSEG, seven phone calls from members of the public came in regarding low hanging or downed wires on Baylis Lane, but it does not have any record of receiving either a police or fire department call regarding that location. NYSEG's records indicate that the first call came in at 9:38 p.m. on January 18, and the last call, which reported a deceased dog, came in at 9:28 a.m. on January 20. The company stated that the first time it responded to the site was in response to the last call, after the dog had been electrocuted.

While NYSEG did not immediately respond to the calls it received, Staff understands that the local police and/or volunteer fire departments did and barricaded the area with yellow tape. The police report related to the incident indicates that the fire department called the incident in to NYSEG.[4] The report went on to note that the tape was removed from the road by persons unknown, with some tape remnants still wrapped around several trees when police officers responded to the report of the deceased dog. Apparently, there was no individual assigned to guard the wires in this situation.

The safety procedure in NYSEG's Emergency Plan states in part:

> Upon receiving reports of downed conductors or poles, Company personnel are dispatched to secure such areas or to relieve any civilians or police officials who have been asked to temporarily stand guard. To protect the public, streets are barricaded when necessary. Lights or flares are placed to identify areas that may be a hazard. During repair efforts, Company employees act according to established safety codes.

[4] Staff was unable to verify this information with the fire department involved.

NYSEG indicated that a productive relationship has been established over the years with the local fire and police departments and that there are special non-public NYSEG telephone numbers they can call. With respect to downed wire calls, NYSEG places higher priority on calls from fire and police departments than customer calls.

Based on the information related to this matter, Staff concludes that NYSEG did not comply with its written safety procedures or properly respond to this matter. It was very fortunate that a person did not also wander into this line. The "barricade" of yellow tape was helpful to warn the public of the downed wires, but it was not sufficient to adequately protect the public from the dangerous condition.

With any significant restoration effort, prioritization of downed wires calls seems unavoidable. In this event, NYSEG reported 1,119 cases of power lines on the ground in its Brewster Division. Whenever there is a question of safety or expedience of restoration, however, the choice should be safety. NYSEG should place greater emphasis than it already does on safety to the public during storm restoration, even if it means increasing personnel resources.

Additionally, these incidents demonstrate the importance of providing information to the public about the danger of downed wires. Although NYSEG included warnings about this danger in each of its press releases, these tragedies highlight the need for NYSEG, and all other utilities, to increase their efforts to educate the public to stay away from downed wires and that downed wires do not necessarily have to be sparking to be energized. It is also possible for de-energized lines on the ground to be re-energized during the restoration process. Staff understands that NYSEG will be conducting at least one high-profile televised demonstration for Westchester County citizens this summer. NYSEG should perform a similar campaign throughout its service territory.

Recommendations:

4. ***NYSEG should develop a more comprehensive program to educate citizens and customers on the dangers posed by downed electric wires. NYSEG should report to Staff on its specific plans throughout the company for educating the public on the danger of downed electric wires.***

5. ***NYSEG should perform an in-depth evaluation with recommendations for improvement, company-wide as well as for the Brewster Division, on how it handles downed wires in storm restoration scenarios.***

The evaluation report should include but not be limited to:

- ***Current wire down practices;***
- ***Completeness and scope of downed wire procedures;***
- ***Accuracy of wire down procedures (e.g., danger of non-arcing downed wires);***
- ***Consistency of downed wire procedures;***
- ***Prioritization of response;***
- ***Timeliness of response;***
- ***Use of additional personnel to act as wire guards;***
- ***Communication and coordination with local police and fire departments;***
- ***Role and level of "make safe" crews; and***
- ***Effective public outreach and education regarding electricity wire dangers.***

Customer Service Operations

Communications

Most customers who contacted NYSEG asked when service would be restored. As discussed previously, customers want this information so they can make important decisions about safeguarding their families and homes. While NYSEG kept the public informed through numerous press releases, it could have expanded its communications efforts by posting information on its web site about the outage. NYSEG should supplement its communications efforts by providing information to its customers about the restoration of service through the posting of notices on its web site. The notices should be highly visible, such as a running banner or a pop-up box, so that those customers who are able to access the web site will be immediately alerted to the information.

The company set up distribution centers for dry ice in several affected areas throughout the Brewster Division. Sites and times of distribution were identified in press releases. The company had representatives available at each site to distribute the dry ice and explain how it should be used. Approximately 23,000 pounds of dry ice was distributed. Staff was not able to find information about dry ice on the company's web site during the days the dry ice was being distributed. The company should include this information, along with the other storm restoration information, on its web site. The company also distributed drinking water at the same locations where dry ice was distributed. Staff commends the company for making drinking water available to its customers.

Staff found that many customers are not aware of how NYSEG assesses the extent of the outages and determines the priority for restoring service. Customers may be confused when they see a crew from the company in their neighborhood, but the crew is not working to restore service. While there is information in the company's Weathering Storm Emergencies brochure about the order in which the company restores service, Staff suggests that the company expand its present educational efforts to make customers and public officials aware of the restoration process. It is important to include public officials in this educational process because they also interface with customers.

