STATE OF CONNECTICUT

DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION
PUBLIC UTILITIES REGULATORY AUTHORITY
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DOCKET NO. 11-09-09 PURA INVESTIGATION OF PUBLIC SERVICE COMPANIES' RESPONSE TO 2011 STORMS

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By the following Directors:

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DECISION

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DECISION

I. INTRODUCTION

A. EXECUTIVE SUMMARY

In this Decision, the Public Utilities Regulatory Authority, by virtue of its regulatory authority and oversight of the provision of safe, adequate, and reliable service of Connecticut utility companies, concludes that The Connecticut Light and Power Company's performance in the aftermath of the 2011 storms was deficient and inadequate in the areas of outage and service restoration preparation of personnel, support of its municipal liaison program, development and communication of restoration times to customers, and overall communication to customers, other service providers and municipalities, as to warrant regulatory sanction. In this Decision, the Public Utilities Regulatory Authority also concludes that because of The Connecticut Light and Power Company's failure to obtain adequate assistance in advance of the October 29, 2011 storm, its response to that storm was deficient. Because of The Connecticut Light and Power Company's failure to adequately fulfill its duties imposed by law and to adequately and suitably provide for the overall public interest with regard to these particular areas of performance, the Public Utilities Regulatory Authority establishes in this Decision, a rebuttable presumption that The Connecticut Light and Power Company should have imposed on it, an appropriate reduction to its allowed return on equity in its next ratemaking proceeding as a penalty for poor management performance and to provide incentives for improvement. In addition, in conformance with the merger agreement between Northeast Utilities and NSTAR, the Public Utilities Regulatory Authority retains further jurisdictional approval for recovery of an appropriate level of 2011 storm costs at the time The Connecticut Light and Power Company seeks recovery of any such costs. Similarly, the Authority will exercise its regulatory oversight for the recovery of 2011 storm related costs at the time The United Illuminating Company seeks the recovery of those costs in rates.

In considering appropriate reduction to allowed returns on equity in forthcoming ratemaking proceedings and in exercising its jurisdictional approval for recovery of appropriate 2011 storm costs, the Authority will consider and weigh the extent to which CL&P has recognized its shortcomings and taken concrete and measurable steps to embrace the need for aggressive, extensive restructuring of both its attitude toward storm management and establishment of new practices for execution of future storm response.

Through the Orders in this Decision, the Public Utilities Regulatory Authority requires various enhancements to the restorative capabilities of the utility companies in order that they can better face major outage events. The Public Utilities Regulatory Authority requires The Connecticut Light and Power Company to develop a heightened state of readiness, and document that such a state exists, including assessment of the company's own line workers, line workers from sister companies, contractors, a statement of the mutual aid assistance organizations to which the company belongs, and the resources likely available from those organizations. Such heightened readiness

will focus on resources likely to be available during the first 48 hours of a major storm event to assist in efforts to ensure public safety. The Public Utilities Regulatory Authority will also adopt many of the findings and recommendations of its consultant, The Liberty Consulting Group, regarding preparation, restoration, and communication.

Additionally, the Public Utilities Regulatory Authority reviewed the impact of the 2011 storms on the providers of telecommunications services, cable television, gas, and water companies of Connecticut. While, overall, it was determined that these industries were less affected than the electric industry, and for the most part maintained adequate service during the overall outages, the Public Utilities Regulatory Authority makes recommendations in this Decision and creates Orders to improve service reliability for future events. Such enhancements that are recommended include, but are not limited to, requiring the creation of better communication and the creation of webpages by various companies that contain storm and other emergency information for customers in Connecticut.

The Public Utilities Regulatory Authority also recognizes the efforts of all the line crews, restorative personnel, and other personnel including federal, state, and town officials, and other volunteers, who devoted their best abilities, working in the restoration effort during the 2011 storms, and for which Connecticut citizens should be extremely grateful. Through more disciplined and thorough leadership and communication, their collective work could have been more effective and efficient.

B. BACKGROUND OF THE PROCEEDING

The State of Connecticut was struck by two severe storms in 2011, Tropical Storm Irene on August 28, 2011 (Tropical Storm Irene), and the October Nor'easter on October 29, 2011 (October Storm; collectively, 2011 Storms) resulting in total peak customer outages for The Connecticut Light and Power Company (CL&P) and The United Illuminating Company (UI) of 815,000 for Tropical Storm Irene and 832,000 for the October Storm. Many customers also experienced a loss of cable television and telecommunications services. Following the October Storm, many customers were out of power for, in some cases, more than 12 days. Utility storm response was investigated by Witt Associates and the Governor's Two Storm Panel. The Two Storm Panel produced a report detailing the storm effects and provided 82 recommendations on a wide variety of topics, which covered all affected utilities and can be implemented at the State level to improve Connecticut's readiness for the next emergency.

The Public Utilities Regulatory Authority (PURA or Authority) established this Docket on its own motion on September 14, 2011, pursuant to Section 16-11 in the General Statutes of Connecticut (Conn. Gen. Stat.), to investigate the preparedness, service response and communications of CL&P and UI following the service outage from Tropical Storm Irene which struck the state on August 28, 2011. On November 4, 2011, the PURA revised the scope of its investigation to include the October Storm.

Pursuant to this proceeding, 22 different sponsors submitted pre-filed testimony, approximately 750 interrogatories were issued, 85 motions were filed, and 86 Late-Filed Exhibits were requested. Over the course of the proceeding, 17 Hearings were held including 7 Late-Filed Exhibit Hearings.

In this proceeding, the PURA examined a variety of concerns surrounding these storms including, but not limited to, utility company storm preparedness, storm restoration activities, mutual assistance, communication and coordination among utility company personnel, outside restoration personnel, the towns, communication with customers, utility infrastructure, poles, pole attachments, wires, cable television, telecommunications, cellular service outages, and vegetation management.

C. WEATHER EVENTS

In 1986, the Authority initiated a broad investigation of electric distribution company reliability. This investigation was preceded by an initial investigation into Hurricane Gloria in 1985 and Hurricane Carl in 1986. By Decision in Docket No. 86-12-03, Long Range Investigation to Examine the Adequacy of the Transmission and Distribution Systems of The Connecticut Light and Power Company and The United Illuminating Company, the PURA required numerous changes in the way electric utilities maintain their systems and reported to the Authority on such maintenance.

In response to Hurricane Carl in 1986, the Authority also initiated a proceeding to specifically investigate utility performance in preparing for the storm and managing outage restoration following the storm. Decision dated May 12, 1987 in Docket No. 86-11-18, DPUC Review of Performance of UI, CL&P and SNETCO in Restoring Service After Storm Carl. In that Decision, the Authority ordered the electric companies to report on their performance after every storm that results in a major electric outage event. These reports provide information on company storm restoration responses, such as the steps taken in preparation for each storm, total customers affected, electric distribution company staff assisting in the storm, additional resources procured to assist with restoration, system damage statistics, and customer assistance statistics.

In 1999, the Authority initiated a broad investigation of the electric utility companies' performance during a summer heat wave that resulted in numerous outages to customers throughout the state. Decision dated July 26, 2000 in Docket No. 99-08-01, DPUC Investigation into Electric Capacity and Distribution. That investigation determined that the primary reason for the outages was systematic transformer overload due to inadequate sizing (rating). Decision, p. 1. This investigation resulted in a number of findings and recommendations for future improvements in performance; primarily, that the Electric Distribution Companies (EDCs) implement improved methodology for forecasting loading on equipment. Id.

More recently, the Authority initiated an investigation into a major "Nor'easter" that occurred in March 2010 which caused widespread, persistent outages primarily in the southwestern portion of the State. Decision dated December 1, 2010 in Docket No. 10-03-08, Investigation of the Service Response and Communications of The Connecticut Light and Power Company (CL&P) and The United Illuminating Company (UI) following the Outages from the Severe Weather over the Period of March 12 through March 14, 2010. The Authority retained a consultant to assist its review of the EDCs performance and their proposed corrective actions. After an exhaustive investigation, the Authority found numerous areas for improvement in electric utility outage restoration practices and communications, and ordered such improvements.

The recommended actions included implementation of additional training for certain emergency response personnel, enhanced after-action reviews, and additional electronics capabilities in line trucks.

D. CONDUCT OF THE PROCEEDING

By Notice of Hearing dated February 23, 2012, the Authority conducted public hearings on March 19, 2012, March 20, 2012, March 21, 2012, March 22, 2012, April 12, 2012, April 23, 2012, April 24, 2012, April, 25, 2012, April 26, 2012, April 30, 2012, May 1, 2012, May 2, 2012, May 3, 2012, May 21, 2012, May 22, 2012, May 23, 2012, and May 24, 2012. By Notice of Close of Hearing dated June 28, 2012, the hearing in this matter was closed. A Draft Decision was released to the public on July 17, 2012. All Participants were given the opportunity to submit written exceptions.

E. PARTICIPANTS

The PURA recognized the following as participants in this proceeding: The Connecticut Water Company; Department of Homeland Security/Office of Emergency Communications; Sprint Nextel Corporation; Jewett City Water Company; Hazardville Water Company; the Office of Consumer Counsel; Comcast Hartford; Olmstead Water Supply Company, Inc.; Judea Water Company; Tyler Lake Water Company; Verizon Wireless; Town of Wilton; AT&T Connecticut; Towns of Newtown/Redding; FiberTech Communications; QualComm-Enterprise Services; Cablevision Systems Corp.; Local 420 – IBEW; Comcast Cable; Charter Communications; Charter Communications Entertainment 1; Metrocast Communication; the Office of the Attorney General; The United Illuminating Company; Connecticut Natural Gas Corporation; The Southern Connecticut Gas Company; Old Newgate Ridge Water Company; Aquarion Water Company of Connecticut; Valley Council of Governments; New England Cable and Telecommunications Association, Inc.; Connecticut Conference of Municipalities; Verizon New York, Inc.; One Communications; Zagorsky, Zagorsky & Galske, P.C.; Ztar Mobile, Inc.; Preston Plains Water Company; CWA-Local 1298; Coxcom, LLC d/b/a Cox Communications; Thames Valley Communications, Inc.; Conexions, LLC; Statewide Video Advisory Council; Town of Ridgefield; Consumer Cellular, Inc.; Kevin McCarthy; Alltel Communications, Inc.; Total Call Mobile, Inc.; Yankee Gas; Heritage Village Water Company; Torrington Water Company; The Connecticut Light and Power Company; T-Mobile USA, Inc.; Valley Water Company; Avon Water Company; West Service Corporation; and Cablevision of Connecticut, LP.

F. PUBLIC COMMENT

The Authority held 17 hearings to investigate the public service companies' responses to the 2011 storms.

On March 19, 2012, the President of the Communications Workers of America (CWA) Local 1298, representing The Southern New England Telephone Company d/b/a AT&T Connecticut (AT&T or AT&T Connecticut) workers gave public comment. He commented that due to layoffs, AT&T no longer has the workforce to sufficiently maintain the lines and equipment as it had in years past. Therefore, the equipment could fail due to lack of maintenance. Tr. 3/12/12, pp. 14-23. On May 1, 2012, the

CWA commented in opposition to having a single pole administrator as proposed by UI and CL&P, citing that this would adversely impact the AT&T lineman or outside technicians. The CWA states that the skill sets required to perform telephony functions are unique to the communications industry and consumers' telephone service would be at risk if this proposal is adopted. Tr. 5/1/12, pp. 2140 and 2141.

The Authority's Consumer Service Unit also received approximately 1,000 letter and email complaints against the utility companies with regard to the 2011 Storms, many of which were presented to the Authority from Governor Malloy's office. An additional 1,000 complaints were received via telephone. The majority of the customers who were affected by the 2011 Storms were concerned with the length of time it took the companies to restore service and the difficulty receiving information from the companies. Several customers stated that the companies were unprepared, mismanaged, and had underestimated the magnitude of the storm by not having sufficient repair crews available. Consumers believed that the lack of information provided by the companies left them unable to prepare for a longer than normal outage.

Customer comment varied, but frustration regarding the amount of time the utility companies required to repair and restore service was a common theme. Several customers mentioned that Connecticut has the highest electric rates in the country and therefore, warrants better customer service. Customers suggested ways to help avoid future outages such as trimming trees and burying power lines. Others felt that customers with wells or septic systems should have their restoration of service prioritized because of the public health issues.

G. TESTIMONY BY ELECTED OFFICIALS

During the April 26, 2012 and May 24, 2012 Hearings, six elected officials from Connecticut towns in CL&P's service territory provided comments on their experiences during the outage period and interaction with CL&P.

1. Ms. Mary A. Glassman, First Selectman of Simsbury

Ms. Glassman indicated a desire to improve in the reliability of restoration estimates as the Town of Simsbury (Simsbury) relies on them to inform residents and to provide staffing and shelter needs. Tr. 4/26/12, p. 1736. She noted that she was seeking improvements in the make safe system and the need to reopen roads as soon as possible for emergency vehicles accessibility. Id., p. 1737.

Ms. Glassman was also concerned with the change in CL&P liaisons. Tr. 4/26/12, p. 1753. Ms. Glassman noted that as of November 4, 2011, Simsbury still had 30 streets that were inaccessible to emergency vehicles. She indicated that there was considerable confusion in that Simsbury was not told when crews were going to arrive. She commented that the town would have its crews available, and then when line crews did not arrive, the town crews were sent home. After the town crews' departed, then the CL&P crews would arrive. Id., p. 1756. In this regard, she noted a loss of real opportunity to clear some roads. Additionally, Ms. Glassman expressed concern over the time estimates for restoration. She noted that even though the majority of Simsbury was still without power and CL&P was providing its Sunday restoration estimates, these

projections created added stress to town residents because Simsbury was disseminating wrong information. Id., p. 1758. She also noted that had Simsbury relied on those estimates, it would not have had enough supplies in its shelter to sustain a longer shelter event. Id. Ms. Glassman noted it was not until the Thursday after the Saturday storm when the National Guard cut through the trees, that the town saw any major improvement. Id., p. 1765. Ms. Glassman advocated being better prepared next time, building relationships between liaisons, and developing standard ways of communicating. Id., p. 1785. She expressed the need for accurate information, noting that where it works best is when a crew is assigned to working alongside public works so one is not duplicating or wasting time. Id., p. 1786.

2. Mr. Matthew B. Galligan, Town Manager of South Windsor

Mr. Galligan expressed a concern over discussion in the Davies Report[1] of the possibility of having a regional liaison because different towns were on different communication systems. Mr. Galligan was disappointed with the make-safe process, noting that of the 135 roads blocked, town crews cleared all but 39 roads within a 48-hour period. He noted that it was not until the seventh or eighth day that crews came from Ontario and Ohio who knew what they were doing and worked well with the town. Tr. 4/26/12, p. 1732. Mr. Galligan cited instances of miscommunication, once after Tropical Storm Irene involving a company that makes plasma, that needed power because it only had a 48 hour supply of plasma left for all the hospitals in Connecticut. According to Mr. Galligan, the town sent a work crew to clear debris and waited for CL&P, who did not show up for eight hours. Mr. Galligan also noted that there were two times when it risked its emergency crews to get somebody to the hospital despite the downed lines which may have been live. Id., p. 1735.

Mr. Galligan noted a frustration in having been assigned a new liaison by the company who was not as familiar with town priorities. Mr. Galligan indicated that the town trucks have GPS, and knew where the wires were down. According to Mr. Galligan, the town had all the information from day one and kept relaying it to the liaison but it was not until four or five days later that the town actually got a crew. Tr. 4/26/12, pp. 1770 and 1771.

Mr. Galligan recommended that CL&P crews be embedded with the town public works crews. Mr. Galliagan did not think the make-safe effort delayed the restoration because his town did not have make safe roads until after service restoration. Id., p. 1792.

3. Mr. Steven R. Werbner, Town Manager of Tolland

Mr. Werbner indicated that the Town of Tolland (Tolland) experienced 100% outages in both storms. Mr. Werbner noted that Tolland knows its priorities for restoration, in storms that require the intervention of others, Tolland's planning and preparation is put in abeyance until it can get the cooperation of others. Tr. 4/26/12, p. 1739. Mr. Werbner asked for systemic change that would require utility companies to coordinate their resources with the towns to ensure an appropriate response to

[1] CL&P conducted its own internal review by Davies Consulting.

significant events. Id., p. 1740. Mr. Werbner noted that a method is needed to ensure that utility companies are held accountable for their actions, as local government officials are held accountable by their electorate. Id., p. 1741

Mr. Werbner testified that Tolland was concerned with an allocation of resources. Tr. 4/26/12, p. 1743. He noted that his town had crews that were willing to work around the clock in order to open streets but were useless because they could not access the streets because trees were entangled with wires. Id., p. 1745. It was not until Tuesday of the second week before all the downed wires were taken care of so that roads could be cleared. Id., p. 1751. He also noted that the town had 25 roads that were not passable until Tuesday of that second week. Id., p. 1752.

Mr. Werbner agrees that the regional liaison concept does not work and it is impractical to think that a liaison is going to rotate from community to community and be effective. Tr. 4/26/12, p. 1781. Mr. Werbner claimed that a liaison can be of great assistance if it is given some authority to be able to work with operations to direct crews where they are needed based upon the information that they are receiving from the towns. Id.

4. Ms. Natalie Ketcham, First Selectman of Redding

Ms. Ketcham indicated that since she has been Redding's First Selectman, the period of time that Redding was without power following the 2011 Storms were the worst two weeks of her tenure. Tr. 5/24/12, p. 2937. She noted that Redding was without power following both storms, and it took a full week in each case to be restored. Id., p. 2938. She commented that in the aftermath of Tropical Storm Irene, CL&P had an employee assigned to town hall every day to provide information. However, the employees could not answer questions with any certainty. Ms. Ketcham claims that they did not return following the October Storm, which left Redding employees and resident volunteers alone with little or no reliable information from the utility on restoration activities. Id. Ms. Ketcham also believed that CL&P did not act wisely by failing to control their resources and refusing to vest decision-making authority with its field managers. Id., p. 2939.

Additionally, Ms. Ketcham expressed concern over CL&P's communication. In particular there was no radio communication between company trucks, as well as the lack of credibility of the information once it was passed. She noted one situation where trucks were sitting at the side of the road because they came from out of state and did not know where they should be working. Also, there was an enormous amount of down time. Tr. 5/24/12, p. 2955. Ms. Ketcham was further concerned that technology seemed to be very rudimentary from the standpoint of the company. Id., p. 2956.

5. Ms. Patricia Llodra, First Selectman of Newtown

Ms. Llodra testified that the 2011 Storms challenged her abilities as a town official beyond anything previously experienced. Tr. 5/24/12, p. 2941. Ms. Llodra claimed that Newtown was a town virtually without power for one week or more following each storm. Ms. Llodra related that 2,000 homes were still inaccessible to emergency vehicles on day 4 following the October Storm, 80 roads remained

impassable 5 days following the storm event, and it was a 3-day wait for the first line crew to arrive. She claimed that contracted tree crews waited for CL&P line crews that never showed up. Additionally, she noted that the maximum security prison was two hours away from complete depletion of its generator support system. Id., p. 2943.

Moreover, Ms. Llodra indicated that there were significant issues in her town with communication. She spoke of damaged towers, which meant that cell phone conversations were really hampered, and at one point the liaison could not even use her cell phone to talk to the center that was also located in Newtown. Tr. 5/24/12, p. 2959. Ms. Llodra spoke of the lack of truck to truck communication, indicating that crews would end up at the municipal center asking for directions to get to where they were assigned to go. Ms. Llodra noted that the town had 60 or 70 radios that it offered to the CL&P restoral crews so they could talk, but that offer was declined because of security issues. Id., p. 2960. According to Ms. Llodra, the first line crews were not present until the Wednesday following the October Storm. Id., p. 2967.

Ms. Llodra spoke very positively of the liaison program. She noted that after the first five days into the second storm event, the liaison had more tools, had more ability to manage the information, and was more clear and confident in her communication with the town. Tr. 5/24/12, p. 2980. Ms. Llodra did not have a growing sense of confidence that they were at a place where there would be a better response if there were another event, but she thought they were getting there. Id., p. 2987.

6. Mr. Rudolph Marconi, First Selectman of Ridgefield

Mr. Marconi noted that the Town of Ridgefield (Ridgefield) was assigned a local liaison who worked closely with him. Mr Marconi became frustrated because he knew the liaison was not getting the information he needed. Tr. 5/24/12, p. 2946. Mr. Marconi also testified that there needs to be better mutual aid policies with other outside agencies or power companies. Id. Mr. Marconi testified that when the town got into the make-safe mode it was prepared to respond and to collect the necessary data so that CL&P had the data to respond to and know where the locations were. Mr. Marconi noted that for three years the town has been requesting CL&P to implement a program where either it train local electricians or have union electricians be assigned to town crews to make the roads safe so that the roads could be open. Mr. Marconi advocated a program that allows electricians to assist the highway department in the opening of roads. Id., p. 2951.

Mr. Marconi noted that Ridgefield, in the aftermath of the October Storm, received one line crew on the following Monday, that was increased by four by Thursday night. Mr. Marconi claimed that it was not until Friday afternoon, following the the October Storm which was on Saturday, that the town received another 25 trucks. Id., p. 2958.

Mr. Marconi also testified that the problem was the unavailability of the crews in-state, which prevented an immediate response to the Storm. Tr. 5/24/12, p. 2968. Mr. Marconi further testified that he wanted to see a financial commitment made to the mutual aid agreements. Id., p. 2983. Lastly, Mr. Marconi felt that the liaison program

was a very good program, and that the liaison needs more authority at the local level. Id., p. 2982.

II. CONSULTANT REPORTS

A. WITT ASSOCIATES

In 2011, the State of Connecticut retained Witt Associates to provide an independent assessment of preparedness, response, and restoration efforts associated with the October Storm. Witt Associates is a public safety and crisis management consulting firm based in Washington D.C. with consultants located throughout the country. As a result of its assessment, Witt Associates produced a report titled, "Connecticut October 2011 Snowstorm Power Restoration Report," dated December 1, 2011. Excerpts from the Executive Summary of that report are as follows:

The northeastern United States was struck by an unusual pre-Halloween snowstorm on October 29, 2011. The wet snow – more than 12 inches in some areas -- stuck to the still leaf-laden trees bringing down limbs, branches and, in some cases, full trees. Fallen trees caused substantial damage to power lines, including some transmission lines, and blocked roads. More than 3 million electric utility customers lost power in the region. Eight deaths related to the snowstorm were reported in Connecticut. The snowstorm and power outage resulted in significant economic losses in Connecticut.

North Central Connecticut was hit especially hard, challenging the capabilities and coordination of electricity providers and public sector response. Almost 70 percent of CL&P's 1.2 million customers, lost power. Customers of UI which serves the coastal area, were not hit as hard, with a total of 52,000 of its 350,000 customers affected at some time during the outage.

This Power Restoration Report provides an independent assessment of the preparedness, response, and restoration efforts and offers recommendations for how capabilities to address such events can be improved.

The October Storm resulted in 809,097 CL&P customers being without power at some time during the 11-day outage; many suffered multiple outages. The duration of the power outage in some of the most heavily impacted areas caused inconvenience and frustration among the public and municipal officials. Community frustration was exacerbated by CL&P's communications with the general public and state and local officials.

The October Storm resulted in the largest restoration effort in CL&P's history. Despite the length and extent of the service outages, and the effect on customers in the affected service areas, there were successes in CL&P's power restoration effort. The company's internal forecast model accurately predicted power would be fully restored by Wednesday, November 9, although an unprecedented army of mutual aid workers from other utilities was required to do so. No serious injuries or deaths were reported associated with the restoration effort. Municipalities reported that power restoration crews, once they arrived in their communities, generally functioned well and efficiently.

Stakeholders also praised the assistance from power company customer service representatives in answering phone lines in a timely fashion, with an average wait time of less than Connecticut October 2011 Snowstorm Power Restoration 45 seconds; this is frequently not the case in such a wide-scale event. CL&P's recently created Town Liaison program, while not completely successful in its implementation, is recognized as positive in concept.

UI outages were smaller in number and in proportion to their total customers. After the October snowstorm, all UI customers were restored by the night of Wednesday, November 2.

As noted above, the scope of this expedited high-level review is limited to the restoration effort itself. There are several other factors that impact the scale of outages during a major event including system design, hardening, vegetation management, and regulatory issues. We recommend further review of these and other issues. Witt Associates, Connecticut October 2011 Snowstorm Power Restoration Report, Executive Summary, pp. 1-3.

B. TWO STORM PANEL

Governor Dannel P. Malloy announced the formation of The State Team Organized for the Review of Management (STORM) of Tropical Storm Irene on September 13, 2011. The eight member panel was charged with the following mission: "a broad, objective evaluation reviewing how Irene was handled in the state both in preparation and recovery, identify areas that can be improved upon and, most importantly, make recommendations for future disaster preparedness and response." Following the October Storm, the Governor expanded the work of the panel, renamed it The Two Storm Panel, and directed it to report its findings to him by the first week of January, 2012. Excerpts of the Executive Summary of the "Report of the Two Storm Panel" (Two Storm Panel Report) are as follows:

Tropical Storm Irene and the October Nor'easter tested Connecticut's emergency resources in ways that they had not been tested in more than 25 years. In that intervening 25 years, Connecticut's infrastructure had increased significantly, while the manpower associated with the maintenance and repair of that infrastructure had decreased significantly. The result was that although Connecticut has faced far more significant storms, such as Category 3 hurricanes, both Tropical Storm Irene and the October Nor'easter left record numbers of residents without electricity, communications, heat or reliable supplies of water.

The significant impact of these storms has served as a wake-up call to Connecticut. Our state must do more to prevent, plan for, and respond to emergencies and natural disasters.

To that end, this Report serves as the beginning of what this Panel hopes will be a robust review and evaluation of Connecticut's approach to the prevention, planning and mitigation of impacts associated with emergencies and natural disasters that can reasonably be anticipated to impact our State. The Report contains 82 recommendations on a wide variety of topics, with subjects ranging from utility issues

("utility," for the purposes of this Report, shall include all infrastructure components, including electric, gas, water, sewer, telephone, cable, television, data and piping infrastructure) to municipal assistance to changes that can be implemented at the State level to improve the State's readiness for the next emergency. Two Storm Panel Report, Executive Summary, p. 1.

C. THE LIBERTY CONSULTING GROUP

After initiating the instant docket, the Authority contracted with The Liberty Consulting Group, (Liberty) to act as an extension of the PURA staff in this proceeding, pursuant to §16-18a of the General Statutes of Connecticut (Conn. Gen. Stat.).

Liberty's April 16, 2012 report was entitled, "Report on the Preparation for and Response to the August and October 2011 Storms by The Connecticut Light and Power and The United Illuminating Companies (Liberty Report)." See "Attachment A" to access the complete Liberty Report. Excerpts from its summary section are as follows:

According to Liberty the 2011 Storms were significant, and the early snowstorm was unprecedented. Liberty found that CL&P and UI each performed some things well in the preparation for and response to the storms. However, Liberty also found that aspects of both companies' performance made worse the severity and duration of the storms' effects. Liberty concluded that the following were beneficial aspects of CL&P's performance.

1. CL&P's systems and methods enabled customers to communicate easily with the company during the storms.

2. CL&P has a superior distribution pole specification and groundline inspection program. CL&P has been purchasing one of the more durable types of poles since the mid-1980s. The percentage of reject poles is low.

3. The CL&P district emergency organization provides the framework to support an effective response. In both storms, CL&P opened and staffed the district commands in good time.

4. CL&P proactively communicated with the media, public officials, customers, and the public before, during, and after the storms.

5. CL&P's emergency plans provide clear expectation of employee involvement in support activities. This is a very important aspect of any successful response effort.

6. The Classification of Service Outage Events in CL&P's emergency plans provides helpful guidance in determining the amount of required resources.

However, Liberty found that CL&P's storm performance was below average. The most important items in this category are as follows:

1. CL&P's distribution tree trimming program contributed significantly to the extent of 2011 storm damage and the duration of storm service interruptions. CL&P should institute a four-year, full-cycle trim program, a more aggressive overhang trimming process, and a more aggressive hazard-tree removal program.

2. CL&P could not provide restoration estimates or restoration status to customers on a timely basis. CL&P should pursue the technology enhancements that will facilitate real-time updates of restoration status information into the outage system. It should also develop specific, measurable goals and objectives for improving the accuracy and timeliness of outage related information provided to its constituents.

3. CL&P's implementation of the Incident Command System (ICS) did not set up the strong, top-down management response that is necessary in reacting to major outages. CL&P should modify its storm management structure, placing more direct authority and responsibility at the System, Area, and Division level.

4. CL&P made a determined effort in acquiring outside resources, but the results were disappointing. CL&P should work with EEI and other Mutual Assistance Groups to improve the present process.

5. CL&P management did not have proper control over the "Cut/Clear, Make Safe" work done with the towns. CL&P should work with the towns, other utilities, and emergency agencies to establish specific guidelines as to the work CL&P will do in this effort with the towns.

The effect of the storms on UI was not as severe as that experienced by CL&P, primarily because of UI's smaller and more compact service territory. Liberty concluded that the items listed below were beneficial aspects of UI's performance.

1. UI well organized its response to the two storms.

2. UI proactively communicated with the media, public officials, customers, and the public before, during, and after the storms.

3. UI managed the alert and mobilization processes well in both storms.

4. UI has an aggressive distribution-pole groundline program.

5. UI used automatic meter reading technologies to communicate with installed meters during the storm to confirm restoration status.

The most significant aspects of UI's performance that require improvement were the following.

1. UI could not handle the large volume of customers trying to communicate with the company during the storm. UI should create a call center storm staffing process to facilitate quick ramp-up of call takers during a large outage. It should redesign its call center technology to improve communications with customers

during a large outage or storm. Moreover, it should rigorously test call-handling technology, website, and the outage management system to ensure the technologies operate to expectations and specifications.

2. The results of UI's efforts to procure outside resources were disappointing. UI should affiliate with more than one mutual assistance group and work with EEI and other Mutual Assistance Groups to improve the present process.

3. UI could not provide restoration estimates or restoration status to customers in a timely basis. UI should pursue technology and process enhancements that will facilitate real-time update of restoration status information in the outage system and enable more timely estimated restoration times.

4. UI management did not have proper control over the "Cut/Clear, Make Safe" work done with the towns. It should work with the towns, other utilities, and emergency agencies to establish specific guidelines as to the work to be done in the "Cut/Clear, Make Safe" effort with the towns.

5. Hazard trees contributed to the effects of the storms. The hazard-tree removal budget has not had consistent funding in past years. The current budget rate allows the removal of only very high priority hazard trees.

6. UI tree trims single-phase circuits every eight years. While it conducts some reliability centered maintenance on these lines, the eight-year cycle allows for increased vegetation density that will cause storm outages.

Liberty Report, Summary of Findings, pp. 1 and 2.

III. AUTHORITY ANALYSIS

A. OCC AND AG CLAIMS FOR FINDINGS OF IMPRUDENCE

The Office of the Attorney General (AG) asserts that CL&P was imprudent with regard to a number of storm related activities. AG Brief, pp. 1, 2, and 49-53. In particular, the AG states that CL&P:

1. Inadequately prepared for major storms, and failed to exercise or drill its emergency response plans and evaluate the results for at least five years prior to the storms;

2. Failed to request the assistance of outside crews in a timely manner and failed to reasonably manage the crews that arrived;

3. Engaged in an unreasonable damage assessment process, including failure to transmit assessment information from the field to operations headquarters efficiently;

4. Failed to train and support municipal liaisons and defer to local restoration priorities;

5. Failed to reasonably develop estimated restoration times; and

6. Failed to reasonably manage communications with the public and public officials concerning restoration times.

The AG states that the PURA should specifically find that CL&P was imprudent in these areas and should disallow any storm-related costs that are the result of this imprudent conduct, while deferring the specific quantification of the amount until CL&P's next general ratemaking proceeding. In the alternative to disallowing specific quantified costs, the AG suggests that the PURA disallow 30 to 50 percent of all of CL&P's 2011 Storm restoration and recovery costs or reduce CL&P's return on equity in a future ratemaking proceeding as a penalty and warning to improve its management practices. AG Brief, p. 53.

The Office of Consumer Counsel (OCC) similarly asserts that CL&P's management practices rose to the level of imprudence. OCC Brief, pp. 12-28. Those areas chiefly related to CL&P's communications during the restoration period, including:

1. The continued public insistence that it would meet a restoration time that it knew it was unlikely to meet;

2. The implementation of a town liaison program that failed to provide for the flow of information between towns and CL&P; and

3. The failure to implement "lessons learned" from the 2010 storm, including the failure to implement technology to facilitate "real time" updating of information from crews into its operation's management systems.

By way of remedy, the OCC seeks findings of imprudent management and related penalties or disallowance of costs for the imprudent management conduct in future proceedings, including the storm recovery docket resulting from the Merger Settlement and any upcoming CL&P rate proceedings. OCC Brief, p. 14.

1. Authority Discussion

An appreciation of the nature and purpose of this proceeding is critical to the issue of regulatory economic disallowances. Conn. Gen. Stat. §16-11 provides the PURA with its general regulatory oversight. In particular, it states that the PURA must "keep fully informed as to the condition of the plant, equipment and manner of operation of all public service companies in respect to their adequacy and suitability to accomplish the duties imposed upon such companies by law." Further, the PURA "may order such reasonable improvements, repairs or alterations in such plant or equipment, or such changes in the manner of operation, as may be reasonably necessary in the public interest." Id. In accordance with this statutory obligation, the PURA opened this proceeding on September 14, 2011, to review the preparedness, service response and

communications of both CL&P and UI with respect to Tropical Storm Irene.[2] On November 4, 2011, in the aftermath of the October Storm, the PURA expanded the scope of this proceeding to include a review of that storm. On November 25, 2011, Motion Ruling No. 15, p. 2, the PURA entered a clarifying ruling in response to a request from the AG and the OCC. That clarification, in salient part, stated:

> [T]his proceeding will be of broad scope and entail a full review and investigation of the outage, impacts and responses of all public service companies, video, voice and cellular providers, to both storms . . . the Authority notes that this proceeding and investigation pursuant to Conn. Gen. Stat. section 16-11 may entail remedial orders affecting public service company improvements, alterations, or changes in the manner of operations, as may be reasonably necessary in the public interest.

Thus, the PURA's intent in this proceeding is to conduct a review and critique of public service company obligations with an aim at identifying deficiencies and impose corrective measures in the method and manner of operations, consistent with the mandate of Conn. Gen. Stat. §16-11. With the input from a broad array of interested participants, measures will be identified and imposed that will ensure that results, where deficient, will not occur again and utilities will be put on a path to provide and restore reliable and safe service in the aftermath of major storms. In this manner, the PURA strives to achieve a higher and greater public good consistent with Conn. Gen. Stat. §16-11.

Accordingly, all participants were fully apprised of the nature and scope of this proceeding, and the PURA has carefully clarified the scope and purpose of its investigation. The issue of a prudence review and associated potential cost disallowance as a result of this proceeding was never raised by any participant, until the AG and the OCC presented the issue in their June 18, 2012 Briefs.

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In response to the AG and the OCC claims, CL&P contends that the overall record in this matter does not support a finding of imprudence as a matter of fact,[3] CL&P Reply Brief, pp. 7 and 8, and that, as a matter of law, this investigatory proceeding was not noticed to implicate either a rate disallowance pursuant to

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[2] "In establishing this docket, the Authority determined to review the Storm Irene event with a focus on the manner of operations of both electric companies having to do with storm readiness, storm restoration, storm damage, tree trimming, system reliability, and communications to municipalities and customer." November 25, 2011 Ruling No. 15, p. 1.

[3] "… restoration of more than 809,000 outages in 11 days is not inconsistent with industry benchmark." Report of Witt Associates, December 1, 2011, p. 11.
"… the duration of CL&P's restoration efforts after the 2011 storms were within industry norms, given the large numbers of outages." Witt Associates, CL&P Management Performance Audit: 2011 Major Storm Events, June 1, 2012, p. 1.
"… restoration was completed within a reasonable timeframe and cost." Report of Davies Consulting, February 27, 2012, p. 27.

ratemaking Conn. Gen. Stat. §§16-19 and 16-19e, or assessment of penalty statute, Conn. Gen. Stat. §16-41. CL&P Reply Brief, pp. 54 and 55.

2. Analysis Regarding Findings of Imprudence

Because this proceeding was not noticed to include such issues, the Authority will not make determinations on issues of prudent and efficient management or associated cost disallowances. A minimum degree of notice is constitutionally required to uphold due process where an administrative or regulatory agency is attempting to impose a claim that involves the taking of property. A finding of imprudence with associated economic penalties or cost recovery disallowances requires this manner of due process notice. In Rivera v. Liquor Control Commission, 53 Conn. App. 165, 173 (1999), quoting Fleischman v. Board of Examiners in Podiatry, 22 Conn. App. 181, 191 (1990), the Court stated: "The test of whether one is given adequate notice is whether it apprises [the plaintiff] of the claims to be defended against, and on the basis of the notice given, whether [the] plaintiff could anticipate the possible effects of the proceeding." In Fleischman v. Board of Examiners in Podiatry, the Court stated: "[i]f the notice of charges does not fairly apprise the person of the nature of the offense with which he is charged, the court may set aside the order of an agency for deficiency of notice." Fleischman, 22 Conn. App at 191, citing Murphy v. Berlin Board of Education, 167 Conn. 368, 374-75 (1974).

Connecticut courts have also recognized a common-law right to fundamental fairness in administrative hearings. Grimes v. Conservation Comm'n, 243 Conn. 266, 273 (1997). In Grimes, the issue was whether a municipal conservation commission must provide personal notice to an abutting landowner of site inspections when the abutter had no personal interest at stake. Id. at 269-73. The court held that even though no constitutional due process right existed, administrative proceedings shall not violate the fundamentals of natural justice, which require that no one may be deprived of the right to produce relevant evidence or to cross-examine witnesses produced by his adversary. Id. at 273-74. "[D]ue process of law requires that the parties involved have an opportunity to know the facts on which the commission is asked to act . . . and to offer rebuttal evidence." Pizzola v. Planning & Zoning Commission, 167 Conn. 202, 207 (1974).

As discussed herein, the notice and scope of this proceeding unmistakenly did not involve issues of imprudence or rate recovery disallowances. CL&P was not afforded the opportunity to participate in this proceeding in a manner that it would have had it known that prudence findings were an issue. Where economic sanctions are an issue, government agencies cannot act in a manner that would introduce an element of surprise to the party being penalized. See Petition of New England Telephone and Telegraph Company for an Alternative Regulatory Plan, 1995 Mass. PUC LEXIS 1, *373-74 (May 12, 1995).

However, this is not to say that the PURA will not appropriately address these issues when a claim for recovery of storm related costs in rates is made. In this proceeding, a number of companies requested that they be allowed to defer non-

recurring costs related to their responses to the 2011 Storms until their next rate case.[4] In each ruling to allow such deferral, the PURA stated that the costs may be deferred until the company's next rate case, at which time the PURA will have the opportunity to review the expenses and proposed method of recovery. The PURA further stated that such deferral does not mean recovery. Rather, the PURA stated: "[a]t that time, the Authority, as well as other participants, will have the opportunity to determine the appropriateness of the recognition, *if any*, of those expenses for rate-making purposes." Rulings to Motion Nos. 35, 39, 57, and 64 (emphasis added).

The AG, the OCC and other participants will have the opportunity to challenge any request for storm cost recovery at the time of CL&P's next rate case.[5] The settlement agreement in the Decision in Docket No. 12-01-07, Application for Approval of Holding Company Transaction Involving Northeast Utilities and NSTAR (Settlement Agreement), entered into by Northeast Utilities (NU), NSTAR, the AG and the OCC imposed a rate freeze until December 1, 2014.[6] The Settlement Agreement further provided that CL&P would file with the PURA for recovery of costs associated with both storms and that "such request will be subject to review and approval by the Authority in an adjudicatory proceeding." This proceeding, by definition, is not the storm cost recovery proceeding contemplated by the Settlement Agreement.

3. Industry Norms Are Not Dispositive

The Authority does not agree with CL&P's argument that the conclusions from the consultants' reports verify that CL&P met the required standard of care. Reply Brief of CL&P, pp. 18, 22 and 23. While it is understood that the consultants' reports suggest CL&P adhered to industry norms in some respects, such as the overall time of full restoration, see Report of Witt Associates, December 1, 2011, p. 11; Witt Associates, CL&P Management Performance Audit: 2011 Major Storm Events, June 1, 2012, p. 1; the standard of care in the Authority's three-part test on prudency is not limited by industry norms, nor limited to the single issue of full restoration timing.

The first part of the Authority's prudency test states "there must be a clearly understood definition of the standard of care by which a utility's performance can be measured."[7] Decision dated August 6, 2008 in Docket No. 08-02-06, DPUC Investigation into The Connecticut Light and Power Company's Billing Issues, p. 10;

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[4] Motions of Aquarion Water Company of Connecticut, No. 35, January 12, 2012; Avon Water Company, No. 39, March 13, 2012; Hazardville Water Company, No. 57, February 21, 2012, and Valley Water Systems, No. 64, March 6, 2012.

[5] The Authority, as economic regulator, must ensure that the level and structure of rates charged only reflect "prudent and efficient management of the franchise operations," pursuant to Conn. Gen. Stat. § 16-19e(a)(5).

[6] Settlement Agreement dated March 13, 2012, section 4.3 approved in the Decision, Docket No. 12-01-07.

[7] The three part test is as follows: "First, there must be a clearly understood definition of the standard of care by which a utility's performance can be measured; second, the actions of the utility must be examined to determine if there has been a failure on its part to conform to the standard required; and finally, there must be a reasonably close casual connection between the imprudent conduct, if any, and actual loss or damage." Docket No. 08-02-06, DPUC Investigation into the Connecticut Light and Power Company's Billing Issues, Aug. 6, 2008, at 10-11.

Decision dated July 21, 1988 in Docket No. 87-11-01, Public Hearing to Investigate Whether Charges or Credits Made Under the Purchased Power, Fossil Fuel, Purchased Gas Adjustment and/or Generation Utilization Adjustment Clauses Are Accurate for the Preceding Three Months, p. 11. In this test, there is no reference to industry norms, industry standards, or any other form of industry practices. Such references may be applied in order to determine the standard of care; however, industry norms by themselves are not determinative per se.

This view is not only in accordance with the Authority's test for prudency, but also with numerous other areas of law. In Tug Ocean Prince, Inc. v. United States, the Court held that actions in conformity with industry standards are not conclusive; an industry as a whole can lag behind the standard of reasonable care. 584 F.2d 1151, 1156-57 (2d Cir. N.Y. 1978), cert. denied, 440 U.S. 959 (1979). The customary practice of the industry is relevant, but the standard of care is not limited to complying with usual practices in the industry or trade. Troupe v. Chicago, Duluth & Georgian Bay Transit Co., 234 F.2d 253, 260 (2d Cir. N.Y. 1956). "Compliance with industry standards . . . does not necessarily preclude the existence of an issue of material fact." Notarino v. City of New Haven, 2010 Conn. Super. LEXIS 1864 (July 15, 2010).

At this time, the Authority must legally refrain from making a determination or ruling as to the prudency of CL&P's 2011 Storm-related costs as that issue and proceeding are for another day. When this issue is determined, industry norms may not insulate CL&P in a moat of immunity as to whether it used and executed prudent and efficient management techniques in all aspects of its storm recovery activities. Further, Witt Associates makes the following clarification on industry norms by noting, "[t]he industry has recognized that such norms themselves are in need of improvement, particularly in the areas of damage assessment and establishment of restoration priorities. Trends in industry best practice are now towards addressing these recurring challenges." June 1, 2012 CL&P Management Performance Audit: 2011 Major Storm Events by Witt Associates, p. 4.

4. Rebuttable Presumption of ROE Disallowance

The record in this case is exceedingly well developed as to CL&P's planning, reaction, restoration, communication, execution and recovery issues as to the 2011 Storms. Based on the record, the PURA can make a number of findings and recommendations. Most have to do with the manner of operation, but the Authority also does have broad regulatory authority[8] and may exercise that authority in a manner that protects the relevant public interests, both existing and foreseeable. For reasons discussed below, the Authority concludes that CL&P's performance in the areas regarding communication to customers, other service providers and municipalities was so deficient as to be less than adequate and suitable and to warrant regulatory sanction. This deficiency also involves its lack of preparation of personnel, failure to support

[8] Conn. Gen. Stat. § 16-11 states that its purpose is to assure to the state of Connecticut its full powers to regulate its public service companies and to increase the powers of the PURA and that the statute is to be construed so as to effectuate these purposes.

municipal liaisons and to reasonably develop and communicate restoration times to customers.

In light of the overall substantial weight of evidence developed in this record regarding the performance of CL&P during the 2011 Storms, the PURA will establish a rebuttable presumption that CL&P should be imposed an appropriate basis point reduction to its allowed return on equity (ROE) in its next ratemaking proceeding as a penalty for such poor management performance and to provide incentives for improvement.[9] The factual support for this legal presumption as to an ROE penalty is rebuttable: the burden of proof as to management execution and manner of operation as to these deficiencies identified in this proceeding will rest with CL&P. CL&P will have the opportunity to rebut the presumption, supported by the record in this case, as well as the amount of the adjustment to its ROE at its next ratemaking proceeding.

B. THE CONNECTICUT LIGHT AND POWER COMPANY

1. Description of the Storms, Outages and Damage to CL&P Infrastructure

a. Tropical Storm Irene

Beginning on August 23, 2011, CL&P began escalated monitoring of Tropical Storm Irene, which at that time was located in the tropical Atlantic Ocean. On August 26, 2011, CL&P opened its Emergency Operations Center (EOC) in partial activation mode at 8:45 a.m. to support and organize planning and coordination activities. At 12:02 p.m. that same day, the CL&P EOC was opened in full activation mode and it initiated the process of implementing full staffing of the EOC. Also on August 26, 2011, CL&P initiated the process of securing additional resources and establishing logistics to support these resources. CL&P Response to Interrogatory EL-1.