During major storms, customer calls can assist the company in identifying the locations and extent of the outages, and if there are dangerous situations, like downed electric wires. Customers should be made aware that their calls can provide the company with important and useful information. Customers should be educated about how they can help the company with their calls.

Recommendations:

6. ***The company should improve communications with its customers by:***
   - ***Posting highly visible notices about restoration, such as a running banner or a pop-up box, on its web site;***
   - ***Posting information about locations and delivery times for dry ice distribution on its web site;***
   - ***Making customers aware that their calls can provide the company with important and useful information; and***

- ***Developing a more comprehensive program to educate citizens and customers on the dangers posed by downed electric wires.***

7. The company should expand its present efforts to educate customers and public officials on the process NYSEG uses to determine the order of restoration of service.

Customer Call Center

NYSEG allocated adequate staff to answer incoming customer calls during normal business hours (7:00 a.m. – 7:00 p.m., Monday – Friday). The peak daily call load of 28,507 occurred on January 18, 2006. Seventy-nine percent of those calls were handled by the Interactive Voice Response by giving restoration times or allowing a customer to enter information that would be used to create a trouble ticket. On average, there were 47 Call Center Representatives available to handle the remaining incoming calls. During and following the storm, the Commission's Office of Consumer Services received eight customer contacts related to the storm outage.

NYSEG's Emergency Plan provisions related to its Call Center operations adequately addresses all aspects of customer contact activity. In addition, the company's Call Center performance data indicates that NYSEG adequately staffed its Call Center during the storm event. Therefore, Staff has no recommendations for improvements to these efforts.

Life Support Equipment Customers

The company contacted all 120 life support equipment customers at least twice a day until the power was restored. Estimated restoration times were given as they were determined. The company indicated that it provided information to 17 customers who asked for assistance. Staff has no recommendations for improvements to these efforts.

Media Relations

NYSEG issued four press releases each day during the outage. The releases provided the number of customers without service and their general locations, overall restoration times, the numbers of customers whose service had been restored,

safety reminders about downed lines, and a toll-free telephone number for customers to call to report any emergencies. Most releases also had other important information, including the locations of shelters, a suggestion to call the Red Cross to learn about the services available through that organization, and dry ice distribution. Some releases had information about the company's assessment of the storm damage through the use of helicopters, the types of repairs that were done, and the number of crews – both the company's and those from contractors – working to restore service. At the end of many releases was a statement about when the next update would be distributed. None of the press releases, however, were posted on the company's web site.

Recommendation:

8. The company should post its press releases about storm restoration on its web site.

Contact with Public Officials

Beginning January 19, the company held daily conference call briefings for public officials. At the initial briefing, the company provided a dedicated telephone number for officials to call if there were questions, issues, or concerns regarding the restoration efforts. The daily briefings provided updates about restoration and provided an opportunity for the officials to ask questions. The questions asked and the issues raised included how the company prioritized restoration work, the number of live or downed wires and their status, why priority was not being given to restore service to customers who had been without service for the longest period of time, and concerns regarding changing estimates of restoration times. NYSEG should be commended for holding these daily briefings – it should serve as a model for other utilities.

Staff contacted several public officials to get their opinions about the company's communications. Generally, the officials were complimentary about the frequent contacts they had with the company, but they were critical of the inaccurate restoration times provided and that there was no information on the company's web site about restoration efforts. Recommendations to address these issues are set forth above.

CONCLUSION

Based on a thorough analysis of the information developed, Staff has identified a number of areas in which Con Edison and NYSEG need to improve their storm recovery performance. Both utilities need to make improvements in different facets of their communication practices during storm events. During a major storm event, local governments and the general public need to make very basic decisions affecting the public's and individuals' well being and for the protection of property as well. The most relied upon source for information regarding service restoration are the electric utilities. When critical information is not forthcoming in a timely manner, widely disseminated, or accurate, inefficiencies in the restoration process are created and public frustration unnecessarily increases.

Con Edison needs to communicate much more frequently and accurately with both government officials and members of the public, fully utilizing all of its communication assets including its websites and public media channels. Con Edison also needs to improve its processes and procedures for developing accurate information on the nature of the storm damage and the estimation of restoration times. Con Edison should also commit one or more of its mobile command center vehicles to its storm recovery effort to better enable communications with the public. NYSEG also needs to provide more information on the progress of its restoration efforts. Moreover, it must re-evaluate and improve its procedures for handling downed wires.

Because we have already entered the hurricane season, it is important that Staff's recommendations be implemented as soon as possible. The utilities should implement all recommendations by August 1, 2006, except those recommendations requiring further study. Con Edison and NYSEG should report to Staff by August 1 on their progress, and then every three months thereafter, as necessary. Additionally, Staff’s recommendations should be formalized through incorporation into the utilities’ respective emergency plans, as appropriate.