CL&P's pre-storm preparation consisted of the following steps that were taken five days in advance of the approaching storm:

- Daily storm preparation calls were scheduled to ensure all preparations for the anticipated hurricane were completed on time;
- Mutual aid conference calls with the New England Mutual Aid Group (NEMAG) and the New York Mutual Aid Group (NYMAG) groups were held daily from August 24, 2011 through August 28, 2011 in anticipation of dealing with the anticipated affects from Hurricane Irene. Conference calls continued until September 7, 2011 to discuss mutual aid options;
- Line and tree contractors were secured and prepositioned;
- Helicopters were secured and prepositioned for reconnaissance;

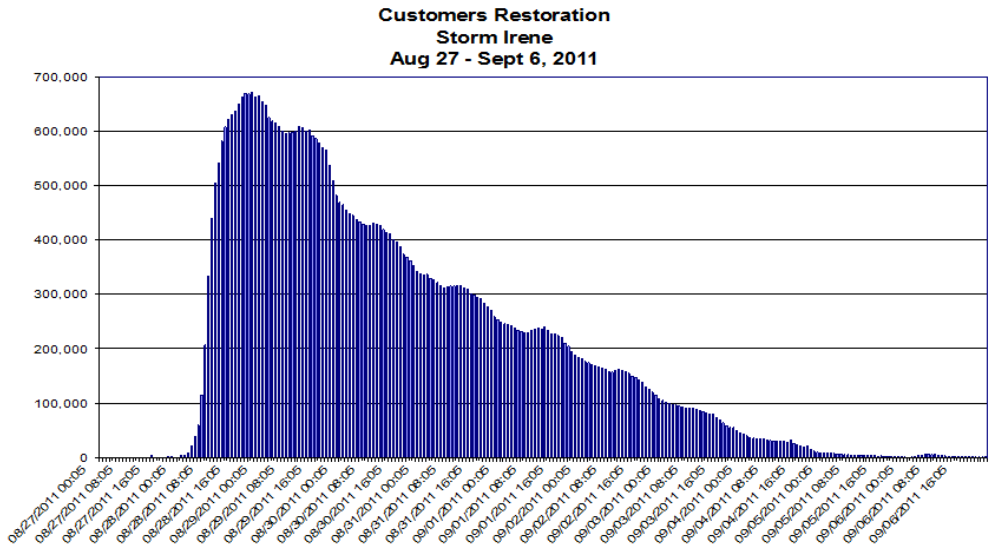
[9] For instance, Schedule A-1.0B in Docket No. 09-12-05 indicates that for the rate year ending June 30, 2012, 100 basis points (1 percent in CL&P's ROE) is equivalent to $22.83 million.

- Vacations for all NU employees were cancelled;
- 100% of CL&P line crews were placed on-call;
- Calls to Western Massachusetts Electric Company and Public Service of New Hampshire were made regarding crew availability over the weekend;
- Logistics vendors were prepositioned to prepare staging areas;
- Confirmed the Mobile Command Center was available for use;
- Support staff storm assignments were confirmed;
- Circuit configuration was checked and distribution loop schemes defeated;
- All facilities were confirmed ready for heavy winds and rain. All outside material was secured to prevent blowing debris; and
- District storm rooms were checked for readiness.

CL&P Tropical Storm Irene report filed September 20, 2011 in Docket No. 86-11-18, DPUC Review of Performance of UI, CL&P and SNETCO in Restoring Service After Storm Carl.

On August 27, 2011, CL&P continued the process of securing additional resources and monitoring the approaching storm. On the morning of August 28, 2011, Tropical Storm Irene made landfall in Stamford, Connecticut, exposing all of Connecticut to the northeast quadrant of the storm, which encompassed the most severe weather associated with it. The State experienced sustained winds of approximately 40 mph and gusts to 66 mph over the course of most of August 28, 2011. The State experienced up to eight inches of rain, uprooted trees and downed limbs which caused extensive damage to CL&P's infrastructure. CL&P Response to Interrogatory EL-1.

Tropical Storm Irene resulted in outages to 1,024,032 CL&P customers in total, including a peak outage level of 671,000. The following is a customer restoration curve showing customer outages during and after Tropical Storm Irene:



CL&P Tropical Storm Irene report filed September 20, 2011, in Docket No. 86-11-18.

Restoration from Tropical Storm Irene was completed on September 6, 2011.

b. October Storm

CL&P states that beginning on October 27, 2011, weather forecasting services began predicting the possibility of a Nor'easter accompanied by heavy snow for October 29, 2011. As of October 28, 2011, weather forecasts were indicating that a wet snowfall of up to eight inches could be expected on October 29, 2011. CL&P Response to Interrogatory EL-13.

CL&P took the following steps in advance of the snowstorm:

- The event was classified as a level 5 event per the CL&P Emergency Plan;[10]
- Friday October 28, 2011, a storm preparation call was held to ensure all preparations for the anticipated nor'easter were completed on time;
- Mutual aid conference calls with NEMAG and NYMAG groups were held daily from October 28, 2011 through November 9, 2011, to discuss mutual aid options.
- Line and tree contractors were secured;
- Helicopters were secured for reconnaissance;
- Vacations for all NU employees were cancelled;

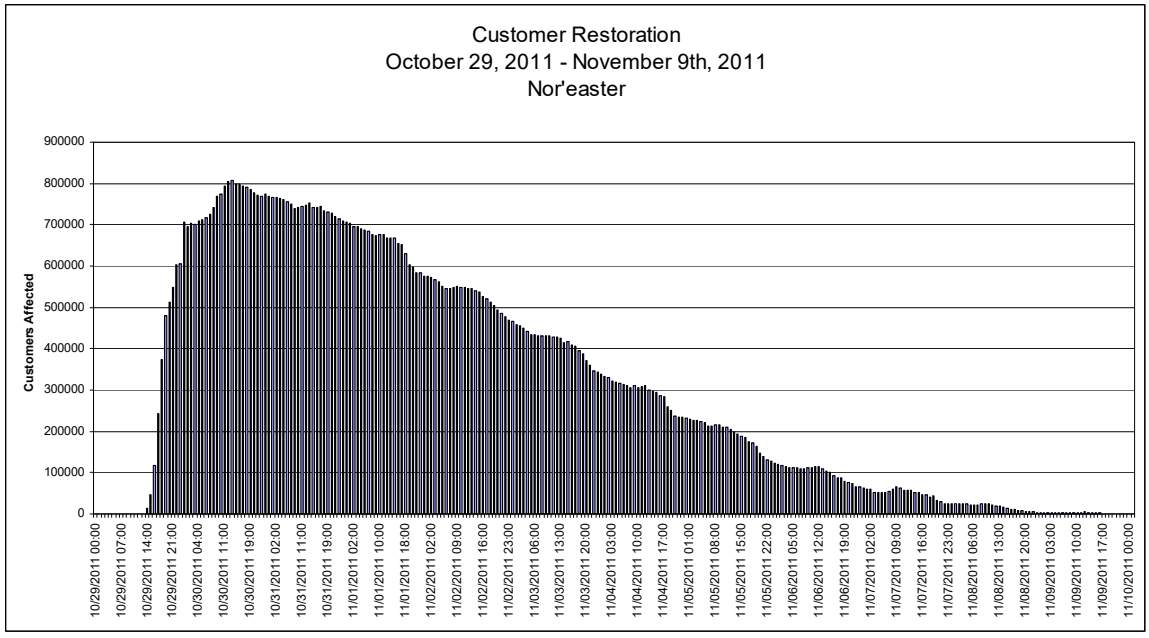
[10] Level 5 is the most severe level classification and requires commitment of all available company personnel and resources.

- 100% of CL&P line crews were placed on-call;
- Calls to Western Massachusetts Electric Company and Public Service of New Hampshire were made regarding crew availability over the weekend;
- Logistics vendors were contacted to prepare staging areas;
- Confirmed the Mobile Command Center was available for use;
- Support staff storm assignments were confirmed;
- All facilities were checked ready for a wind, rain, and snow event. Snow removal contractors were confirmed; and
- District storm rooms were checked for readiness.

CL&P Tropical Storm Irene report filed November 23, 2011 in Docket No. 86-11-18.

On October 29, 2011, at 12:00 p.m., CL&P partially activated its EOC and began requesting external resources. At 1:13 p.m., CL&P fully activated its EOC. CL&P Response to Interrogatory EL-13.

Beginning in the afternoon of October 29, 2011, heavy wet snowfall on foliated trees began causing trees and branches to fall on the CL&P electric infrastructure, resulting in outages to customers. By the end of the storm, up to 16 inches of heavy wet snow had fallen in CL&P's service territory, resulting in severe damage to electric infrastructure and prolonged outages to customers. Following is a customer restoration curve showing customer outages during and after the October Storm:



CL&P Tropical October Storm report filed November 23, 2011 in Docket No. 86-11-18.

Restoration from the October Storm was completed on November 12, 2011.

2. Liberty Findings

In general, the Liberty Report concluded that CL&P performed a number of things well before, during and after the 2011 Storms; however, its overall storm performance was below average. Liberty cited the following aspects of CL&P's storm response performance as particularly beneficial:

- CL&P's systems and methods enabled customers to communicate easily with the company during the storms;
- CL&P has a superior distribution pole specification and groundling inspection program;
- The CL&P district emergency organization provides the framework to support an effective response;
- CL&P proactively communicated with the media, public officials, customers, and the public before, during and after the storms;
- CL&P's emergency plans provide clear expectation of employee involvement in support activities; and
- The classification of service outage events in the emergency plans provides adequate guidance in determining the amount of required resources.

Liberty Report, p. 1.

Liberty identified the following aspects of CL&P's storm performance as areas needing improvement:

- CL&P's tree trimming program did not adequately remove vegetation that threatened electric lines, and contributed significantly to the extent of storm damage and the duration of service interruptions;
- CL&P could not provide restoration estimates or restoration status to customers on a timely basis;
- CL&P's implementation of the Incident Command Structure did not set up the strong, top-down management that is necessary to react to major outages;
- CL&P made a determined effort to acquire outside resources, but the results were disappointing; and
- CL&P management did not have proper control over "Cut/Clear, Make Safe" work done in coordination with municipalities.

Id.

Liberty identified a number of corrective actions intended to improve performance during future storms that were self-identified by CL&P, some of which have been completed and some of which are still outstanding. Additionally, Liberty identifies a number of recommendations for improvements in the company's practices and procedures. Other details of Liberty's findings are addressed in the sections below.

3. Customer Communications

CL&P maintains two customer call centers responsible for handling incoming customer calls, one in Windsor, Connecticut and the other in Manchester, New Hampshire. Prior to the onset of Tropical Storm Irene, numerous preparatory measures were taken to respond to anticipated high call volume and expected outages. CL&P Response to Interrogatory CSU-1. The pre-storm preparations began on August 23, 2011, and lasted until August 28, 2011. Examples of the measures taken by CL&P included cancelling all meetings, training and vacations for the week to maximize employee availability, scheduling 12-hour shifts for call center agents so as to provide 24-hour coverage, testing of all telephone systems and overflow options, notification of all medically coded customers of a multi-day outage event and to prepare for alternate arrangements via an outbound calling campaign, notification of all CL&P customers of a multi-day outage event and to prepare for alternate arrangements, activation of the call center's emergency operations plan and the suspension of all outbound collections activity. Id. CL&P indicated that during storms, its two call centers can act as a single, virtual customer contact center. CL&P does not establish a separate call center to exclusively handle emergency calls, but those calls indicated as an emergency to the toll-free emergency number are prioritized and answered by the next available agent. According to CL&P records, from August 27, 2011 through September 6, 2011, 4,154 public safety calls (police and fire) were answered with an average speed of answer of 5 seconds and 24,789 customer-indicated emergency calls were answered with an average speed of answer of 4 seconds. CL&P Response to Interrogatory CSU-3.

From August 27, 2011 through September 6, 2011, CL&P's call center was staffed on a 24 hours per day basis. During Tropical Storm Irene, normal business transactions were suspended so that CL&P could focus on storm restoration efforts. CL&P Response to Interrogatory CSU-5. On the first day of Tropical Storm Irene, CL&P brought in its outsource IVR service to assist with the increase in call volume. Tr. 4/23/12, p. 1035. According to CL&P, call volume for the entire period of Tropical Storm Irene was approximately 1.03 million calls. This figure represents almost 23% of CL&P's annual call volume. Further, call volume on August 28, 2011, was 300 times the average Sunday call volume. CL&P Response to Interrogatory CSU-4. A breakdown of CL&P's call center performance metrics follows:

Date	Calls Handled[11]	ASA[12]	ACR%	Peak Headcount
8/27/11	7,625	50	2.0%	35
8/28/11	387,376	67	2.0%	270

[11] Includes calls to live agents and calls to an IVR.
[12] In seconds.

8/29/11	219,930	18	0.7%	323
8/30/11	113,389	10	0.4%	395
8/31/11	93,409	5	0.3%	369
9/01/11	70,702	7	0.2%	287
9/02/11	53,058	18	0.7%	284
9/03/11	28,550	8	0.2%	201
9/04/11	17,408	2	.07%	153
9/05/11	9,172	3	0.1%	121
9/06/11	32,951	191	6.8%	145

CL&P Response to Interrogatory CSU-2.

Preparations at CL&P's call center for the October Storm began on October 27, 2011. CL&P implemented many of the same measures as it did for Tropical Storm Irene, including an outbound calling campaign to customers coded as medical. CL&P Response to Interrogatory CSU-18. For the period of October 29, 2011 through November 12, 2011, CL&P maintained live agents on a 24 hours per day basis at its call center to handle outage and emergency calls. During the first week of the October Storm, normal business transactions were suspended so that CL&P could focus on storm restoration activities. CL&P Response to Interrogatory CSU-21. CL&P's outsource IVR provider was also put into operation on the first day of the storm. Tr. 4/23/12, p. 1035. Along with the IVR outsource vendor, CL&P utilized the additional resources of its Manchester, New Hampshire call center to address the increase in call volume, but unlike other weather events, the October Storm impacted customers of the Northeast Utilities' system in the three states it operates. For CL&P, the call volume during the duration of the October Storm was approximately 1.1 million calls. This figure represented approximately 25% of CL&P's annual call volume. On October 29, 2011, the first day of the storm, call volumes increased to a level that was 83 times the normal level for a Saturday. CL&P Response to Interrogatory CSU-20. CL&P also indicated that during the October Storm, its call center answered 4,224 public safety calls (police and fire) with an average speed of answer of 6 seconds and answered 51,927 customer-indicated emergency calls with an average speed of answer of 7 seconds. CL&P Response to Interrogatory CSU-22. A breakdown of CL&P's call center performance metrics for the October Storm follows:

Date	Calls Handled[13]	ASA[14]	ACR%	Peak Headcount
10/28/11	14,747	14	1.3%	131
10/29/11	217,887	196	3.9%	197
10/30/11	234,204	71	1.7%	231
10/31/11	126,012	4	0.1%	320
11/01/11	118,587	6	0.3%	361
11/02/11	100,765	14	0.5%	361
11/03/11	76,177	13	0.4%	325
11/04/11	68,553	40	1.2%	334
11/05/11	47,853	48	1.2%	236

[13] Includes calls to live agents and calls to an IVR.
[14] In seconds.

11/06/11	42,655	51	1.7%	205
11/07/11	39,935	7	0.6%	387
11/08/11	22,285	7	0.2%	312
11/09/11	17,772	19	0.7%	299

CL&P Response to Interrogatory CSU-19.

In its review of CL&P, Liberty found that its call centers performed extremely well for both storms. However, Liberty found some minor issues that arose during the two events. Tropical Storm Irene was the first time that CL&P utilized the services of its outsourced IVR vendor. Liberty stated that CL&P had no clear-cut rules or thresholds for when to start or stop the vendor. Liberty also stated that as a result of this, customers encountered busy signals during a brief period of time at the onset of the storm. Liberty contends that CL&P could have brought the outsource IVR vendor online sooner. Liberty Report, p. 101. CL&P's call center performance metric indicated that over 4,400 busy signals were encountered by customers on August, 28, 2011. However, CL&P customers did not encounter any further busy signals for the remainder of Tropical Storm Irene other than a one-hour period on September 6, 2011, when an additional 226 busy signals were registered. CL&P Response to Interrogatory CSU-2. CL&P agreed that there were no procedures in place. However, CL&P looks at each storm or event individually to examine call volume, the time of day, or other considerations. Thus, the decision to initiate the outsource IVR vendor is executed on a case-by-case basis. Tr. 4/23/12, pp. 1036 and 1037.

Liberty also noted that during Tropical Storm Irene, the CL&P IVR Vendor's (IVR Vendor) upfront message was not the same as the upfront message at the CL&P call center. Liberty Report, p. 102. CL&P explained that the outsourced IVR has a standard message that allows customers to process their phone call instead of a message being utilized at the CL&P call center. According to CL&P, it resolved the issue by updating the messages to make them consistent. Tr. 4/23/12, pp. 1042 and 1043.

There was one other issue that Liberty commented on that began during Tropical Storm Irene and occurred again during the October Storm. When the outsource vendor's IVR can find the incoming phone number in its database for an outage report, an outage ticket is automatically created and forwarded to CL&P's outage management system. If the outsource IVR cannot match the phone number, the phone number is recorded on an "exceptions log" that is forwarded every 30 minutes to CL&P for manual processing. Each exception represents a reported outage and CL&P must contact the customer associated with the phone number to identify the correct account and then manually enter an outage in the outage management system. During Tropical Storm Irene, CL&P received 14,830 exceptions and during the October Storm 52,370 exceptions were received from the outsource IVR. Liberty stated that during both storms as many as 30 CL&P employees were assigned 12-hour shifts until all of the exceptions were resolved. The exceptions from Tropical Storm Irene were resolved in approximately 2.5 days while the exceptions from the October Storm were resolved in 4 to 5 days. Liberty Report, pp. 100 and 101, 106. According to CL&P, this situation has not been resolved, but it is looking into ways of fixing it. One of the ways that CL&P is investigating is having the IVR system accept other forms of input, such as an account

number or address. However, CL&P indicated that had this issue been resolved and the manual work removed, it would have made little difference to the call center's ability to respond to customers. CL&P stated that it had sufficient staff for its incoming lines and the personnel selected to manually work exception lists are not typically utilized for incoming telephone calls. Tr. 4/23/12, pp. 1038 and 1039.

Regarding the October Storm, Liberty noted some issues that affected the call center's performance. In particular, CL&P was not able to staff its call center as quickly as necessary at the beginning of the storm due to quickly changing conditions and a delayed decision of when to ramp-up to maximum staff. Also, there were a large number of busy signals encountered by CL&P customers at the onset of this storm due to the delay in initiating the outsource IVR vendor. Liberty Report, p. 107. In regard to the finding that it was unable to staff-up the call center as quickly as necessary, CL&P countered that it had 40 additional people in the call center on October 29, 2011, with plans to bring in an additional 40 more. The decision to call in the additional staff was based upon the weather forecasts that it had been receiving which were changing from day to day. However, the snow started earlier than CL&P had anticipated or was forecasted and it had to accelerate calling in additional staff. Tr. 4/23/12, pp. 1043 and 1044.

While Liberty found that CL&P's call center performed exceptionally well, it also contends that CL&P has opportunities to better handle customer calls in large outage events. Liberty Report, p. 107. Consequently, Liberty recommends that CL&P create a call center staffing model to facilitate quick ramp-up of staff and also consider staging agents in nearby hotels in preparation for large storms, especially those that could make travel difficult or unsafe. Liberty also recommends that CL&P redesign the interface between the call center technologies and the outsource IVR vendor to improve communications and help eliminate the large number of exceptions that are created. Liberty Report, p. 129.

Authority review of the Liberty Report determines that none of its findings or conclusions with regard to the call center are contradicted by the record in this proceeding. The Authority adopts the findings, conclusions and recommendations of the Liberty Report with regard to these issues.

In addition to its call center, CL&P also made use of its web site and social media as a means of communicating with its customers. During Tropical Storm Irene, CL&P's Storm Center webpages recorded over 2 million page views. On August 26, 2011, prior to the start of the storm, CL&P created a special web page specifically for Tropical Storm Irene. This webpage included messages, public service announcements (audio), videos, a news release feed, a Twitter feed and links to CL&P YouTube, Facebook and Twitter accounts. Throughout this storm, CL&P updated the webpage with numerous public service announcements, restoration information, videos and news releases. CL&P Response to Interrogatory CSU-7. During the October Storm, CL&P's Storm Center webpages recorded over 12,000,000 page views, with peak site traffic of 3.2 million page views on November 1, 2011. Just as it had done for Tropical Storm Irene, CL&P created a specific webpage for the October Storm. This webpage, created on October 1, 2011, included key messages, a news release feed, a Twitter feed, and links to CL&P's YouTube, Facebook and Twitter accounts. CL&P also made continual

upgrades to the webpage including restoration information, news releases and frequently asked questions. CL&P Response to Interrogatory CSU-38. CL&P stated that during the October Storm, its website experienced unprecedented demands on its capacity. However, at no time did the website go down as CL&P had the ability to temporarily move high traffic pages to an external hosting service that had the necessary bandwidth to handle the increased traffic. CL&P Response to Interrogatory CSU-39. This procedure can be used again if necessary for future events. Tr. 4/23/12, p. 1067. CL&P's use of social media began in June of 2010 when it launched its Twitter account. That was followed by the creation of a YouTube page in September of 2010 and then the creation of a Facebook account in August of 2011. CL&P states that during outage events, social media channels are used extensively to provide important safety messages, restoration updates and to answer customer inquiries. CL&P also noted that it was able to respond to hundreds of customer complaints via its Facebook account during the October Storm. CL&P Response to Interrogatory CSU-37. Through its Facebook account, CL&P was able to receive information concerning these customer complaints regarding particular incidents or particular areas of need and pass that information on to the appropriate areas within the company. Tr. 4/23/12, p. 1063. CL&P also incorporates smart phone technologies to enhance customer communications. Since last year, customers have had the ability to text CL&P with an outage report. Further, customers can also receive restoration information on their smart phone by texting CL&P. Tr. 4/23/12, pp. 1065 and 1066.

The OCC made a number of recommendations for EDCs to improve their policies and procedures for contacting medically vulnerable customers. In regard to the OCC's recommendation that the EDC collect secondary contact information, CL&P stated that it has already begun investigating this for all of its customers. According to CL&P, it maintains a list of approximately 20,000 medical customers in its service territory. CL&P Late Filed Exhibit No. 42. CL&P is currently looking to modify its outbound calling campaigns to incorporate the additional customer contact information, including customer e-mail addresses. Tr. 4/23/12, pp. 1059 and 1060. Accordingly, the Authority will order CL&P to investigate the feasibility of modifying its on-line medical certificate form to incorporate additional customer contact information such as a secondary telephone number and e-mail address, if available. In regard to the OCC's other recommendations, such as having the EDC contact each customer on an individual basis to ensure that they are safe, to provide customers the option to waive Health Insurance Portability and Accountability Act (HIPAA) privacy rights and the subsequent sharing of that information with the Red Cross or other municipal public safety officials, CL&P should follow the same requirements as imposed on UI. The Authority is unsure what rights can be waived under HIPAA rules. In addition, during a large outage event, the Authority is not sure if having an EDC contact vulnerable customers on an individual basis is a proper use of its resources. Until further information is provided to it, CL&P's present policy of asking customers if they can share the customer's name and phone number with the Red Cross is an acceptable substitute.

a. Municipal Communications

CL&P's Town Liaison program, initiated after the March 2010 storms in Southwest Connecticut, was mobilized in anticipation of Tropical Storm Irene. CL&P Response to Interrogatory EL-9. The qualities that CL&P looks for when selecting town

liaison personnel include strong communication skills, solid under pressure, a strong team player, adaptive, self-motivated, smart and able to understand things quickly. CL&P Response to Interrogatory CSU-25. Town Liaison staff are selected by CL&P and its Account Executive management based on those aforementioned qualities. In addition, Town Liaison personnel may also be chosen from volunteers who also serve in other storm roles. CL&P evaluates each candidate prior to being assigned as a Town Liaison. Training must be completed prior to being deployed as a Town Liaison. CL&P Response to Interrogatory CSU-24. CL&P states that the primary function of the Town Liaison staff is to act as its interface, providing the bidirectional information, support, notification and communications between municipal officials and CL&P relating to electrical system restoration during emergency operations. CL&P Response to Interrogatory CSU-28. The key duties and responsibilities of Town Liaison staff, which did not change between Tropical Storm Irene and the October Storm, include:

- Reporting to the District Command Post or other specified location to receive instructions regarding deployment to the town's EOC;

- Meeting or contacting town officials and provide an initial update on the overall status of the electric transmission and distribution systems as well as the current State and CL&P restoration recovery strategy;

- Traveling within the assigned town with municipal officials to take notes and pictures of potential issues, priorities and other local needs;

- Obtaining and sharing more specific outage restoration information via CL&P's Outage Restoration Tools;

- Attending (live or via telephone) CL&P District operational briefings;

- Gathering and sharing of local restoration progress updates and information; and

- Gathering and sharing of town damage assessment information including details of town needs or requests including critical customer restoration and blocked road information to the Town Liaison Coordinator and/or the Incident Commander.

CL&P Response to Interrogatory CSU-28.

Prior to Tropical Storm Irene, CL&P conducted a number of preparatory measures to its Town Liaison program. These activities included validating the availability of Town Liaison personnel and conducting refresher training so as to ensure each Town Liaison would be an effective single point of contact. CL&P also updated its list of municipal contacts and their contact information in order to establish a single point of contact between Town Liaisons and the Municipalities before and during the storm. CL&P Response to Interrogatory EL-9. During Tropical Storm Irene and the October Storm, a Town Liaison was individually assigned and made available to each town that had an open EOC. As storm restoration was completed in some areas, Town Liaisons were redeployed to support additional parts of the State. CL&P Response to

Interrogatory CSU-26. However, according to CL&P, many Town Liaisons had not met with town officials prior to either of the storms. CL&P Response to Interrogatory CSU-27.

The primary functions of CL&P's Town Liaison program are to be its interface with the local towns and municipalities providing a conduit for bidirectional information, support, notification and communications. However, a significant amount of criticism was directed at the execution of that program. The AG contended that CL&P's Town Liaisons were poorly prepared, poorly supported and often ineffective, particularly during the October Storm. AG Brief, p. 17. In the area of preparation, the AG stated that while Town Liaison staff were provided generic training, the training materials were incomplete as they did not focus on their role in receiving information from the towns and passing that information on to CL&P. Id., pp. 17 and 18. The AG also found fault with CL&P's failure to assign Town Liaisons prior to the October Storm. The AG asserted that as a result of this, some Town Liaisons had no familiarity with the towns to which they were assigned, which lead to their unfamiliarity with the town's distribution system and restoration priorities. The AG indicated that due to its inadequate preparation and training, CL&P's Town Liaisons were entirely unprepared to do their jobs during the October Storm. Id., pp. 18 and 19. The AG noted the importance of CL&P's Town Liaison program, but asserted that the company imprudently failed to do more than simply create a liaison program on paper. In addition, the AG recommended that CL&P be required to implement significant improvements to its Town Liaison program, especially in the areas of comprehensive training, establishing better relations with municipalities, and developing a better understanding of a town's electrical system and restoration priorities. Id., p. 19.

The OCC also had significant criticism of CL&P's Town Liaison program. Similar to the AG, the OCC contends that CL&P acted imprudently. Specifically, the OCC argues that CL&P's Town Liaison program was imprudently designed, implemented and managed. OCC Brief, pp. 21 and 22. The OCC agrees with the importance of the Town Liaison program; however, the OCC states that often the information communicated by Town Liaisons to the towns was incomplete or incorrect. The OCC noted various instances of incorrect information regarding line crews; in particular their location, timing and number. The OCC noted that towns had difficulty obtaining accurate information regarding the scope and number of outages from Town Liaison staff. Id., pp. 22-25. The OCC also claimed that Town Liaisons were unable to effectively communicate essential information to CL&P from the towns to which they were assigned. The OCC noted that either Town Liaison staff lacked the authority to provide feedback to CL&P or that CL&P had not established an effective communication channel to integrate the information. Id., pp. 25 and 26. Finally, the OCC asserted that CL&P's Town Liaison program was just a "shell." It was a program where CL&P personnel with other full-time jobs were assigned to unfamiliar towns, with little or no training, no pre-established communications channels, and no information to provide to the municipalities. Given the scope and scale of both storms, the OCC argues that CL&P was imprudent to thrust untrained office workers into unfamiliar town EOCs, without access to meaningful information or effective two-way communications and call it a liaison program. Id., p. 28. In light of all of these issues, the OCC requests that the Authority assess penalties for CL&P's imprudence and order CL&P to immediately commence regularly scheduled emergency management meetings with every

municipality in its service territory. In regard to ordering CL&P to immediately begin regularly-scheduled emergency management meetings, the OCC contends that any storm response plan can only be effective if the towns are aware of it, have had input into it, have practiced it, and believe in it. Id., pp. 29 and 30.

The Connecticut Conference of Municipalities (CCM) also claims that CL&P did not establish its Town Liaison program with appropriately trained personnel, failed to coordinate town restoration priorities, and failed to establish effective two-way communications. CCM Brief, pp. 8 and 9. The Towns of Newtown, Redding, Ridgefield and Wilton (Fairfield County Towns) also expressed their desire for improvements to CL&P's Town Liaison program. The Fairfield County Towns indicated that CL&P must improve communications between it and town officials. Further, the Fairfield County Towns argue that significant improvement of the Town Liaison program would help in this effort as it could provide municipal officials with accurate information. To be an effective program however, the Fairfield County Towns indicated that the Town Liaisons must be familiar with each town they are deployed to, the municipal officials, the town's restoration priorities, and the town's electrical system. Fairfield County Towns Brief, p. 6.

The Authority was provided with considerable examples of instances where CL&P's Town Liaison program did not function effectively. The Town of Ridgefield (Ridgefield) stated that it was apparent to municipal personnel in its EOC that communications between company liaisons and CL&P's operational supervisors were difficult and at times, simply impossible. Marconi PFT, p. 3. Further, Ridgefield asserted that CL&P did not do a good job of damage assessment. Ridgefield also stated that its public safety officials performed damage assessment on downed wires, poles and transformers and provided it to CL&P. CL&P in turn accepted the information, but seemed to have no way of integrating it into its operational plan. Id., p. 6. Additionally, the Towns of Newtown, Redding and Wilton expressed their frustration regarding CL&P's failure to share restoration priorities and broken promises to provide line crews to work alongside public works personnel. Llodra, Ketcham and Brennan PFT, p. 3. Simsbury officials claimed that CL&P's general statement regarding restoration priorities was to restore power to the largest number of customers first, which was in disagreement with its stated restoration priorities. Further, Simsbury noted instances where CL&P failed to provide accurate and timely information regarding when its crews would be assigned to work with Simsbury public works crews. Glassman PFT, p. 3. Simsbury also noted that its liaison was switched in between Tropical Storm Irene and the October Storm. The new liaison was unfamiliar with the town, its staff and its safety concerns. Simsbury stated that it was not until November 4, 2011, six days after the October Storm began, and after a CL&P vice president became involved in recovery operations, that meaningful contact with CL&P was established. Id., p. 5.

The Town of South Windsor (South Windsor) noted that there appeared to be a disconnect between the town's restoration goals and CL&P's restoration goals: opening roads versus the maximum number of people restored. Further, South Windsor stated that as liaisons came to South Windsor's EOC, there were times that they had no substantive information other than a generic corporate response. Galligan PFT, pp. 3 and 4. According to South Windsor, on occasion CL&P would provide information which indicated some residents had their power restored when they actually were still

without service. Eventually CL&P provided grid maps to South Windsor so they could better explain to residents why service had not been restored. South Windsor indicated that had this information been provided sooner, it would have been a great help to the town and to its residents. Id., p. 4. South Windsor also noted conflict with its restoration priorities and those of CL&P. According to South Windsor, its sewer plant had been operating on generator power for over 80 hours. In addition, 11 pump stations had experienced outages from 19 to 151 hours. Id., p. 5. South Windsor described an incident during Tropical Storm Irene where town crews waited at a location for four hours for a crew that CL&P had offered to send. When CL&P's crew did not show, the town crews left to work on another issue. Three hours later, CL&P's crew called and stated they were waiting for the town's crew at the original location. According to South Windsor, it was left with the impression that CL&P did not regard the town as a partner and was addressing its restoration priorities without regard for the town's priorities. Id., p. 6.

Tolland also expressed that there seemed to be issues with CL&P's communications and real-time coordination efforts through both storms. Werbner PFT, p. 3. CL&P could not inform Tolland where its crews were. Grid maps were not received from CL&P during Tropical Storm Irene and during the October Storm, "only reluctantly." Id., p. 3. There was an instance where Tolland officials came upon an out-of-state 15-truck crew at a local commuter parking lot. When asked if this crew could come and work in Tolland, the crew responded that it was assigned to South Windsor. Later, when Tolland officials spoke to its liaison, it was discovered that this particular crew should have been directed to Tolland and that no one at CL&P knew where in South Windsor the trucks had gone. Id., pp. 3 and 4. In addition, Tolland noted conflicts with CL&P's restoration priorities and its priorities. Tolland indicated that CL&P was more concerned about building up its restoration percentages to meet its goals as opposed to the town's priorities of opening roads or other individual concerns. Id., p. 4. Tolland commented that there were several items CL&P failed to do during both storms. Some of those items identified by the town included:

- Identifying and reacting to town priorities;
- Working with municipal efficiently to clear and open roads;
- Providing accurate information on work being performed and timelines for power restoration;
- Using their liaisons effectively;
- Providing municipalities real-time mapping; and,
- Building trust with municipalities and the public.

Id., pp. 6 and 7.

CL&P argues that its Town Liaison program was helpful during the storms, but its effectiveness was hampered by technology and information limitations. CL&P Brief, p. 23. CL&P further asserts that the AG and the OCC claim that the Town Liaison program was imprudent fails to satisfy the Authority's three-part test: (1) there was no evidence establishing a clearly understood definition of the standard of care by which the Town Liaison program can be measured; (2) there was no evidence as to whether the Town Liaison program failed to meet any such standard of care; and, (3) the AG and the OCC failed to demonstrate a causal connection between the alleged failure of the Town Liaison program and the storm costs they seek to disallow. While CL&P acknowledges and recognizes that there is a need for improvement to its Town Liaison program, it contends that the evidence in this proceeding does not establish that the program was imprudent. CL&P Reply Brief, p. 39. CL&P claimed that training for its Town Liaison staff has been performed prior to the 2011 Storms. In the 12 months preceding Tropical Storm Irene, CL&P held 3 training sessions for its Town Liaison personnel: September 2010, February 2011 and August 2011. Tr. 4/23/12, pp. 1102 and 1103. The last training session, held on August 23, 2011, was a Town Liaison program update. Its objectives were to define and clarify the roles and responsibilities for the Town Liaison staff, to provide an opportunity to hear first-hand accounts of lessons learned, and to provide a forum to discuss best practices and utilize peers as resources for success. CL&P Response to Interrogatory AG-8, Attachment 1.

CL&P also undertook other initiatives to improve storm related communications prior to Tropical Storm Irene. Some of these initiatives included adding over 100 additional employees to the Town Liaison roster to ensure coverage during major storms and providing copies of CL&P's Emergency Plan sent to each town via certified mail along with account executives providing second copies during personal visits with their town contacts. CL&P Response to Interrogatory AG-8. CL&P also contends that contrary to the claims of the AG and the OCC, the Town Liaison program was not a wide-spread failure. CL&P Reply Brief, p. 39. In this regard, the Authority notes numerous positive comments regarding CL&P's Town Liaison program during both storms from municipal officials in response to post storm surveys. CL&P Response to Interrogatory OCC-94. As previously stated, CL&P recognizes a need for improvement to its Town Liaison program. One of those areas of improvement that CL&P is addressing is information technology for its liaisons. Town maps have been developed for all 149 towns in CL&P's service area showing GIS based color-coded circuits overlaying street maps and reflecting critical customers (police, fire, hospital, etc.) with both street addresses and supply circuits. Meetings between Town Liaisons and municipal contacts have been ongoing regarding the use of these new maps, as well as verifying the critical customers. Further, CL&P stated that these meetings will continue as both utility and municipal emergency programs evolve and will include periodic validation of critical customers. CL&P is also creating an additional storm position, GPS Monitor, which will enhance situational awareness of crew locations and the efficiency of restoration crews via the use of GPS locational devices. CL&P Response to Interrogatory EL-36. Along with these measures, CL&P is implementing new real-time information displays for internal and external uses that will indicate town priorities, trouble spots, internal and foreign crew locations, work package stations, and restoration projections. CL&P also will implement enhancements to its outage map that will be available to customers and municipalities. CL&P Late Filed Exhibit No. 39, pp. 21-27. Along with these improvements, CL&P is undertaking measures to improve the

communication of restoration information to municipalities, as well as a formal training program for Town Liaisons and participation in exercises and drills. Id., pp. 18 and 19.

Liberty reviewed CL&P's Town Liaison program and its effectiveness through the two storms. Liberty noted that CL&P deployed 90 Town Liaisons to towns that had requested support and had opened its EOC after Tropical Storm Irene made landfall. According to Liberty, Town Liaisons generally met with town or emergency officials twice daily to share restoration status information and to coordinate town priorities. During the October Storm, CL&P deployed more than 100 Town Liaison staff. Liberty Report, p. 113. Liberty stated that conceptually, CL&P's Town Liaison process is good, but it was still in development when both storms hit. While CL&P was making adjustments and improvements in between the storms, Liberty found that the program was still relatively new and untested. Liberty further noted that critical infrastructure in towns such as water treatment plants, gasoline stations and hospitals, for example, were not easily identifiable in CL&P's outage system. This circumstance left many towns in difficult situations, such as without drinking water, and created difficulties in the prioritization of restoration efforts as well as creating public relations issues. Id., pp. 113 and 114. Liberty contends that the Town Liaison program brings inherent challenges to provide assistance and communications in a consistent fashion. As the program was a new approach for all involved, CL&P operations staff, Town Liaisons, and municipal officials, Liberty contends that it was a bold move to deploy 149 individuals, many of which had never served in this manner before. Liberty also asserts that CL&P had not established a list of critical infrastructure in each town, so there were challenges managing each town's priorities with the Company's restoration priorities. Id., p. 114. Liberty indicated a number of lessons learned and offered a number of recommendations regarding the Town Liaison program:

- CL&P had not clearly established municipalities' restoration priorities before the storms. In the future, CL&P should meet annually with municipal officers to discuss and confirm priorities. These priorities should be flagged on CL&P's circuit maps and in its electronic dispatch systems. CL&P should strive to communicate estimated restoration times until the critical infrastructure has been restored.

- Regional partnerships or associations may be necessary, as some towns do not have EOCs.

- Towns need timely and accurate restoration status information. CL&P has developed town-level tools that provide access to outage status information.

- Town Liaisons need to establish a relationship with the municipality in advance of the storm. CL&P will pre-assign Town Liaisons and designate a back-up who will meet periodically with town leaders to develop and ongoing relationship.

Id., p. 114.

Liberty also recommended that CL&P enhance its Town Liaison program to create a more coordinated and consistent approach to keeping community leaders and

municipal officials better informed of storm restoration status. Further, Liberty noted that CL&P should continue to build upon the Town Liaison program with a focus on consistency as well as developing a process by which restoration priorities are revisited or updated with each town on an annual or as-needed basis. Liberty stated that CL&P should expand post-storm follow-up to capture feedback on the quality of the Town Liaison relationship and services provided. Finally, Liberty stated that CL&P should formalize the process to secure and train employees that serve as Town Liaisons so that there are sufficient, well-trained resources. Id., pp. 129 and 130.

The Authority employed Liberty to conduct its own comprehensive review of the 2011 Storms. Authority review of the Liberty Report determines that none of its findings or conclusions with regard to the Town Liaison program are contradicted by the record in this proceeding. The Authority adopts the findings, conclusions and recommendations of the Liberty Report with regard to this issue.

The Authority notes that the record in this proceeding indicates that there clearly were deficiencies in CL&P's execution of its Town Liaison program. As previously discussed, the Town Liaison program was still in development when the 2011 Storms hit. Liberty Report, p. 113. Even the Witt Report indicated that CL&P's Town Liaison program was not fully developed. In addition, the Witt Report noted that program performance varied by person, location, and severity of damage. The Authority agrees with the representation that the Town Liaison program was essentially a work in progress at the time of the two storms. As noted previously, numerous positive comments were provided regarding the Town Liaison program after both storms. However, many negative comments regarding CL&P's communications were noted by Municipalities indicating deficiencies in the manner CL&P supported its municipal liaison program. Response to Interrogatory OCC 94. The Authority is acutely aware of the deficiencies that occurred during the both storms and the hardships that were created for the residents and officials of the towns affected. However, these deficiencies to CL&P's Town Liaison program were not wide-spread or state-wide, given the scope and scale of the 2011 Storms. The Authority believes that with the improvements already implemented or in the process of being implemented, CL&P's Town Liaison program should be capable of providing the bidirectional information, support, notification and communications between municipal officials and CL&P relating to electrical system restoration during emergency operations.

b. Restoration Estimate

Another aspect of CL&P's communications during the storms that was identified by the AG and the OCC as being imprudent was restoration times. The AG argued that CL&P mismanaged its communications to municipalities and the public and failed to provide complete and accurate information regarding restoration times. In particular, the AG argues that CL&P stubbornly held fast to its 99% restoration goal of all of its customers by midnight, November 6, 2011, even when it was an unrealistic objective. AG Brief, pp. 22 and 23. The AG claimed that CL&P repeatedly reaffirmed the 99% goal and that many towns and members of the public depended on its restoration estimate. Also, many customers in the hardest hit areas had left their homes during the early stages of the outage and returned in anticipation of CL&P's fulfillment of its restoration goal. Id., pp. 23-28. With its Central Division only 82% restored at midnight

November 6, 2011, CL&P knew or should have known before its own deadline that it would not be able to restore power to 99% of the residents. Id., pp. 28 and 29. Had CL&P given up on its unrealistic objective and provided a more honest restoration estimate, the AG argues that the Company would have taken the best approach towards protecting its corporate reputation and fostering more positive public opinion. Id., p. 30. The AG also contends that CL&P's methodology for arriving at its 99% restoration goal was flawed, as none of its models or formulas were designed or intended to assist in generating an accurate restoration estimate in light of the scale and scope of the two storms. Id., pp. 31-33. In these regards, the AG claims that CL&P was imprudent in the development of its restoration estimates and the communication to the public and public officials of its restoration estimates.

Similar to the AG, the OCC asserts that CL&P knew or should have known that its 99% restoration goal was unrealistic. Further, CL&P's insistence to the public that it would meet this goal was misleading. OCC Brief, p. 15. The OCC also questioned the rationale behind CL&P's development of its restoration estimate. According to the OCC, while CL&P had various models it could use to determine its restoration estimate, the actual goal was based upon a meeting between CL&P and NU officers. Id., pp. 15 and 16. The OCC took exception to CL&P not communicating until the evening of November 6, 2011, that it would be unable to meet its restoration deadline of midnight, even when the company acknowledged it was aware of this situation during the morning of November 6, 2011. Id., p. 16. Yet, according to the OCC, CL&P knew sooner than November 6, 2011, that it would be unable to meet its restoration goal. The OCC asserts that as early as November 4, 2011, CL&P was beginning to receive reliable information from internal sources that indicated the 99% restoration goal was unattainable. In addition, the OCC notes a CL&P briefing sheet from November 4, 2011, that appeared to anticipate the company's failure to meet its deadline. Id., pp. 17 and 18. The OCC argues that CL&P was not providing its customers with the best information available regarding restoration and this information is extremely vital during extended outages such as the October Storm. Unfortunately, according to the OCC, CL&P continued to persist in its message that the 99% restoration goal by November, 6, 2011, was attainable and because of this, customers suffered. Ultimately, the OCC requests that CL&P's actions with regard to the management of its communications to the public regarding restoration estimates be found imprudent and penalties be incurred in future proceedings. Id., pp. 19-21.

CCM also took issue with CL&P's actions in regard to the restoration estimates. The CCM did not dispute that predicting restoration estimates can be a challenging task given the scope and scale of the October Storm. However, CCM claims that CL&P's actions were negligent by its insistence on continuing to communicate the November 6, 2011 deadline. The CCM notes that municipal officials unsuccessfully appealed to CL&P for it to offer a more realistic restoration estimate. When power was not restored at the time that CL&P committed to, residents in some towns overloaded emergency shelters or failed to relocate to safer quarters as they were misled about the likely time of restoration. The CCM argues that CL&P's restoration estimate was either intentional or at best a negligent misrepresentation. This misrepresentation impacted upon municipalities' costs of the outage and increased the danger and risk to public health and safety. The CCM states that the best way to ensure this situation never reoccurs is for the Authority to hold CL&P accountable for its misconduct. CCM Brief, pp. 9 and 10.

CL&P disputes the claims from the AG and the OCC that the development of its restoration estimate was imprudent. CL&P contends that early in the recovery period of the October Storm, it developed its restoration estimate under extremely difficult circumstances as well as in response to understandable pressure from the public and public officials seeking guidance. CL&P states that it then committed the company to developing a restoration plan, securing additional resources and doing everything that was within its power in order to meet the restoration estimates. While CL&P noted that it was able to meet its estimate for 100% restoration, the fact that it did not meet the 99% goal was a reflection of the difficulties and challenges of the October Storm. CL&P Reply Brief, pp. 27 and 28. CL&P acknowledges that developing restoration estimates during the October Storm was far from a perfect procedure, but there was no support on the record to support the AG's claim that the company had provided multiple different explanations. Throughout the proceedings, CL&P asserts that it had provided a consistent explanation for how it calculated its restoration estimates. In addition, CL&P states that it has provided a detailed step-by-step description, consistent with its Emergency Response Plan, of how the restoration estimates were derived. Id., pp. 29 and 28. CL&P also disputes the AG's argument that the restoration estimates were derived and determined not by any formula or model, but via consultation of CL&P corporate officials. According to CL&P, the restoration estimate was a result of collaboration and multiple inputs, including projections developed pursuant to its Emergency Response Plan. CL&P claims that the record reflects that the process used to develop the restoration estimate was a process involving multiple individuals to arrive at a challenging, but still reasonable goal: 99% restoration by midnight on November 6, 2011, and 100% restoration by November 9, 2011. Id., pp. 30-33. CL&P also argues that its 100% projection (midnight of November 9, 2011), released three days after the storm on November 1, 2011, was accurate and based upon the same restoration projection process and data collection system that the company employed during Tropical Storm Irene. Further, this same process to estimate the restoration arrived at a 100% restoration on September 7, 2011, for Tropical Storm Irene, and the goal was arrived at one day earlier, on September 6, 2011. Id., p. 34. During Tropical Storm Irene, CL&P estimated that it would take three days to restore power to the last one percent of its customers, but in actuality it only took two days. Based upon this experience, CL&P estimated that it should be able to restore power to the last one percent of its customers in three days of the October Storm. This estimate prompted CL&P to estimate that it should be able to restore power to 99% of its customers at midnight, November 6, 2011, which was 3 days prior to the 100% target (November 9, 2011). This process of estimation was directly from CL&P's Emergency Response Plan that utilized "extrapolations based on application of logic and experience." However, CL&P explained that the last days and hours leading up to November 6, 2011 99% goal were in continual flux. CL&P was achieving improvements to the pace at which it was restoring customers and it was adding 294 additional crews to the restoration process. CL&P states that it was confident it could reach the 99% goal. However, CL&P argues that power restoration during catastrophic circumstances is by definition a fluid and uncertain process as a number of unforeseen developments during the morning of November 6, 2011, a substation fire in New Britain, cable faults in West Hartford and a number of unexpected additional outages, hampered its restoration process. In the end, CL&P was only able to restore power to 94% of its customers by midnight of November 6, 2011. Id., pp. 34-36.

According to CL&P, its restoration projections were estimates, not guarantees. As previously stated, CL&P claims that it was under considerable pressure from state officials, municipalities and its customers to provide restoration estimates. On November 1, 2011, three days after the October Storm, CL&P provided its estimates, earlier than what it had wanted. CL&P Late Filed Exhibit No. 68. CL&P acknowledges that it could have declined to provide the restoration estimates or issued an estimate laden with caveats that would have caused them to be less than helpful. Id. In creating its restoration estimates for the October Storm, CL&P followed the formulas and procedures within its Emergency Response Plan (ERP). CL&P's 100% October Storm restoration estimate proved to be accurate, as 100% of its customers were restored by midnight on November 9, 2011. CL&P states that the procedures in its ERP states that the formulas only provide a guide to determining restoration times and that company personnel developing the estimate will utilize extrapolations based upon application of logic and experience. CL&P notes that this also includes the following conditions:

- Historic storm restoration curves;
- Experience from prior storms;
- Knowledge of and experience with CL&P's electric system;
- Knowledge of current system conditions;
- Expectations about how many additional crews will be available and when additional crews will be available;
- Knowledge and experience about the process CL&P uses to collect and input data during the storm restoration process, including the company's knowledge that data collection is an imperfect process; and
- Any other factors and data deemed relevant by CL&P based on logic and experience.

Id.

Utilizing its knowledge and experience from Tropical Storm Irene, CL&P noted that restoration of the last one percent of customers took two days to complete instead of the projected three days. Due to the scale and scope of the October Storm, as well as issuing its restoration estimates sooner than the company had wanted, CL&P states that it reasonably estimated that it would be able to restore power to the last one percent of its customers in three days. Id. CL&P further notes that storm restoration is a dynamic process where there will be periods of time when the pace of restoration can be faster, on target or slower than estimated. During the entire restoration process, CL&P stated that it continually evaluated updated information, and due to the scale and scope of the October Storm, it was understandable that the data collection process would be imperfect. This, coupled with delays in the collection and inputting of data, would lead to understated and/or inaccurate data. Id. CL&P claims that there would have been little value to the State, municipalities or to the public had the company issued revisions to its restoration estimates on an hourly or even daily basis to reflect the normal fluctuations to the pace of the restoration process or to incorporate the company's discovery of understated or inaccurate data. Company e-mails indicated that up until the morning of November 6, 2011, CL&P reasonably believed that it would be able to meet its 99% goal. These beliefs were based upon additional crews being

added to the process as well as a 15% improvement to the pace of restoration on November 4, 2011 and November 5, 2011. Id. CL&P also believed that if it were able to improve the pace of restoration by an additional 20% then it was still reasonably plausible to meet the 99% goal. However, on the morning of November 6, 2011, CL&P also found it necessary to inform the State that it might not be able to meet the 99% goal. Id. By 6:00 p.m. on November 6, 2011, CL&P made an announcement that the 99% restoration goal would not be reached. Tr. 5/21/12, p. 2653. By midnight of November 6, 2011, CL&P had restored power to approximately 94% of its customers. CL&P Late Filed Exhibit No. 68. CL&P states that despite an additional 294 utility crews available on November 6, 2011, and despite its encouragement to all crews to work extended shifts, the 99% restoration estimate was not achieved for a number of reasons, including a substation fire in New Britain, cable faults in West Hartford and unexpected additional outages. Id.

Various facts were collected regarding CL&P and its 99% restoration estimate. In its management audit of CL&P, Witt Associates noted that during the October Storm, the company's Chief Operating Officer (COO) publicly released an internal restoration target and then stated a further goal that 99% of each town would be restored by a date certain without verifying that either was a realistic or appropriate statement to release to the public. Witt further noted that the CL&P COO publicly stated that the restoration target was perceived as a commitment, particularly when he affirmed it in subsequent statements. Witt Audit Report, p. 50. CL&P's own internal report, conducted by Davies Consulting found that there was no clear understanding of who had responsibility for developing or implementing a communications strategy during storm restoration. The problem was further compounded with the statement that 99% of customers would be restored two days prior to when they ultimately were. Davies stated that external stakeholders perceived that CL&P was either intentionally misleading the public or simply did not understand the scope of damage to its own system. Davies Report, p. 56. Liberty noted that CL&P was able to develop an overall projection as to when it would restore 99% of customers as it did during Tropical Storm Irene. However, at some point, the 99% restoration estimate turned into a commitment to restore 99% of customers in each town by November 6, 2011, which Liberty claimed was a much more aggressive goal than restoring 99% of all affected customers. When CL&P failed to achieve this goal, customers and municipal officials all were frustrated and inconvenienced. Liberty Report, pp. 111 and 112.

As discussed, these frustrations felt by customers and municipal officials led to contentions that CL&P was imprudent in its development of its restoration estimates and was imprudent in its failure to notify the public sooner than November 6, 2011, that the 99% restoration estimate was unobtainable. In analyzing CL&P's development of the restoration estimate for the October storm, the Authority notes that the company consistently utilized its ERP in the development of its restoration estimates. CL&P also stated that it utilized the same methodology for developing restoration estimates during the October Storm as it did during Tropical Storm Irene. During Tropical Storm Irene, these restoration estimates were sustained when CL&P completed its 100% restoration one day ahead of schedule. Based upon its knowledge and experience from Tropical Storm Irene and its ERP, CL&P developed its restoration estimates for the October Storm.

However, as noted in the Liberty Report, at some point, CL&P's 99% restoration estimate turned into a commitment to restore 99% of customers in each town by midnight, November 6, 2011. As of 6:00 a.m. on November 7, 2011, over a dozen towns had greater than 10% out of service, and in some cases higher than 30% out of service. CL&P Response to Interrogatory AG-101. CL&P claims that its estimates are not a guarantee, but CL&P continued up until the morning of November 6, 2011, to release press statements that the company was focused on the 99% restoration by midnight. Response to AG-120. Further, even though the restoration work that would have been necessary on Sunday November 6, 2011, to reach the 99% goal was going to be a considerable undertaking, the company maintained that its 99% goal was attainable. However, a number of unanticipated last minute incidents such as a substation fire, cable faults and unexpected additional outages undermined CL&P's restoration efforts. Ultimately, CL&P informed the public six hours prior to its own self-imposed deadline that the company would not be able to maintain its estimate.

Was there a better time than 6 p.m. on November 6, 2011, to inform the public that the 99% restoration estimate was not attainable or would it have been more realistic for CL&P to pull back from its midnight, November 6, 2011, estimate while maintaining its overall 100% restoration estimate? CL&P stated that it provided the estimates for the October Storm under considerable difficulty and in response to pressure from the public and public officials. However, customers and public officials relied upon CL&P to provide the most accurate restoration estimates that the company could produce. CL&P itself characterized the 99% restoration estimate as a "stretch goal." Tr. 5/21/12, pp. 2750 and 2756. Customers and public officials relied upon CL&P's expertise regarding restoration estimates and when the company was unable to meet its commitment, it caused considerable inconvenience and hardship to customers, businesses and municipalities. For these reasons, the Authority finds that CL&P actions were deficient and inadequate in the development and communication of restoration times to customers and public officials.

4. Emergency Planning and Organization

CL&P implements ICS organization principles to structure its organization during emergencies. ICS is a set of personnel, policies, procedures, facilities, and equipment, integrated into a common organizational structure designed to improve emergency response operations of all types and complexities. ICS is a subcomponent of the National Incident Management System (NIMS), as released by the U.S. Department of Homeland Security in 2004.

CL&P states that its implementation of ICS and its ERP provided a good framework for managing the restoration, but there was some confusion during the 2011 Storms as to responsibilities, and questions as to "scalability."[15] CL&P notes that conclusions of the Liberty Report support that the company's implementation of ICS provide an effective framework for an effective response, and that the Classification of Service Outage Events in CL&P's emergency plans provides helpful guidance in determining the amount of required resources. CL&P notes that it plans to improve on

[15] Scalability refers to the expansion of an organization as the size and scope of an emergency event increase.

identified concerns with ICS scalability. Finally, CL&P requests that the Authority determine that the company has until December 31, 2012, to submit a compliance filing providing an update on the status of its review of consultant recommendations. CL&P Brief, pp. 25 and 26, 32.

CL&P asserts that it recognizes a demonstrated need for improvement in its emergency operations. CL&P cites the following as improvements in its emergency preparedness and response procedures:

- The company has instituted an internal reorganization that included creating a new position of Senior Vice President of Emergency Preparedness, charged with improving preparedness and emergency response;
- CL&P has implemented a "Powered Up" program aimed at guiding its progress to achieve "best in industry" performance in six focus areas: preparedness, scalability, coordination, communications, situational awareness and infrastructure hardening;
- The company has conducted outreach to municipalities to better understand their concerns;
- The company has fully cooperated with all consultants and post-storm investigations;
- CL&P has enhanced its coordination and cooperation with DEMHS;
- The company has increased storm preparedness and response training;
- CL&P has substantially increased its regular tree maintenance and enhanced tree trimming in 2012;
- The company plans to file a revised ERP by July 1, 2012, with the Authority that will reflect many improvements, including enhanced scalability;
- CL&P will file a system resiliency program with the PURA by July 3, 2012, which will include proposals for additional tree trimming and certain distribution equipment upgrades; and
- The Company has initiated technology improvements to enhance its restoration and response.

Id., pp. 26-29.

Liberty found that ERPs are generally useful and provide adequate direction to guide major storm response as well as clear definition of responsibilities and management expectations. Liberty also concluded that the event classifications are in keeping with standard utility practice, and that it calls for engagement of all available resources for events that result in outages to 20,000 customers or more. However, Liberty determined that CL&P's ERP required certain improvements to make the plan

more usable and to further clarify and refine roles and responsibilities. Liberty Report, pp. 11-22.

The AG states that CL&P's existing ERP presents a number of concerns. First, it did not adequately anticipate the scale of the 2011 Storms, since it defined the most severe event as one that plans for an outage of greater than 100,000 customers, whereas the October Storm resulted in outages of more than 800,000 customers. Second, CL&P's plan was reactive, since it precludes activation of Area Command prior to the actual onset of storms. Finally, that CL&P's ERP did not adequately stress training and drills. AG Brief, pp. 9 and 10.

The AG furthermore states that CL&P's failure to drill or exercise its ERP and evaluate results was imprudent. The AG notes that CL&P did not drill or exercise its ERP for at least five years prior to the 2011 Storms and that there is no evidence that the company ever drilled for storms as large as the 2011 Storms. The AG further asserts that this lack of training and preparation was apparent during the response to the October Storm. Id., pp. 11 and 12.

The OCC agrees with most of the Liberty Report recommendations regarding ERP improvements, with the exception that CL&P should have more outage classification levels in its plans. The OCC also asserts that the ERP should be amended to place a higher priority on "cut, clear and make safe" activities and road clearance work (CCMS Work), leaving restoration of power to large numbers of customers until later in the restoration process. Additionally, the OCC recommends that the ERP have detailed plans for allocating resources to pole replacement activities. Furthermore, the OCC states that the 2011 Storms highlight a need for better transmission emergency planning and "infrastructure updating," and requests that the Authority adopt a number of findings and orders to improve transmission system level outage restoration practices and material condition. OCC Brief, pp. 36-49.

The CCM states that the CL&P ERP should be revised to make CCMS Work a higher priority in the restoration process.[16] The CCM documents a number of instances in which access to individuals with health issues was impeded by downed wires on public roads. The CCM further states that downed wires and trees impede egress of residents from their homes to obtain necessary supplies. The CCM asserts that CL&P is unwilling to make opening all public roads a top safety priority, and that the status quo situation is unacceptable. CCM Brief, pp. 1-5.

Additionally, the CCM states that CL&P's ERP does not include a comprehensive list of critical care facilities. Further, the CCM states that leaving restoration priorities to the company's judgment "does not work," and cites instances of facilities such as water treatment plants and prisons coming dangerously close to exhausting fuel supplies. The CCM cites an example in Tolland where total road clearing efforts, presumably by CL&P did not take place for four to five days. Id., pp. 4-8.

The towns of Newtown, Redding, Ridgefield and Wilton (collectively, the Four Towns) assert that CL&P should assign at least one line crew to each town for road

[16] These activities involve EDC lineworker personnel assisting road clearing personnel in clearing fallen wires from public ways.

clearing efforts. The Four Towns also state that CL&P should train town electricians to de-energize and ground wires for road clearing efforts. Four Towns Brief, pp. 3-5.

In rebuttal to the above concerns of the public parties, CL&P states that it conducted various drills in the years leading up to the 2011 Storms and also participated in emergency planning meetings with the Department of Emergency Management and Homeland Security (DEMHS) and other government agencies in 2011. CL&P also states that it files storm reports with the Authority after each major storm, and that it filed a new emergency plan with the PURA on June 1, 2011, that included improvements recommended in the Decision dated December 1, 2010 in Docket No. 10-03-08. Therefore, it took numerous actions to ensure its emergency preparedness prior to the 2011 Storms. CL&P Reply Brief, pp. 12-15.

The Authority employed Liberty Consultants to conduct its own comprehensive review of the 2011 Storms. Upon review of the Liberty Report, the Authority determines that none of its findings or conclusions with regard to Emergency Planning and Emergency Organization issues are contradicted by the record in this proceeding. Thus, the Authority adopts the findings, conclusions and recommendations of the Liberty Report with regard to Emergency Planning and Emergency Organization. Below, the Authority addresses certain issues that are outside the scope of the Liberty Report or that require additional analysis.

There has been much discussion in this proceeding and elsewhere regarding the definition of the worst weather event as an outage affecting "greater than 100,000 customers" also known as Severity Level 5, the worst weather event. Liberty determined that the event classifications are "in keeping with standard utility practice," and that beginning with Severity Level 3 (outages to 20,000 customers or more), CL&P calls for full engagement of all resources available. Therefore, CL&P's ERP severity level classifications called for an earlier engagement of resources than if it, for example, set its Severity Levels at a higher number of customer outages. The Authority does not agree with the conclusion of some Participants that the Severity Level 5 classification at "greater than 100,000 customers" establishes any expectation that 100,000 customers is the worst event expected. Rather, Severity level 5 establishes an earlier commitment of full resources to an event than would a higher outage level definition. The Authority therefore agrees with the findings of the Liberty Report on this matter. However, the Authority notes that Public Act 12-148, An Act Enhancing Emergency Preparedness and Response, requires that ERPs address plans for restoring power to 10%, 30%, 50% and 70% of an EDC's customers. The Authority will review those plans in Docket No. 12-06-11, PURA Review of Connecticut Public Service Company Plans for Restoration of Service that is Interrupted as a Result of an Emergency.

The OCC and the CCM request that the Authority take action to direct CL&P to place higher priority on CCMS Work. According to the OCC, the record indicates that CL&P shifted resources from CCMS Work on November 2, 2011, when 25 roads in Tolland were still not passable for emergency vehicles or school buses. The OCC states that what is most troubling, is that some towns were fully restored, or nearly so, before CL&P began CCMS Work in others. The OCC states that the highest priority should be assigned to CCMS Work and restoration to critical infrastructure. The OCC requests the Authority to immediately order CL&P to make this change. The OCC further states

that towns should educate their residents to understand that power outages would last longer than would otherwise be necessary (as a result of this prioritization of lineworker resources). OCC Brief, pp. 40-43.

The Authority agrees with the concerns of the CCM and the OCC that clearing of roads should be one of the highest priorities to assure public safety. The Authority also believes that large blocks of customers who could easily be restored should not be ignored and left without power. This is clearly an issue that requires balance, not over-reaction in either direction. The Authority also calls to the attention Liberty's conclusions on this matter:

> "…the crews worked with the towns for a longer period than they should. During this time, the crews were not doing restoration work. It is the widely accepted practice in the electric utility industry to coordinate with governmental entities to put top priority on clearing downed wires and poles so that public workers may clear the roadways. The assignment of crews to work with towns is unusual, and in these two storm responses, was a problem."

Liberty Report, p. 165

Liberty concludes that committing crews to CCMS Work unnecessarily hinders storm restoration efforts, illustrating the sharp difference of opinion on this issue.

The Authority does not believe that the evidence of CCMS Work warrants any immediate action, but rather, any action should be thoughtful and deliberate. The electric system cannot be segregated into areas that serve critical care facilities, and general restoration areas, as seems to be the precept of the OCC's arguments. Further, the participants should recognize the public safety consequences of not restoring power to large areas, even though such areas may not directly supply critical care facilities. Finally, excessive allocation of crews to CCMS Work, while ignoring restoration efforts, as an outage progresses results in diminishing returns, as crews are diverted to smaller streets while large areas remain unrestored. The Authority does not agree that it is appropriate that it issue orders which would force such a result; rather, the electric utility companies should be capable of applying sound judgment to dispatch line crews to other vital public safety-related work. The same principle applies to the Four Towns' request to allocate each municipality a fixed number of line crews. This would result in inefficient dispersion of line crews among facilities with varying levels of damage, such that areas with little damage would conceptually receive equal resources as communities with extreme damage. The Authority finds that this is not in the public interest.

The Authority notes that CL&P is presently involved in a working group with DEMHS and the municipalities to determine enhancements in this area. Tr. 5/24/12, pp. 2849 and 2850. The Authority believes that CCMS efforts are among the highest priority activities during restoration from major storms, since blocked roads impede access of emergency services to imperiled residents. CL&P's ERPs as well as its line crew dispatch decision making should reflect this prioritization. The Authority concludes

that the proper action is that CL&P should continue negotiations on this issue with the towns and DEMHS, and modify its restoration practices to reflect an efficient use of line crews while ensuring public safety. The Authority further notes that the plethora of other improvements underway at CL&P, including infrastructure hardening and improvements in resource procurement practices, should vastly improve early storm response in the future, freeing resources for both CCMS Work and restoration activities.

In response to the Four Towns' request that CL&P certify local electricians to de-energize and ground high voltage conductors to assist road clearing work, CL&P states that using such electricians, who hold an E-1 license, to perform high voltage work violates Occupational Health and Safety Administration (OSHA) requirements, the National Electrical Safety Code (NESC) and the National Electric Code (NEC). CL&P also states that OSHA prohibits E-1 licensed electricians from approaching within 10 feet of a high voltage conductor, that the NESC requires workers to complete a 4-year apprenticeship program prior to working on high voltage equipment, and the NEC only qualifies E-1 licensed electricians to work on low voltages typically found in residential and commercial buildings. Furthermore, E-1 licensed electricians lack the proper safety equipment to work on high voltage lines. Finally, CL&P notes that it used E-1 licensed electricians to perform work on single service lines, which are lower voltage and within the E-1 electrician license restrictions. CL&P Reply Comments, pp. 49-51.

The Authority will not require CL&P to train local electricians to de-energize high voltage conductors as requested by the Four Towns. Clearly, such an initiative would violate safety codes and expose the workers to the potential of great bodily harm, and is not in the interest of public safety. The Authority believes that the proper resolution of the issue is an earlier acquisition and deployment of qualified resources, which will be a consequence of the actions taken which shall be ordered in this Decision.

The Authority agrees with concerns expressed by the OCC and in CL&P's own consultant's report that find a lack of organization and integration of transmission system repair and restoration into the overall restoration effort.[17] CL&P is expected to file its revised ERP by July 1, 2012. The Authority expects CL&P's revised ERP to reflect enhancements to reflect these concerns and will review them during the course of its review in Docket No. 12-06-11. The Authority also notes that CL&P's review and implementation of various reviews and recommendations resulting from the 2011 Storms is a long-term effort and shall order CL&P to report to the Authority on its progress in reviewing and implementing those recommendations.

With regard to concerns that there was a lack of drills prior to the 2011 Storms, the Authority notes that the Liberty Report did not find that the lack of drills inhibited the company's response. In fact, Liberty noted that a drill took place days prior to Tropical Storm Irene, which was helpful in preparing for the oncoming storm. Liberty Report, p. 18. CL&P plans to conduct several large scale drills in 2012, including coordination with a State exercise in late July 2012. CL&P acknowledges the need for it to expand and coordinate emergency training and drills with the State and municipalities. The company states that it plans to conduct its own functional drill in July 2012, prior to its

[17] The Liberty Report did not note any deficiencies in transmission system organization or restoration activities.

participation in a statewide drill July 28-31, 2012. CL&P Brief, pp. 26-28. The Authority finds the company should conduct large scale exercises at least annually going forward.

The CCM requests the Authority to order CL&P to establish a "hard and fast" listing of critical facilities by restoration priority. CCM Brief, p. 6. CL&P states that it has already solicited a list of critical facilities from each municipality in Connecticut, including fire stations, police stations, hospitals and sewage treatment facilities and has established circuit maps that show each facility's location for use in restoration activities and restoration status updates. CL&P also states that a firm list of all critical facilities is not practical because critical facility definitions vary from town to town and by the time of year the event occurs (for example, schools during the school year). CL&P Reply Brief, pp. 52 and 53. The Authority believes that CL&P should continue working closely with each municipality to establish critical facilities, but that a commonly used definition of what constitutes a critical facility should be applied to each municipality. However, there needs to be flexibility since each storm is different, and situations may arise during each storm that require judgment and exercise of discretion in determining which facilities are critical at any given moment. The Authority notes that, in restoration from the October Storm, there was extensive deliberation between CL&P and government officials regarding whether restoring telecommunications towers should be a top priority given the failing wireless network. This is an example of how each major storm has unique characteristics and as such, the assignment of resources must be flexible to adapt to changing situations.

Relative to CL&P's new ERP filed by July 1, 2012, the Authority expects many improvements in that filing. However, further changes to the ERP will likely be necessary to reflect this Decision and the results of the company's review of other reports on the 2011 Storms. The Authority will thoroughly review the revised ERP's enhancements, including emergency organization issues identified in this proceeding. In its Written Exceptions, CL&P requests that ERP issues related to ICS implementation, for which it has identified conflicting recommendations for improvements, be addressed in Docket No. 12-06-11, PURA Review of Connecticut Public Service Company Plans for Restoration of Service that is Interrupted as a Result of an Emergency. However, the Authority is required by Public Act 12-148 to render a decision in that proceeding by September 1, 2012, which leaves the Authority with insufficient time to consider complex issues such as ICS. Therefore, the Authority will consider ICS issues in its Docket No. 12-06-09, PURA Establishment of Industry Performance Standards for Electric and Gas Companies, which is due by November 1, 2012.

5. Maintenance, Inspection and System Design

CL&P states that in 2007, it embarked on a five-year tree trimming cycle, which will be completed by year end 2012. CL&P also states that its current tree trimming program has complied with the funding allowances in its last rate proceeding, Docket No. 09-12-05. Further, its spending on vegetation management was either consistent with or exceeded the amounts allowed in rates from 2006 through 2010. The company also states that its distribution system capital spending program for the past four years are consistent with funding levels in prior rate case decisions. CL&P asserts that the

Liberty Report noted that it has a superior distribution pole specification and ground line inspection program and that wood pole conditions did not appear to contribute materially to the effects of the 2011 Storms. CL&P Brief, pp. 17-19.

Regarding plans for future improvements in its infrastructure, CL&P indicates that it has allocated an additional $7.3 million in 2012 to support additional maintenance tree trimming and an additional $20 million to support additional enhanced tree trimming. CL&P intends to submit a "system resiliency filing" by July 9, 2012, which will include proposals for additional tree trimming and certain distribution system equipment upgrades.[18] Id., pp. 28 and 29.

The OCC supports some changes to the EDCs' vegetation management practices, but questions whether increasing line clearance and tree removal efforts is a "complete solution" under major storm conditions. The OCC states that complete clearing of limbs overhanging lines is rarely practical or achievable and may increase the number of hazardous trees. The OCC suggests a more measured and considered approach to vegetation management, based on more frequent visual inspection and branch reduction. The OCC requests the PURA order a detailed study comparing the performance of circuits that received enhanced trimming to those that received routine maintenance. The OCC believes that the EDCs should increase emphasis on hazard tree removal. The OCC also notes that CL&P's mid-cycle trimming efforts have declined in recent years and suggests the Authority order the company to recommence mid-cycle trimming at the level approved in the last rate case. OCC Brief, pp. 56-61.

Liberty found that the company's performance-based tree trimming program leaves extensive vegetation in place that becomes problematic during a major storm and recommends that CL&P transition to a four-year interval based trimming cycle. Liberty also found that the amount of overhanging limbs left in place after standard tree trimming is accomplished is another concern. Liberty notes that its Enhanced Tree Trimming (ETT) program removes overhanging limbs outside the normal trim zone, but this program is not applied throughout CL&P's system. Liberty further found that the hazardous tree removal budgets represent a concern, in that, given the high cost of removing a tree, hazardous tree removal is restricted to the most critical situations. Liberty Report, p. 35.

The Authority notes the conclusions of Liberty and other reports regarding the necessity of a four-year maintenance tree trimming program. The Authority finds the evidence and expert opinion on this subject is conclusive and that CL&P should implement a four-year-based trimming cycle, and so orders the company to do so. The Authority will examine funding requirements of this change in Docket No. 12-07-06, Application of The Connecticut Light and Power Company for Approval of its System Resiliency Plan.

With regard to other infrastructure maintenance issues, Liberty determined that wood pole failures did not materially contribute to the effects of the 2011 storms. Liberty also determined that CL&P's pole maintenance program is adequate to maintain the poles to NESC safety requirements. Liberty did, however, determine that a high

[18] This filing is required by the Settlement Agreement approved in Docket No. 12-01-07.

number of cross arms were broken during the storms and that CL&P should institute a program to verify the material condition of wood cross arms. Id., pp. 40 and 41.

The Authority determines that none of the Liberty Report's findings or conclusions with regard to vegetation management, system maintenance and system design issues are contradicted by the record in this proceeding. Thus, the Authority adopts the findings, conclusions and recommendations of the Liberty Report with regard to vegetation management, system maintenance and system design issues. Below, the Authority addresses certain issues that are outside the scope of the Liberty Report or that require additional analysis.

With regard to the OCC's recommendations for modifications to maintenance tree trimming, the Authority is receptive to ideas that would make tree trimming more effective and cost-effective. However, any departure from the straightforward, four-year trim cycle recommended by the Liberty Report (which, according to Liberty, is the industry standard) would need substantial proof of its effectiveness supported by case experience in other jurisdictions. The Authority finds that Connecticut should not be used as a test case to determine whether any non-standard approaches are effective or not. The Authority will consider modifications to the Company's tree trimming programs in Docket No. 12-06-09.

With regard to the OCC's recommendation that mid-cycle trimming should not be permitted to lapse, the Authority finds that this is an issue properly addressed in Docket No. 12-06-09. Mid-cycle trimming is primarily oriented toward reducing routine vegetation contacts, not major storm related contacts. The record demonstrates that major storm related vegetation contacts primarily originate from outside the normal trim zone and that enhanced tree trimming is the appropriate program for reducing the threat from vegetation outside the trim zone. Liberty Report, pp. 29, 34. The Authority will examine this issue more closely in Docket No. 12-06-09.

The Authority endorses the OCC's recommendation that the performance of circuits receiving ETT should be studied. The Authority believes CL&P already has extensive data and has already done much analysis in this area; however, a formal study ordered in this proceeding would be timely. The Authority will order the company to submit a study on ETT program effectiveness.

The OCC requests that the Authority find CL&P imprudent for failing to deploy mobile data terminals (MDTs) in line trucks, allegedly in violation of the PURA's orders in Docket No. 10-03-08. According to the OCC, failure to deploy MDTs adversely affected damage assessment and outage restoration activities by delaying restoration activity updates, which were often not relayed from crews in the field until the end of the day. OCC Brief, pp. 31-34.

CL&P states that the issue of MDT deployment in line vehicles is still under review. To date, its analysis indicates that, rather than deploying MDTs in each vehicle, it is equally efficient to assign laptops with air cards to field supervisors, who are directly overseeing the work of several line crews and should be able to provide the equivalent communications capability. Furthermore, during a major storm, MDT equipped vehicles would only exist in a small minority of line crews, since the vast majority of crews would

be from mutual assistance and not have MDTs. Field supervisors with laptops would oversee those crews, and thus provide them with equivalent electronic communication capability. Tr. 4/24/12, pp. 1242-1248.

The Authority has not ordered CL&P to deploy MDTs in line vehicles. In Docket No. 10-03-08, the Authority's consultant, Jacobs Consultancy, recommended in its report that CL&P "[c]onsider accelerating programs intended to provide mobile data terminals in line trucks." On this matter, the Authority has not reached a conclusion that CL&P must fully implement MDTs; however, CL&P should implement some technology that provides real time electronic communication capability to enable real time status updates from the field on restoration efforts. An equally important matter is that, many crews who were capable of relaying restoration status did not do so. Tr. 4/24/12, p. 1111. The Authority finds comprehensive action should be taken by the company to ensure real time data is available from all crews, both the company's own crews and from mutual assistance and contractors, and that action should be taken to assure those crews use that technology. The Authority orders the company to take such actions.

6. Storm Monitoring, Preparations and External Assistance

The AG states that CL&P took a number of steps to solicit assistance in preparation for Tropical Storm Irene, but was incapable of reacting quickly to the October Storm, when given less time to prepare. According to the AG, CL&P's own weather forecasts of October 28, 2011, showed that significant amounts of heavy, wet snow were expected to fall the next day, and by that afternoon, those forecasts called for as much as a foot of snow. However, in spite of those forecasts, as of 5:15 p.m. on October 28, 2011, CL&P had not requested any outside crews, had not pre-positioned any employees or materials, had not set up satellite staging areas, had not deployed liaisons to the towns, had not implemented its incident command structures, had not implemented its ERP and had not opened an emergency operations center. Finally, the AG asserts that CL&P did not properly manage outside crews once they arrived. AG Brief, pp. 7 and 8.

In rebuttal to the AG's concerns above, CL&P notes that the AG did not complain about the process CL&P used to obtain mutual aid during Tropical Storm Irene. Rather, the impact of the October Storm was attributable to larger and earlier snowfall than was forecast. CL&P also asserts that the AG ignored many of the steps CL&P did take in advance of the October Storm, such as placing all of its line crews and contractors on-call for the weekend. CL&P also notes that its EOC was opened at 2 p.m. on October 29, 2011, which was exactly the same time the State opened its center, and that the AG has not claimed the State was imprudent in not opening its center earlier. CL&P states that its requests for mutual aid during the October Storm were not late in comparison to other utilities, as no other utilities had requested aid during the October 29, 2011, morning conference calls. Finally, CL&P notes the Liberty Report's findings that the company's requests for assistance had disappointing results for reasons that were mostly beyond its control and that it is commonly accepted practice that utilities do not request assistance until they have actually experienced damage. CL&P Reply Brief, pp. 15-19.

With regard to oversight of outside crews, CL&P notes Liberty found that the company closely coordinated its oversight process and that it worked well. CL&P claims that it assigned supervisors to manage each work crew, in a ratio of between one and five crews per supervisor. Finally, CL&P claims that it provided the necessary levels of support service to outside crews and that by the end of the October Storm, it had managed 2,917 crews, which was over 10 times its normal complement. Id., pp. 19-21.

Regarding storm monitoring, Liberty noted that the October Storm was not in weather forecasts until October 27, 2011, two days prior to its occurrence, which did not give adequate time to prepare. Liberty concluded that the CL&P Storm Team lacks confidence in the present weather vendor and that it should address and correct issues which detract from confidence in that vendor. Liberty also determined that CL&P does not have an adequate pre-storm damage and resource prediction model to support planning and deployment decision making. With regard to pre-storm planning, Liberty determined that CL&P properly mobilized support resources and internal field response personnel prior to the storms. However, Liberty concluded that CL&P did not set the necessary level of external crew mobilization, and that it did not set up satellite staging areas in a timely manner. Id., pp. 49, 56.

Upon review of the Liberty Report, the Authority determines that none of its findings or conclusions with regard to storm monitoring, preparations and external assistance issues are contradicted by the record in this proceeding. Thus, the Authority adopts the findings, conclusions and recommendations of the Liberty Report with regard to storm monitoring, preparations and external assistance. Below, the Authority addresses certain issues that are outside the scope of the Liberty Report or that require additional analysis.

The October Storm clearly presented a challenge to CL&P to adequately prepare for the storm. A snow event was not predicted until two days prior to its arrival, and only a day before, predicted that the storm would bring heavy, wet snow. Furthermore, the magnitude of the damage to the system that resulted from the snow coincident with foliage existent on the trees was not fully predicted prior to this storm. For example, the December 1, 2011 Witt Report, noted that on the morning of the October Storm, no utilities in the Northeast had requested mutual aid in anticipation of the approaching storm. Witt Report, p. 21. The Authority believes that one of the greatest lesson to be learned from the October Storm is that decision making should be very conservative before an event of unknown impact. The Authority specifically notes the following conclusion of the Liberty Report:

> CL&P was not aggressive in seeking outside help in advance in the October Storm. There was enough of a threat late Friday and early Saturday to justify a specific request for outside help in addition to the 30 contract line-crews already acquired, especially in light of the experience with Storm Irene only 60 days before.

Liberty Report, pp. 79 and 80.

Based on the Liberty findings and lack of CL&P initiative in obtaining assistance in advance of the October Storm, the Authority determines that CL&P's response to the October Storm was deficient. In the future, CL&P should place higher priority on taking aggressive action in anticipation of such events, including pre-staging resources and making earlier attempts to acquire resources.

The Authority finds that CL&P should establish a heightened state of readiness and be able to clearly document that such a state exists. In conjunction with this expectation, the Authority will order CL&P to report on actions it has taken to establish a heightened state of readiness in anticipation of a major storm including an assessment of its own lineworkers and lineworkers from sister companies and contractors. CL&P shall also state the mutual assistance organizations to which it belongs and the resources likely available from those organizations. The Authority requires that the primary emphasis of this report focus on those resources that are likely to be available during the first 48 hours of a major storm event to assist in efforts to ensure public safety. The Authority will also order the company to demonstrate its efforts to establish a heightened state of readiness. Recommendations EPP-10 and EPP-12 of the Davies Report already relate to this concern; however, the Authority finds that the benefits of such a heightened level of preparedness to public safety are great enough to warrant implementation. The Authority also requires that this report be filed by August 8, 2012, to coincide with its review of the Emergency Plan submittals required by statute and with the prime hurricane season and following winter period. The stated resources relied on in this report should be generally available annually from July 1 through the following March 31.

The Authority notes that utilities heavily rely on mutual assistance during major storm events. The Authority also notes the CL&P consultant recommendations that CL&P explore joining mutual assistance groups further away from Connecticut. Although the Authority agrees that while this option should be explored, the emphasis should be placed on ways to improve the responsiveness of mutual assistance in nearby regions. In this regard, the Authority finds that Liberty Report Recommendations VIII-CL&P-1 and VIII-CL&P-2 provide guidance to improve mutual assistance. CL&P reported that discussions are underway at various organizations on ways to improve the mutual assistance process. Because of the importance of this issue and its relationship to the heightened state of readiness concept above, the Authority will order CL&P to report on its efforts to improve the mutual aid process.

7. Damage Assessment

CL&P states that both its consultant's report and the Liberty Report identified opportunities for improvement in its damage assessment process, including its Outage Management System and use of technology improvements to facilitate the information gathering and reporting process. CL&P Brief, p. 25.

The AG states that, although CL&P had a defined process for conducting damage assessments, it was not executed well. The AG cites Simsbury and Ridgefield as towns that were unable to obtain accurate damage assessments for many days after the October Storm. The AG states that damage assessments were not reported in a timely manner and not consistently used to plan restoration activities and prioritize work.

Finally, the AG states that CL&P's failures with respect to the damage assessment process were largely the consequence of not having a robust training and certification program for non-line damage assessors/patrollers. AG Brief, pp. 15-17.

Liberty found that CL&P has in place a basic structure of a centralized damage assessment process, but that the company did not use damage assessment data on a system-wide basis to estimate resource requirements. Liberty also found that the damage assessment process was inconsistently applied at the district levels. According to Liberty, CL&P has a good plan for updating outage restoration status, but that it did not perform this function well during the 2011 Storms. Liberty Report, pp. 89 and 90.

Upon review of the Liberty Report, the Authority determines that none of its findings or conclusions with regard to damage assessment issues are contradicted by the record in this proceeding. Thus, The Authority adopts the findings, conclusions and recommendations of the Liberty Report with regard to damage assessment.

8. Post-Storm Activities

The Liberty Report found that CL&P has a good plan for conducting post-storm activities and performed well in all respects. However, Liberty also found that there is opportunity for improvement in the post-storm critique process. Liberty Report, p. 177.

The Authority determines that none of its findings or conclusions with regard to post storm activities issues are contradicted by the record in this proceeding. Thus, the Authority adopts the findings, conclusions and recommendations of the Liberty Report with regard to post storm activities.

9. Lineworker Staffing

CL&P requests the Authority find that the company's staffing levels are appropriate, or that it defer analysis of this issue to an appropriate docket in which rates can be amended or rate deferrals can be authorized. CL&P Brief, p. 32.

The OCC states that CL&P's lineworker count has decreased from 744 in 2006 to 704 in 2011, and that its count peaked at 774 in 2008. The OCC also asserts that a large number of lineworkers are expected to retire in the next five years and the company has no clear plans to replace them. By allowing attrition of its lineworker staff, CL&P may have diminished its capacity to respond to storms with in-house resources, and placed first responders and the general public at greater risk. Accordingly, the OCC requests that the PURA conduct a review of lineworker staffing levels, require CL&P to submit periodic reports and require the company to conduct periodic studies of lineworker resources. OCC Brief, pp. 51-53.

The Liberty Report found that CL&P's lineworker staffing level is reasonable. Liberty states that while CL&P has a slightly high ratio of customers per lineworker, it is significantly lower on miles of distribution line per lineworker. Liberty also notes that utilities-base lineworker staffing on the level of normal revenue and maintenance workload, routine storm requirements, and productivity and process improvements, not on major outage response. Liberty Report, pp. 167 and 168.

The Authority supports the conclusions of the Liberty Report on lineworker staffing, as it relates to non-major storm conditions. The Authority agrees with the premise of the OCC's concern, which, at its core, is a concern over the lineworker resources that can be brought to bear during the initial phases of a major storm event. As discussed previously, the Authority below orders the company to report on the various resources that would be available to it in a major storm. The Authority believes this approach comprehensively addresses concerns over staffing issues as they relate to major storms. Furthermore, the Authority will further analyze lineworker staffing in Docket No. 12-06-09 as required by Public Act 12-148.

C. UNITED ILLUMINATING

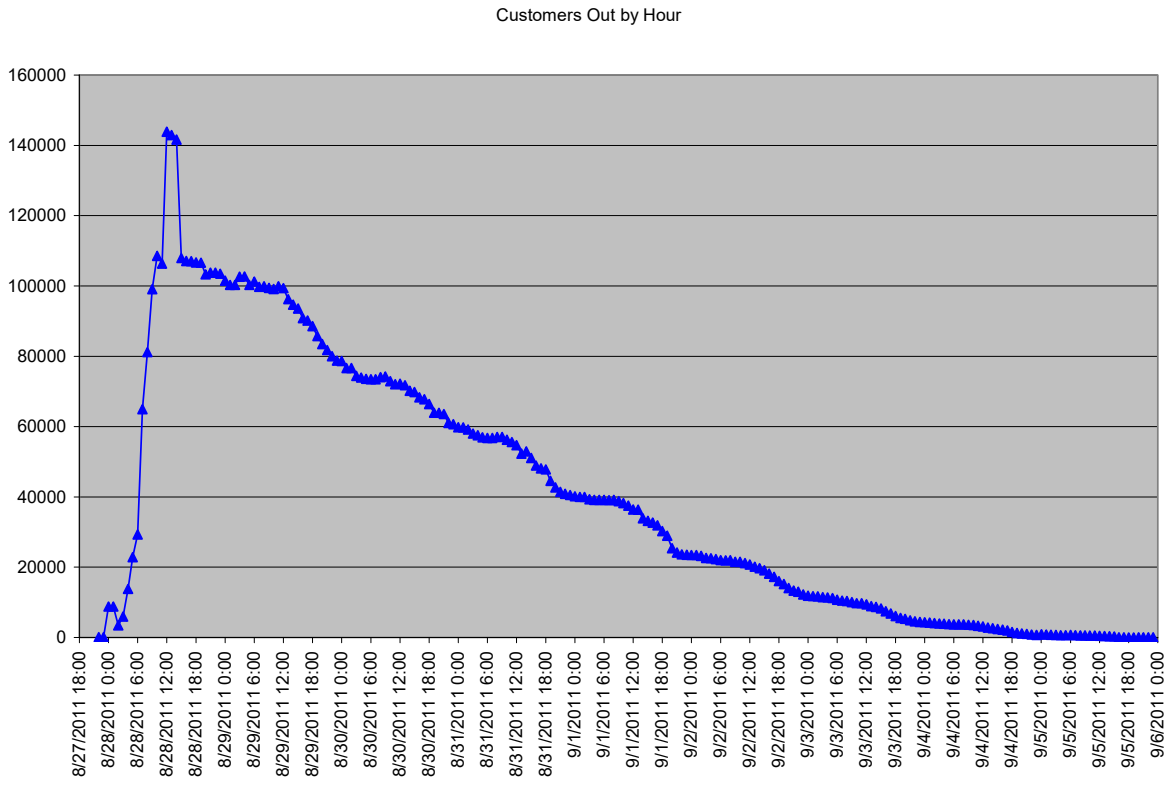
1. Effect of Storms on UI Customers

a. Tropical Storm Irene

Tropical Storm Irene caused a peak outage of 143,873 customers at noon on August 28, 2011. Due to that storm, 210,332 total outages took place affecting 66 percent of UI's 319,124 customers. Irene dropped three to six inches of rain and caused significant damage due to fallen trees and flooding along the coast line and rivers. Eight days later on September 5, 2011, UI's Storm Center Operation was deactivated and turned over to the Operations Dispatch and service to the last affected customers were restored. UI Responses to Interrogatories EL-1 and EL-4.

The following chart shows the history of UI customer outages due to Tropical Storm Irene.

UI Outage Curve for Tropical Storm Irene
August 27, 2011 to September 6, 2011



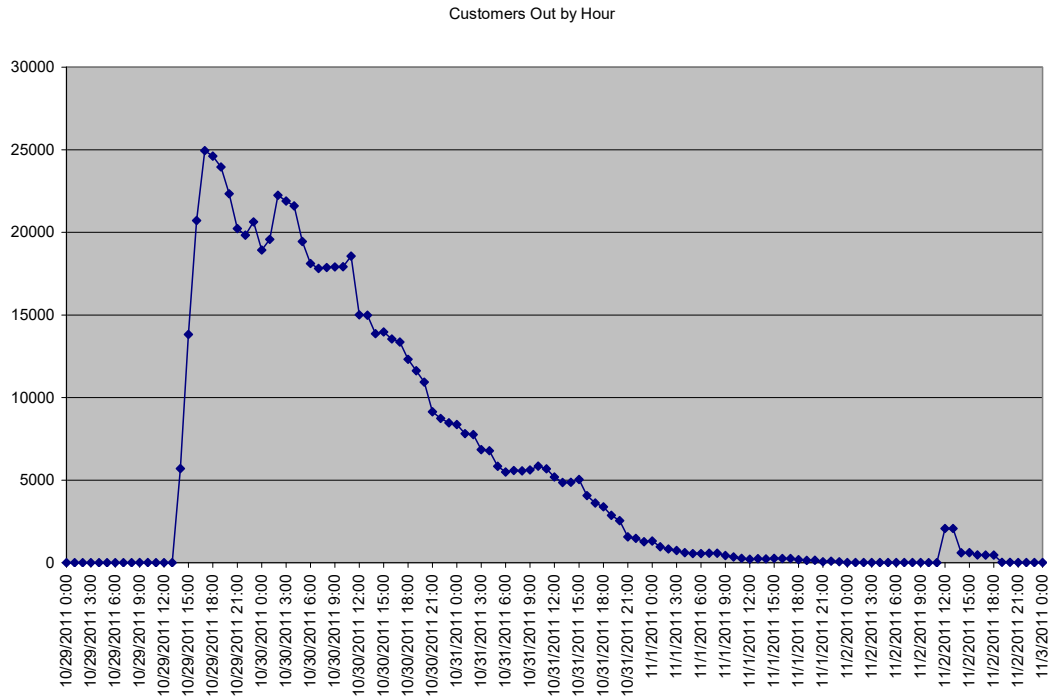
UI Tropical Storm Irene report filed October 4, 2011 in Docket No. 86-11-18.

b. The October Storm

The October Storm caused a peak outage of 19,565 customers on October 30, 2011. Due to that storm, 52,344 outages affected 16.4 percent of UI's customer base. On November 2, 2011, service to all affected customers' service was restored. UI Response to Interrogatory EL-16, p. 2.

The following chart shows the history of UI customer outages due to the October Storm:

UI Outage Curve for the October Storm
October 29, 2011 to November 3, 2011



UI October Storm report filed December 19, 2011 in Docket No. 86-11-18.

2. The Liberty Report Findings

The Liberty Report indicated that the effect of both Tropical Storm Irene and the October Storm on UI was not as severe as experienced by CL&P. This is due to UI's smaller and more compact service territory. Liberty concluded that the following items were beneficial aspects of UI's performance:

1. UI was well organized in its response to the two storms;

2. UI proactively communicated with the media, public officials, customers, and the public before, during, and after the storms;

3. UI managed the alert and mobilization processes well in both storms;

4. UI has an aggressive distribution-pole groundline program; and

5. UI used automatic meter reading technologies to communicate with installed meters during the storm to confirm restoration status.

Liberty Report, p. 2.

Liberty identified the most significant aspects of UI's performance that need improvement as:

1. UI could not handle the large volume of customers trying to communicate with the company during the Tropical Storm Irene;

2. The results of UI's efforts to procure outside resources were disappointing;

3. UI could not provide restoration estimates or restoration status to customers in a timely manner;

4. UI management did not have proper control over the Cut/Clear, Make Safe work done with the towns;

5. Hazard trees contributed to the effects of the storms; and

6. UI trims trees on single-phase circuits every eight years.

Liberty Report, p. 2.

3. Customer Communications

UI's customer service call center, located in New Haven, undertook a number of measures prior to both storms so as to respond to expected high call volume. Numerous storm preparation meetings to discuss items such as staffing, resources, logistics, transportation, and housing were held in advance of the two storms. UI Responses to Interrogatories CSU-1 and CSU-18. In addition to these meetings, UI also secured training resources to train non-traditional call center personnel, secured headsets for the additional phone answering resources, and readied a back-up call center location in Shelton in the event that call center resources needed to be relocated. Id.

In direct response to Tropical Storm Irene, UI also enacted other preparations. These preparations included actions such as establishing a dedicated phone line for employees to call in and receive updates concerning work schedules, establishing a database of employees' names and contact information to ensure that there was access to resources outside of the Customer Care Center that could assist during the storm, and providing the call center with a list of municipal liaisons assigned within the service territory. UI Response to Interrogatory CSU-1. In addition to these measures, on August 27, 2011, an outbound message was placed to all UI customers coded as "medical," advising them of the situation and the importance of having a contingency

plan in the event of an extended power outage. The message to these customers also provided information regarding Infoline and the American Red Cross. Id.

UI contends that its call center was fully staffed at the onset of the storm and resource availability was maximized throughout Tropical Storm Irene. UI Response to Interrogatory CSU-4. The call center was opened at 1:00 a.m. on August 29, 2011, and remained open on a 24 hours per day, 7 days per week basis until September 6, 2011. Id. The total calls handled by UI's IVR and its live customer service representatives was over 200,000. Id. A breakdown of the call center's performance metrics follows:

Date	Calls Handled[19]	ASA[20]	ACR%[21]	Peak Headcount
8/28/11	55,243	109	8.0%	85
8/29/11	34,976	236	7.1%	77
8/30/11	24,616	115	13.4%	80
8/31/11	20,307	228	29.8%	89
9/01/11	19,675	186	19.9%	90
9/02/11	19,362	125	15.1%	90
9/03/11	7,494	45	5.1%	57
9/04/11	1,530	12	2.2%	30
9/05/11	2,715	48	10.2%	17

UI Responses to Interrogatories CSU-2 and CSU-4

In its review of UI's customer call center performance for Tropical Storm Irene, Liberty noted the high number of busy signals that customers encountered. According to UI's data, over 150,000 busy signals were received by customers, and on certain days, the number of busy signals exceeded the number of calls answered by both live agents and the IVR. Liberty's examination of UI's call center performance metrics indicated that more than 14% of the callers to UI abandoned their calls over the course of the storm. Liberty Report, p. 133. Liberty's assessment of the performance of UI's call center was that it struggled throughout Tropical Storm Irene, even though there was near-peak staffing in place before the storm hit. Liberty attributed this under performance in part to UI's lack of an overflow IVR provider. Id., p. 134.

As discussed previously, UI undertook a number of measures in anticipation of the October Storm. However, these measures were not at the same level as for Tropical Storm Irene. UI stated that at the onset of the October Storm, its call center was not fully staffed. Tr. 4/30/12, p. 1928. While UI stated that it was able to call in an additional 15 agents to the call center on October 29, 2011, the call center was not fully staffed until October 31, 2011. Tr. 4/30/12, p. 1928; UI Response to Interrogatory CSU-18. Also, unlike prior to Tropical Storm Irene, UI did not initiate an outbound calling campaign to customers coded as medical. UI Response to Interrogatory OCC-147. For the October Storm, UI's call center was open 24 hours per day, 7 days per week basis until service for all customers had been restored on November 2, 2011. UI Response to

[19] Includes calls to live agents and calls handled by an IVR.
[20] Average speed of answer, in seconds.
[21] Abandoned call rate for calls to live agents only.

Interrogatory CSU-21. In total, counting calls handled by its IVR and those answered by live agents, UI's call center answered over 62,000 calls during the October Storm. UI Response to Interrogatory CSU-19. A breakdown of the call center's performance metrics follows:

Date	Calls Handled[22]	ASA[23]	ACR%[24]	Peak Headcount
10/29/11	18,661	526	13.8%	29
10/30/11	17,259	298	7.5%	48
10/31/11	9,702	63	5.8%	79
11/01/11	9,880	113	7.0%	76
11/02/11	6,528	515	23.8%	76

Id.

In its review of UI's call center performance during the October Storm, Liberty found significant numbers of busy signals encountered by its customers during the first two days of the event. Liberty Report, p. 136. Similar to Tropical Storm Irene, there were occasions when the number of busy signals was almost equal to or greater than the total number of calls answered. UI Response to Interrogatory CSU-19. Liberty noted further that on October 29, 2011, UI began to call in additional call center resources when call volumes climbed. Due to deteriorating weather conditions, call center staff found it difficult to get to the facility. As a result, the level of staffing at UI's call center was at the lowest during the highest volume of calls. Liberty Report, pp. 135, 149 and 150. However, based upon its review of call center operations, Liberty found that UI has several opportunities to improve so that it is better prepared to handle customer calls in future large outage events. Id., pp. 137 and 138. In its report, Liberty recommended that UI create a call center staffing process that will facilitate a quick ramp-up of agents during a large outage. Also, to address the large number of busy signals and abandoned calls, Liberty also recommended that UI should redesign its call center technology to improve communications with customers during a large outage or storm. Id., pp. 152 and 153.

UI agreed that it had difficulties staffing up for the October Storm, based upon the nature of the storm, reaching its employees and their ability to get to the call center facility. Tr. 4/30/12, pp. 1928 and 1929. According to UI, plans to adopt an automated calling system with employees' primary and secondary contact numbers have already been made. This automated system will more readily address an emergency staffing situation as well as be more efficient and quicker than a manual process. Id., pp. 1929 and 1930. To address the number of busy signals, UI is also exploring the use of an overflow high volume call answering system. Concurrently, UI is also investigating whether it can consolidate the call centers of The Southern Connecticut gas Company (SCG) and Connecticut natural Gas Corporation (CNG) in the future. These two additional call centers could potentially add approximately 40 more agents to handle incoming customer calls. Id., pp. 1932-1934.

[22] Includes calls to live agents and calls handled by an IVR.
[23] Average speed of answer, in seconds.
[24] Abandoned call rate for calls to live agents only.

Authority review of the Liberty Report determines that none of its findings or conclusions with regard to UI's call center performance are contradicted by the record in this proceeding. The Authority adopts the findings, conclusions and recommendations of the Liberty Report with regard to these issues.

Besides its call center, UI also utilizes its web site as a source of information to customers regarding storms and outages. On its Storm Center webpage, customers can find a significant amount of information such as an outage map, a town outage list, restoration priorities, storm tips and safety tips. UI Responses to Interrogatories CSU-7 and CSU-38. During both outage events, the UI website was very active. During Tropical Storm Irene, the outage map received over 200,000 page views; during the October Storm, the outage map received over 63,000 page views. Id. However, during Tropical Storm Irene, UI's website was unable to handle the volume of traffic that was occurring. In particular, the UI outage map was inaccessible for 6.5 days during this storm. According to UI, the amount of traffic encountered during this storm was unprecedented. To remedy that problem during Tropical Storm Irene, UI utilized a static page with a table by town of outage information. UI now has the capability of doubling the capacity of the website with a few minutes' notice, and if necessary, doubling that amount again within an hour's notice. UI Late Filed Exhibit No. 75; Tr. 4/30/12, pp. 1963 and 1964. During the October Storm, UI's website did not encounter any down-time or periods of inaccessibility. UI Response to Interrogatory CSU-39.

Liberty noted that UI was exploring ways to improve the outage information communicated through its website. Specifically, these improvements were to increase the interactivity of the site to allow customers to explore outage status information by hovering over a particular town on the map. Liberty Report, p. 149. UI has since implemented this upgrade to its outage map on its Storm Center webpage. The outage map now displays information such as the affected area and zip codes, the outage start and estimated restoral time, the number of customers out and the status of the outage. Tr. 4/30/12, pp. 1911 and 1912; UI Late Filed Exhibit No. 70.

Liberty also recommends that UI rigorously test its call-handling technology and website to ensure that technologies operate to expectations and specifications. Liberty Report, p. 153. Authority review of the Liberty Report determines that none of its findings or conclusions with regard to UI in this area are contradicted by the record in this proceeding. The Authority adopts the findings, conclusions and recommendations of the Liberty Report with regard to these issues.

The OCC recommended that the EDCs make improvements upon their policies and procedures for contacting medically vulnerable customers. The OCC stated that many towns established shelters during both outage events and many of them had only a small number of persons utilizing them. Further, the OCC noted that in the Governor's Report of the Two Storm Panel, recommendations were made for better planning to meet the needs of vulnerable citizens. Miller, DeVito and Townsley PFT, pp. 45 and 46. The OCC made four recommendations regarding medically vulnerable customers: (1) customers should be asked for secondary contact information and that the information be updated annually at a minimum; (2) during prolonged outages, the EDC should individually contact vulnerable customers to ensure that the customer is safe; (3) during the certification process to verify medically vulnerable customers, EDCs

should present customers with the option to waive their privacy rights under HIPAA so that their information can be shared with their town, the Red Cross or any other relevant state agencies or first responders; and, (4) for those customers who have waived their HIPAA privacy rights, contact information be shared with the emergency operations center of that customer's home town for additional monitoring and any necessary follow-up action. Id., pp. 46 and 47.

According to UI, there are 5,521 customers that are coded either as Serious Illness or Life Support/Life Threatening. A customer coded as Serious Illness means that the customer is seriously ill, but not having electric service would not endanger their life. A customer coded as Life Support/Life Threatening means that the customer has a condition that would endanger their life if electric service was terminated. UI Late Filed Exhibit No. 74. Presently, when a customer informs UI that there is a medical condition in the household, UI sends a certification form to determine if that customer has either a Serious Illness or Life Threatening/Life Support issue. The current form used by UI includes a request for a telephone number, but in light of the recommendation from the OCC, UI has proposed a revised form which will include a primary and secondary telephone number as well as an e-mail address. UI Late Filed Exhibit No. 73. Three outbound calling campaigns were conducted during this storm, August 27, 2011, August 31, 2011, and September 3, 2011. The first campaign on August 27, 2011, was conducted pre-storm to approximately 4,400 customers coded as medical. The other two outbound calling campaigns were conducted to approximately 3,200 customers coded as medical as a joint effort with some towns in UI's service territory.[25] UI Response to Interrogatory OCC-147. UI also provided data on the success rate of its outbound calling campaign to customers coded as medical during Tropical Storm Irene. According to the data, for the first two campaigns, UI was successful in reaching no more than 66% of their medically coded customers. During the third campaign, UI was successful in reaching 82% of their medically coded customers. UI Late Filed Exhibit No. 71.

There are no data to suggest that having secondary contact information on the medical certification form would have improved upon UI's success rate in reaching its customers coded as medical. However, the outbound campaigns conducted by UI were done via an automated process. Tr. 4/30/12, pp. 1945 and 1946. The Authority agrees with the OCC's recommendation that secondary contact information be included on the medical certification form. Further, it approves the revised medical certificate submitted by UI for use on an ongoing basis. The Authority will also order utility companies that utilize the medical certification form to revise their current form in use to include secondary contact information. In regard to having the information updated on an annual basis, the Authority notes that this recommendation should not impose any additional burden on utility companies given the requirements of Conn. Agencies Regs. § 16-3-100(e)(3)(B).[26]

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[25] The participating towns were New Haven, West Haven, Stratford, Shelton, Orange, North Branford, Milford, Hamden, Fairfield, Ansonia and Milford.

[26] Conn. Agencies Regs. § 16-3-100(e)(3)(B) states: "(3) In cases where residential utility service is continued pursuant to a serious illness certificate or life threatening situation certificate, the customer shall: (B) renew the serious illness certificate or life threatening situation certificate no later than the last day of the period specified by the physician as the length of the illness or life threatening situation, provided, however, that if the physician has failed to specified the length of the illness or life

UI disagrees with the OCC's second recommendation that during a prolonged outage the EDC contact customers on an individual basis that are known to be without power. UI claims that during a storm event it would not have the resources available to check on the safety of individual customers, but would agree to share the customer information with the relevant town or Red Cross official who might be better suited to perform this action. UI Late Filed Exhibit No. 72. The Authority recognizes the recommendation of the Governor's Report of the Two Storm Panel regarding the needs of vulnerable citizens. However, the Authority is unsure if tasking an EDC or other utility company with contacting customers on an individual basis to ensure that the customer is safe during such an event is an appropriate allocation of their resources. The Authority is also not prepared to order public service companies to offer customers the option to waive their privacy rights under the HIPAA law so as to facilitate the sharing of information. Additionally, the Authority does not know whether waiver of HIPAA privacy rights is permissible. Until further documentation is provided as to the mechanics of this recommendation, the Authority is unwilling to endorse it. However, the Authority notes that during the 2011 Storms, when CL&P contacted a portion of its medically coded customers, it offered an option to share the customer's name and telephone number with the Red Cross if that customer believed they required additional assistance. CL&P Late Filed Exhibit No. 42, Tr. 4/23/12, pp. 1061 and 1062. The Authority believes that CL&P's customer contact procedure for its vulnerable customers can be an effective substitute until the Authority has more information regarding HIPAA. Accordingly, the Authority will order UI to investigate the feasibility of providing this information to the Red Cross, which may be better situated to contact customers on an individual basis.

a. Municipal & Other Utility Company Communications

According to UI, its Municipal Liaison program has been in existence for at least two decades, but it was not until early 2010 that increased training and attention was provided. Tr. 4/30/12, pp. 1953 and 1954. UI has an established process to develop a list of company personnel with the necessary skills to act as town liaisons. That list is further divided into individual liaisons assigned to specific municipalities based on their skills, experience and existing contacts within the municipality. It is UI's intention that staff assigned as municipal liaisons remain the same from storm to storm so that relationships, experience and consistency can be developed. UI reviews the list annually and on an as-needed basis during the year. At a minimum, two UI employees are designated to a municipality in order to provide 24 hour coverage. UI Response to Interrogatory CSU-24. However, UI will also designate back up staff, so that depending on the size of the municipality, the total number of liaisons can range from three to five employees. Tr. 4/30/12, pp. 1964 and 1965. Some of the characteristics that UI looks for in selecting a town liaison include the employees experience in customer service, interpersonal and communication skills, experience with the municipality and UI's distribution system, the ability to work under pressure and extreme conditions, and if the employee is a resident of the town. UI Response to Interrogatory CSU-25.

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threatening situation or if the physician has indicated that the length of the illness or life threatening situation is not readily available, then the serious illness or life threatening situation certificate shall be renewed every 15 days. Each renewal certificate shall be forwarded to the company.

UI's town liaison personnel have numerous duties and responsibilities once designated and assigned. During the 2011 Storms, the duties and responsibilities were similar. A small sampling of these duties and responsibilities includes reporting to the municipal emergency operations center, providing a direct communications link between the municipality and UI's EOC, working with the municipality to prioritize emergency locations and communicate this information back to UI, communicate special situations, requests, and UI's progress on emergency locations, providing daily updates to UI's EOC on the restoration status of pre-designated town priorities, keeping the municipality updated on restoration progress, and in some cases, working directly in the field with local public safety crews. UI Response to Interrogatory CSU-28. UI supports its town liaison personnel by providing ongoing training, some of it mandatory. Examples of the mandatory training provided include an annual municipal liaison class, UI's Outage Management System, UI's training seminar for municipal officials, and if available through the municipality, town liaisons participate in a municipal EOC training exercise. UI Response to Interrogatory CSU-32. UI also intends to implement a new training program for its town liaison staff that it has called "Electricity 101." This new training will focus on items such as the system infrastructure and distribution system, safety, and future upgrades. Tr. 4/30/12, pp. 1954 and 1955. Prior to the Storms, UI also held refresher training for its municipal liaison staff on June 17, 2011 and June 23, 2011. UI Response to Interrogatory AG-152. Besides training for its town liaison staff, UI has also held joint training with municipal officials. In August 2010, UI hosted a forum to discuss storm response and their towns. This forum was designed to provide municipalities with critical information that they would require during a storm or outage situation. UI explained that this forum also presented an opportunity for municipal officials to speak and interact with the town liaisons, account managers, electric system managers, and restoration managers. UI stated that this forum was attended by over 150 people representing all 17 municipalities it serves. UI expects to conduct this forum on a bi-annual basis. UI Response to Interrogatory CSU-33.

According to UI, its municipal liaisons are required to meet with their local counterparts at least once per year. Tr. 4/30/12, p. 1954. Prior to Tropical Storm Irene, several municipalities in UI's service territory held pre-storm meetings and all were attended by UI's municipal liaison personnel. UI Response to Interrogatory CSU-27. UI noted that not all municipalities it serves held pre-storm meetings, but their town liaison staffs were in contact with their respective town officials prior to Tropical Storm Irene. The purpose of this contact was to obtain information regarding the status of town emergency operation centers. UI also provided via e-mail to all of the municipalities its serves, its storm contingency planning and latest weather status prior to Tropical Storm Irene. UI stated that prior to the October Storm, no municipalities held pre-storm meetings, but the same procedures carried out for Tropical Storm Irene were implemented. Id.

UI provides its town liaison staff with the number and type of crews assigned to a municipality on a daily basis once the restoration process has begun. UI also provides the town liaison staff with crew assignments for daily restoration activities after the initial storm assessment and work packets are developed. UI Response to Interrogatory CSU-30. While town liaison staff does not have the ability to speak directly to UI crews in the area they are assigned to, the liaison staff can request a dedicated cut-clear/make-safe crew. UI Response to Interrogatory CSU-31. The municipal liaison

staff works with their municipal officials to develop a list of make safe locations which is then provided to the dedicated cut-clear/make-safe crew. In the case of an emergency situation, the municipal liaison contacts UI's Lead Municipal Liaison who will then coordinate with other UI staff to dispatch a crew to the requested location. UI Response to Interrogatory CSU-29.

Overall, UI's municipal liaison program was generally well received. The AG stated that it found UI's program to be more refined than the program offered by CL&P. AG Brief, p. 19. Liberty noted that while UI was able to implement and apply its communication plan with its municipalities for Tropical Storm Irene, there were still areas of the program where improvements could be made. Liberty described some of the lessons learned by UI from this storm:

- The volume of emergency calls from municipal emergency operations centers through municipal liaisons was much higher than anticipated during the storm. This made it challenging to communicate with UI's Storm Center to track and update the status of these calls.

- More than half of the towns served by UI had never opened an emergency operations center prior to Tropical Storm Irene. Because of this, many of the towns had not been able to coordinate critical infrastructure priorities with UI.

- The municipalities expressed a need to have more control over the assignments provided to UI crews along with a need for better coordination with local public works and tree removal crews.

- Municipalities requested that estimated restoration times be provided sooner.

- Due to customers' inability to reach UI's call center, municipalities were getting many calls from their residents regarding restoration times.

- Municipal officials wanted more information on the location of UI crews working in their towns and information on the circuits that were out. The provision of a map with trouble spots would be very helpful to the municipal officials as well.

Liberty Report, pp. 142-144.

Liberty noted that UI's municipal liaison program worked more smoothly during the October Storm due to changes implemented based upon the lessons learned from Tropical Storm Irene and the familiarity gained by the town liaison staff in the locations they were serving during that time. Id. Liberty also found that overall, UI's municipal liaison program enhanced communications between towns and utilities during both storms, but that there was room for improvement. Liberty Report, p. 151. Liberty recommended that UI enhance the municipal liaison program to create a more consistent approach to keeping community leaders and municipal officials better informed of storm restoration data. Liberty Report, p. 153.

UI recognized that there were areas of the municipal liaison program that could be improved. UI stated that it has responded to requests from its municipalities to increase the number of town priorities/critical facilities. Each town served by UI can now identify 10 critical facilities that will receive priority restoration. UI Brief, pp. 12 and 13. UI also has agreed with a number of recommendations made by the OCC regarding the municipal liaison program. For instance, UI plans to participate in a July 28, 2012 emergency management planning exercise with municipal officials. UI agrees that town liaisons should thoroughly understand the towns they are working in and is equipping its liaison staff with town priority maps. UI also agreed that its municipal liaison staff should develop working relationships with utility operations personnel before major outages occur. UI Late Filed Exhibit No. 72. UI also agrees with the Liberty recommendation to enhance the municipal liaison program to create a more consistent approach to keeping community leaders and municipal officials better informed and intends to incorporate this into its preparedness and training of its municipal liaison staff. Id. Also, UI is in the process of meeting with each of its municipalities so it can expand post-storm follow-up to improve the capture of feedback regarding the quality of its municipal liaison program. UI May 14, 2012, Correspondence Regarding Comments of the Liberty Consulting Group.

Based upon these improvements that UI has either implemented or intends to implement, the Authority finds that UI's municipal liaison program will continue to provide the necessary and critical communications to the municipalities that it serves.

Regarding communications with other utility companies, UI notes that its municipal liaison process does not incorporate AT&T or other telecommunications entities. UI states that during the tri-annual Joint Utility meetings that are attended by all the utilities and pole attachers, emergency response numbers are reviewed and revised for each company. According to UI, these numbers are the contact numbers for each company or third party to be used during emergencies and storms. UI stated that in the event a large storm is predicted, it will contact each utility/pole attacher prior to the storm and provide to them a direct contact number for its EOC. UI will also offer space to each company at its EOC if they would like to send a representative. UI Response to Interrogatory CSU-35.

4. Liberty Recommendations

Liberty identified the most significant aspects of UI's performance that required improvement listed in the findings noted above. Id. UI agrees with all of the significant performance aspects needing improvement and has taken action to improve its future performance in all the areas identified. UI Late Filed Exhibit No. 72-1.

The Authority adopts the Liberty Report findings and recommendations for UI with the exceptions described below.

5. Emergency Plans

For at least six months prior to Tropical Storm Irene, UI was in the process of creating a 2011 EPP in order to update its 2006 plan. The 2011 plan was based on the

National Incident Management System and included forming an incident command structure. Tr. 05/02/12, pp. 2432-2334.

On August 22, 2011, UI conducted a tabletop exercise to review the 2011 EPP with its team leaders. However, on that afternoon, upon learning that Tropical Storm Irene was expected to hit the area, UI decided to implement the 2011 EPP. Id. Many assignments in the 2011 EPP were the same as in the 2006 EPP. Tr. 05/02/12, pp. 2432-2334.

As a result of the early warning, UI initiated its restoration planning efforts on August 23, 2011. The preparation included storm team planning meetings, defining the potential damage impact, acquisition of additional line clearance and line construction crews, development of the specific storm staffing plan and schedules, restoration strategy development, communication planning and stakeholder contact, safety training, logistics planning, and system integrity activities such as returning the transmission and distribution systems to normal prior to the storm, substation inspections, and the cancellation of all planned work. UI Response to Interrogatory EL-1.

Following the planning stage, UI pre-staged all storm responders by staffing all key substations and having all company storm personnel report for their assignments. Logistic needs such as pre-staging material at strategic locations throughout the service territory, procuring staging locations and accommodations for mutual assistance and contractor crews were also pre-staged prior to the storm in order to be able to utilize fully all available resources during the response. Id.

Due to a late forecast of the October Storm, UI started to prepare for the October Storm on October 27, 2011, a day before the snowstorm. UI Response to Interrogatory EL-13-1. UI implemented the 2011 EPP and claimed that it worked effectively. Tr. 05/02/12, pp. 2432-2334.

Liberty could not determine which EPP UI used during the 2011 Storms because the 2011 EPP that was due on June 1, 2011, was not filed until December 1, 2011. Liberty Report, pp. 24 and 25. Liberty commented that UI's failure to have a definite plan for the responders was a confusing and negative factor in their response efforts. Id., p. 25.

UI testified that although the 2011 EPP had not been filed with the Authority, the company implemented the 2011 EPP for the two storms because its employees were familiar with the plan. Tr. 5/2/12, p. 2433. Based on review of the UI chronological notes for the two storms and UI testimony, it appears to the Authority that UI implemented an EPP that was very similar to the 2011 EPP filed on December 1, 2011. UI Responses to Interrogatories EL-1 and EL-13.

Liberty made recommendations to update the EPP sooner than every five years. Liberty Report, pp. 4 and 5, 25. UI indicated that it concurs with Liberty recommendations to modify the EPP. UI Late Filed Exhibit No. 72, p. 5. In light of enactment of Public Act 12-148, UI is required to file an updated EPP with the Authority by July 1, 2012, in Docket No. 12-06-11. The Authority will require that the Liberty recommendations to modify UI's EPP be made in that proceeding.

6. Preparedness

Liberty determined that UI's pre-storm planning actions properly mobilized the support functions and achieved full readiness status of the internal field response personnel. Liberty made no recommendations for storm preparations. Liberty Report, p. 58.

The AG cited to UI's testimony, where it stated that the last time the company conducted drills and exercises to practice the implementation of its EPP was in 2009 and it did not include practicing the management of large numbers of outside crews. Tr. 5/2/12, p. 2489. Prior to the 2011 storms, UI did not drill or exercised its 2011 EPP and its ICS. Id., p. 2483; AG Brief, p. 41.

In addition, although UI annually conducted training for its liaisons, prior to the 2011 Storms, it had not conducted emergency drills or exercises to evaluate the performance of its liaisons. Tr. 4/30/12, pp. 2028 and 2029; 1978 and 1979. UI acknowledged that such training sessions would be extremely valuable in addition to its annual internal training sessions. Id., pp. 1978 and 1979. UI's hands-on liaison training only occurred if a particular town was conducting its own exercise. Id., p. 2029.

UI testified that its liaisons attend town drills when they occur. UI also testified that it should train with the towns at least once a year. Id., p. 1981. The State will be conducting a state-wide emergency drill at the end of July 2012, but not all towns will be participating in the drill with UI. Id., pp. 1979 and 1980. The Authority agrees with UI that emergency drills should be conducted at least once a year with each town regardless of who initiates the drill. UI should encourage all towns to participate in the upcoming state emergency drill and focus on the restoration of utility services, coordination of make safe work and communications with and through the company's liaisons.

7. Restoration

a. Staffing the EOC

Due to the size and compact nature of the UI service area, the response was under the command and control of one incident manager who reported directly to UI executive leadership. The incident commander for both storms was the UI Director, Operations, an experienced utility operations veteran. Liberty determined that the UI emergency organization was well structured for its service area, and contributed positively to the restoration of electricity. Liberty Report, pp. 67 and 68.

UI has a relatively small emergency organization due to the size of its service area. As a result, it easily communicated and accomplished alerts and mobilization. UI managed the alerts and mobilizations with the exception of being late in fully staffing the EOC in both storms. For Tropical Storm Irene, outages began increasing at 10:30 p.m. on August 27, 2011. Tropical storm force winds started at 2:00 a.m. on August 28, 2011, and continued until 10:00 p.m. that day. Full storm center staffing did not arrive until 6:00 a.m. that morning.

For the October Storm, UI began to prepare on October 27, 2011. At 2:00 p.m. on October 29, 2011, the storm classification was increased to Level 3. Significant outages were occurring and the storm center was opened and the Wires Down Process was activated.

Liberty recommends that UI change its practice to ensure that it opens the EOC prior to the onset of major events. Specifically, in the case of major events where advance notice is provided, such as a hurricane, or when there is enough advance notice to begin tracking the storm at least 12 hours in advance of the expected impact, UI should fully staff the EOC a minimum of 12 hours. Liberty Report, pp. 74 and 75.

UI disagrees with this recommendation. UI Late Filed Exhibit No. 72-1, p. 5. UI testified that if it had staffed for Tropical Storm Irene at 10:00 a.m. on August 27, 2011, as recommended, there would be nothing that could have been done for the first 12 hours while waiting for the storm to hit. UI noted that there would have been a shift change at 10:00 p.m. and workers still would have been unable to do anything due to tropical winds occurring on Sunday morning from 2:00 a.m. to 10:00 p.m. As a result, staff could not be deployed until 10:00 a.m. at the earliest the next morning. Tr. 4/30/12, p. 2074.

For the October Storm, UI opened its EOC on October 29, 2011, at 2 p.m., and ramped up its entire work force on October 30, 2011, at 6:00 a.m. Response to Interrogatory EL-13, Liberty Report, pp. 74 and 75, and Id., 2075. Because of the severe weather, workers could not go into the field. When the weather was calm, then the damage assessors went out. If UI had implemented its workforce 12 hours in advance of the time that its workers were to go out, there would have to had been another shift change. Tr. 4/30/12, p. 2075.

The PURA finds that UI has presented a reasonable argument against fully staffing the EOC at least 12 hours before the storm. In this case, staffing 12 hours in advance would have resulted in a shift change at the time of storm impact and the inefficient use of a shift. The time to fully staff the EOC should be left to the judgment of the EOC managers who are monitoring storm conditions during the 12 hours prior to impact. In many major storms, it is common for weather conditions to stop or restrict restoration efforts for hours until after storm impact. In the opinion of the Authority, the start of the UI storm restoration was not affected by when it chose to fully man its EOC.

Accordingly, the Authority will not accept Liberty's recommendation to order UI to fully man its EOC 12 hours in advance of the arrival of a major storm. Rather, the Authority will examine this recommendation further in Docket No. 12-06-09 when other utilities can provide comment on their experience during the two storms.

b. Damage Assessment

The Damage Assessment guidelines in the 2011 EPP are essentially the same as those items in the 2006 EEP. UI performed well in evaluating the system damage in the field.

UI's Damage Assessment teams gathered notes and provided them along with maps to Classifiers who entered the data and printed packets for the work crews. UI entered all data manually. Liberty Report, p. 92. Job completion information from the field came back in batches. UI's receipt of this information and updating its outage management system was labor-intensive and cumbersome causing delays in updating the restoration status. Liberty recommends that UI provide field crews with mobile data terminals to improve the process and increase the frequency of field feedback. Id., pp. 92 and 93.

UI did not use the damage assessment data on a system-wide basis to estimate resource requirements. The current process does not collect or use this data. For the 2011 Storms, there was no process in place for totaling up damaged equipment for use in estimating resource needs. It is an industry best practice to use statistical damage assessment data to predict accurately overall resource requirements and associated system restoration timelines. Id., p. 93. Liberty recommends that a process be developed to use damage assessment information in a statistical manner for overall crew resource-requirement projections. This new function should improve data analysis in the damage assessment process. Id.

UI agrees with the recommendation to strengthen the procedures to get regular, timely restoration status updates from crews in the field and has set this as an expectation of the field crews and as a management goal. UI Late Filed Exhibit No. 72-1, p. 5.

c. Mutual Aid

UI is a member of NEMAG and the Edison Electric Institute (EEI). Liberty Report, p. 81

On August 25, 2011, UI began to participate in NEMAG conference calls. At that time, all NEMAG participants were holding crews, including Hydro Quebec, in Canada. On August 26, 2011, UI requested 100 crews from NEMAG and requested another 200 crews between August 27, 2011 and September 1, 2011. UI Response to Interrogatory EL-1.

UI relied heavily on NEMAG for help securing outside line crews. The results were disappointing and for the most part, beyond UI's control. UI also inquired about help from states to the west, Kansas, Wisconsin, Indiana, and Missouri. Liberty Report, p. 82. Because both of the storms were regional in nature, neighboring utilities and mutual assistance groups were unable to provide help. The total outside help for Tropical Storm Irene was slightly over 50 line crews and 75 tree crews. The October Storm impact on UI was considerably less from Tropical Storm Irene. Consequently, UI did not need a large amount of outside resources. Id.

Liberty notes that there are several key issues in the Mutual Assistance process that limits access to crews (e.g., in the interaction of the mutual assistance groups and political influence). The affiliation between operating companies is also a factor. Companies who once were more readily available to provide assistance are also now bound first to their affiliated companies. Id. Additionally, mutual assistance groups

have agreements with their member companies that they will not send assistance outside the bounds of their respective groups until it is certain that the group will not need help. Also, it is a generally accepted practice that utilities will not request resources until it sustains damage. Id.

Liberty recommends that UI explore joining NYMAG and Mid-Atlantic Mutual Assistance (MAMA) since they are in close proximity to the UI service area. UI should also explore joining groups that are less likely to be affected by the same storm, such as the Southeastern Electric Exchange, the Mid-West Mutual Assistance Group, and the Texas Mutual Assistance Group. Id., p. 83

UI agrees with Liberty's recommendation and is currently working with NEMAG and EEI. UI Late Filed Exhibit 72-1, p. 5.

d. Make-Safe Work

Down wires created a public safety issue throughout the area during both storms. When requested by a municipality, UI provided a dedicated make-safe crew consisting of one line construction crew and one tree clearance crew to verify that wires were de-energized and also to de-energize live wires so town employees could move trees and open the roads safely. UI Response to Interrogatory EL-20. The make-safe crews worked under the towns' EOC and not under UI's dispatch. Liberty concluded that UI's management of the make-safe assistance delayed restoration. Liberty Report, p.174.

UI testified that a benefit of the make safe crews work in helping to open roads for public safety creates earlier access for damage assessors to access damage and for line trucks to get to critical areas earlier in the restoration process. Tr. 4/30/12, pp. 2081 and 2082.

Liberty recommended that specific guidelines be establish for the make-safe work to be performed with the towns. Liberty also indicated there must be a clear understanding and agreement as to what UI will do in this area. Id., p.175. UI agrees with the Liberty recommendation and is working with the state, towns and other utilities to develop specific guidelines for Make-Safe work. UI Late Filed Exhibit No. 72-1, p. 5.

8. Other Issues

Prior to the 2011 Storms, UI trimmed trees for three phase lines on a four-year cycle and for single phase lines on an eight-year cycle. Mid-cycle trimming was performed as needed based on circuit performance. Tr. 4/30/11, pp. 2091 and 2094. UI has proposed a four-year cycle for all of its distribution circuits. Id., date, p. 2091. UI is seeking the Authority's approval in this proceeding to expand its clearance specifications and for a proposed enhanced tree trimming program that could include "blue sky" clearance, or eliminating all tree branches above its distribution lines. Id., pp. 2092, 2100 and 2101; AG Brief, p. 44.

UI has proposed to increase horizontal clearances from 6 to 10 feet, below conductors from 5 to 8 feet and above conductors from 12 to 15 feet. UI Response to Interrogatory AG-17.

By letter dated April 19, 2012, UI requested the Authority's approval to start an enhanced tree trimming program and tree removal program (ETT) similar to CL&P's ETT program. UI is ready to start its ETT in targeted trouble spots while it completes its evaluation of the full extent of the program in terms of overall timing and cost, and how best to proceed to address both mainline and sidetaps throughout UI's service territory. UI believes that ETT can be done on neutral revenue requirements basis in the near term, so that its overall tree trimming costs are essentially unchanged from the company's tree trimming revenue requirements approved in rates, provided the ETT costs are capitalized consistent with past regulatory approval of ETT. UI Letter to Kimberley Santopietro dated April 19, 2012; UI Brief, p.3.

UI testified that the ETT program would be an expansion of the current trim program without the additional massive removal of trees that there is no industry standard for the program as it was developed by CL&P. Tr. 5/24/12, pp. 2922, 2924.

By July 2012, UI is expected to have spent approximately $1 million of its $2 million annual O&M budget. Revenue requirements for the $1 million of O&M are the same as that of $6 to $7 million in capital expenditures. Tr. 5/24/12, p. 2924.

The OCC claims that increasing tree clearances will affect tree health. Increasing the amount of tree clearance would likely result in some improvement in reliability year over year, but the impact on the system's performance under major or catastrophic storm conditions is less certain. The OCC also claims that there is a limit to the extent to which risks to the overhead distribution system posed by trees can reasonably or practically be reduced under such serious storm conditions, given that in major storms, entire trees or major sections of tall trees may fall. Goodfellow/Townsley PFT, p. 16. Spending more money for additional tree work that results in obtaining more line clearance and removing more trees is not a complete solution to the problems resulting from major and catastrophic storm conditions similar to or more severe than the 2011 Storms. Id. Accordingly, the OCC concluded that the EDCs should increase their emphasis on hazard trees. Id.

Liberty noted that UI trims single-phase circuit portions every eight years. While there is also some reliability centered maintenance being conducted on these lines, the eight-year cycle allows for increased vegetation density that will cause storm outages. In addition, the hazard-tree removal budget has not had consistent funding in past years. The budgeted rate of $53 per mile allows the removal of only very high priority hazard trees. Id. Liberty recommends that UI institute a four-year full cycle trim program to reduce overhanging material and increase clearances and a more aggressive hazard tree removal program, that will improve both storm and non-storm reliability. Liberty Report p. 44.

The OCC and the AG disagree with UI's proposed ETT program and recommend that it be disallowed because of the unknown effect on future revenue requirements, its impact on the system and that this docket is not the appropriate proceeding to resolve revenue requirement issues. OCC Reply Brief, pp. 9 and 10; AG Reply Brief, pp. 6-8.

The Authority agrees with the OCC that increasing clearances may lead to more hazardous trees and may not be necessary if the tree cycle is reduced. The EDCs should target a four-year tree cycle. In Docket No. 12-06-09, the Authority expects to establish tree trimming standards and evaluate a move to a four-year trim cycle, the effects of removal of hazard trees and the impact on ratepayers.

The Authority also agrees with the OCC and the AG that changing revenue requirements must be addressed in a rate case, not during a storm investigation. Sufficient details of what is encompassed in the proposed ETT program have not been submitted for review by the Authority. The company has not completed its evaluation of its ETT program in terms of overall timing and cost, and how best to proceed to address both mainline and sidetaps. UI testimony indicates that there are no standards for the ETT program and that it does not include additional tree removal. The effect of the proposed ETT program for 2012 and beyond on revenue requirements is unknown. Additionally, revenue requirements should be addressed in a rate case proceeding as opposed to an investigation. For these reasons, the Authority will not approve UI's proposed ETT program.

UI can propose its ETT program again in its next rate case, but it must include specific details about the content of the program, the overall costs, benefits and effect on system reliability excluding and including major storms. UI may also consider proposing details of its ETT program in Docket No. 12-06-09.

D. WIRELINE TELECOMMUNICATIONS COMPANIES

1. AT&T Connecticut

Following both Tropical Storm Irene and the October Storm, AT&T activated two response centers: the Northeast Emergency Operations Center (NEOC) and its Local Response Center (LRC). These centers support Connecticut's restoration efforts with teams dedicated to providing direction, coordination and overall management of the emergency operations in response to the storm. AT&T Response to Interrogatory TE-1. According to AT&T, the NEOC regional center's purpose was to determine the efforts for restoring and provisioning service in the affected areas. The LRC, located in Meriden, has local subject matter experts who, working with the NEOC staff, coordinate the response and recovery efforts of the local personnel in response to local issues. AT&T Responses to Interrogatories TE-1 and TE-13. Both the NEOC and LRC center provide input into the AT&T Global Network Operations Center (GNOC), the command-and-control that monitors and proactively manages data and voice traffic flowing across AT&T's domestic and global networks 24 hours per day, seven days per week. Id. The GNOC's monitoring capability has enabled AT&T to begin pre-planning with local resources for the arrival of both storms well before they actually hit Connecticut. Id.

a. Tropical Storm Irene

Prior to Tropical Storm Irene, from August 24, 2011 to August 27, 2011, AT&T held discussions with CL&P and UI to establish a process to communicate and coordinate each company's efforts. AT&T distributed the "Storm Irene Responder Access Letter to AT&T" and contacted employees for their presentation to safety and

public officials. The letter was designed to facilitate movement throughout the state in the event of curfews or restrictions. AT&T Response to Interrogatory TE-1. During that timeframe, AT&T continued to communicate with all stakeholders and advised its employees in the potential storm strike areas to take necessary precautions to remain safe during the catastrophic event and to continue monitoring local news reports for weather advisories or changes in forecasts. Id., p. 4.

From August 28, 2011 through September 5, 2011, AT&T participated in the daily Governor's briefing, participated on the State Telecommunications Task Force (TTF) at the EOC to address restoration of service post-storm and continued to manage State storm restoration. AT&T worked with the utility power companies to assess where power was being restored so that restoration could be prioritized. Employees involved in restoration activities were reminded that safety was paramount. Equipment functionality continued to be assessed and in instances where required, was restored to operating condition. On September 5, 2012, AT&T's Meriden LRC and NEOC were deactivated for Tropical Storm Irene.

b. October Storm

Prior to the October Storm, AT&T mailed letters to municipal officials to ensure that the municipalities were aware of the emergency contact information for their specific AT&T contacts. During the days preceding the storm, AT&T personnel initiated a review and inventory of materials it anticipated would be in high demand due to the impact of the storm. AT&T personnel verified the availability of supplies, including replacement poles, drop wire, cable and other hardware and ensured the fueling of all vehicles and generators, brought central office switching equipment to the designated staging areas, and developed and communicated its work force plan. From October 27, 2011 through October 28, 2011, AT&T participated in calls with the Governor's storm team on storm preparation. AT&T External Affairs identified a point of contact within the local network organization to support requests for information. AT&T staffed its personnel at the State EOC on October 30, 2011. AT&T Response to Interrogatory TE-1.

From October 29, 2011 through November 3, 2011, AT&T worked with UI and CL&P to formulate plans to report to the EOC and it activated the LRC on a "virtual basis."[27] It had a liaison at CL&P's EOC, who remained at that location for at least 12 hours each day until November 6, 2011. The Meriden LRC began operating on a 24 hours a day, 7 days per week schedule on a virtual basis with status calls held twice daily to share information with affected internal organizations. AT&T provided information to the state for the Governor's briefing and to the TTF. A satellite cell on light truck (COLT) was dispatched to Bradley International Airport in Windsor Locks as requested by the Federal Emergency Management Agency (FEMA). Id.

From November 1, 2011 through November 3, 2011, AT&T emailed each municipality reconfirming its availability during this emergency event. LRC status calls

[27] AT&T personnel performed its emergency functions from its daily work locations instead of the physical Meriden location. AT&T Response to Interrogatory OCC-3.

continued to occur twice daily. The State EOC staffing continued with periodic reports provided for the Governor's briefing and to the TTF. AT&T continued to evaluate staffing plans. On November 4, 2011, AT&T was no longer required to staff the State EOC but it remained "on call." AT&T's virtual LRC ceased operation as it returned to business as usual mode. Id.

c. Customer Communications

The Authority sought to ascertain the effectiveness of certain customer communications through the course of the 2011 Storms. One of the areas that the Authority explored was customer call center operations and performance. AT&T provided to the Authority, statistics for its repair call centers. Presently, repair calls for Connecticut AT&T customers are handled by four call centers: Brecksville, Ohio, Hoffman Estates, Illinois, Houston, Texas, and North Hollywood, California. AT&T Responses to Interrogatories CSU-12 and CSU-43. AT&T's repair call centers are normally available on a 24 hour a day, 7 days per week basis. This availability did not change during the course of Tropical Storm Irene or the October Storm. AT&T Responses to Interrogatories CSU-14 and CSU-43. The following is a sample of the repair call center performance metrics reported by AT&T during the two outage incidents:

Date	ASA[28]	ACR%[29]	Total Calls[30]	Date	ASA	ACR%	Total Calls
8/27/11	110.7	4.7%	1,675	**10/29/11**	83.7	5.9%	3,040
8/28/11	48.5	3.3%	6,752	**10/30/11**	416.8	23.6%	8,235
8/29/11	270.8	15.2%	19,435	**10/31/11**	16.6	0.9%	8,281
8/30/11	42.2	2.2%	10,644	**11/01/11**	51.4	2.7%	6,574
8/31/11	24.5	1.3%	7,319	**11/02/11**	32.1	1.5%	6,845
9/01/11	8.7	0.5%	6,094	**11/03/11**	51.4	2.7%	6,575
9/02/11	38.5	1.6%	5,237	**11/04/11**	28.3	1.3%	5,827
9/03/11	68.8	2.0%	3,357	**11/05/11**	66.8	2.8%	4,046
9/04/11	727.4	32.1%	2,524	**11/06/11**	189.6	9.2%	3,215
9/05/11	4.5	0.8%	2,622	**11/07/11**	55.5	2.3%	7,124

Source: AT&T Responses to Interrogatories CSU-12 and CSU-43.

During Tropical Storm Irene, staffing at AT&T's repair centers averaged approximately 268 agents during the time period of August 27, 2011 through September 6, 2011. During the October Storm, staffing at AT&T's repair centers averaged approximately 296 agents during the time period of October 29, 2011 through November 13, 2011. Id. AT&T indicated that its repair call center staff was not provided any material or instructions specific to addressing questions or complaints regarding outages during the two events. However, AT&T did instruct its agents to be especially empathetic and understanding to customers calling with service outages. AT&T Responses to Interrogatories CSU-17 and CSU-44. During times of high call

[28] Average Speed of Answer, in seconds.
[29] Abandoned Call Rate.
[30] Includes live calls and calls answered by an automated Interactive Voice Response (IVR) unit.

volumes, AT&T will monitor the incoming traffic, as well as the service level metrics such as the number of calls, average speed of answer and abandoned call rate. Tr. 3/19/12, pp. 212 and 213. If necessary, call volume can be shifted between company repair call centers. Tr. 3/19/12, pp. 91, 213 and 214.

AT&T also maintains a website that includes a significant amount of information regarding storm and emergency preparedness. However, this webpage does not contain Connecticut-specific data regarding the number or location of outages nor information regarding restoration estimates. AT&T Response to Interrogatory CSU-15.

With the exception of a few occasions, the Authority finds that incoming calls were answered in a reasonable and timely manner during the two outage events. However, responsiveness to incoming calls is not the entirety of customer communications during outage events such as Tropical Storm Irene and the October Storm. Providing customers with the most accurate and updated information on outages and restoration efforts are an additional component. In its Brief, the OCC questioned AT&T's dissemination of outage information to its customers related to its ability to accurately estimate the number of customers experiencing outages. OCC Brief, p. 79. The OCC noted that AT&T relies on its wireline customers to call in when they are out of service to measure the number and location of out-of-service lines. AT&T Response to Interrogatory OCC-2. Further, when asked to provide data on the total number of wireline services that were out of service at any time during the day during the two outage events, AT&T stated that it did not have that information, as there is subscriber lag time in reporting a service outage. AT&T Response to Interrogatory OCC-265. The OCC maintained that AT&T's use of the number of customers calling in outage reports is not a plausible method of estimating the number of outages. The OCC noted a disparity in the number of calls to AT&T's repair call centers compared to the percentage of access line outages during peak times of the two outage events as further skepticism of AT&T's methods. OCC Brief, pp. 79 and 80.

The OCC contends that AT&T has the capability to develop a more accurate method of estimating the number of system outages through the utilization of its own equipment and infrastructure. The OCC questions the accuracy of AT&T's methods in the event customers do not complete their call to the repair center, or are confused by automated voice response systems. The OCC recommended that AT&T be required to develop and report on an improved system to estimate outages based upon equipment and infrastructure failures. The OCC contends that by improving the method of estimating this information, AT&T would be able to access better information to assist in storm recovery. In addition, this improved method would allow AT&T to provide its customers and governmental officials the benefit of accurate information regarding outages and restoration. OCC Brief, pp. 80-83.

AT&T does not maintain on its website any information for customers regarding outages and restoration estimates. The Authority agrees with the OCC and considers the dissemination of the most accurate outage and restoration information to AT&T customers to be vital during incidents such as the two outage events. Accordingly, AT&T will be ordered to investigate and develop a method of estimating outage information other than relying on customer calls to report an out of service situation.

AT&T should also develop a method to make the outage and restoration information available to its customers.

d. Municipal & Other Utility Company Communications

During and after both outage events, AT&T maintained communications with state and municipal officials as well as providing trained staff at the State EO. AT&T Responses to Interrogatories TE-9 and TE-20R. The AT&T staff installed at the EOC worked on a 24 hours a day basis and were available to address any concerns raised by state, municipal or safety officials. Along with these measures, AT&T also established a Local Response Center (LRC) that was responsible for the overall network restoration efforts. Id.

AT&T's LRC, located in Meriden, serves as the designated emergency command and control site and is activated in response to a disaster or an extraordinary emergency event. When activated, the LRC can either be staffed virtually or physically depending on the type and severity of the event. When staffed virtually, AT&T employees perform their LRC functions in response to emergency events from their daily work locations. However, if conditions warrant, that coordination of storm response can be enhanced by having the AT&T staff working in the same location. In these instances, those staff members will be brought together at the LRC's physical location. AT&T Response to Interrogatory OCC-3. One function of the LRC during the two outage events was to respond and follow-up on issues identified to AT&T staff at the State EOC. Along with these duties, AT&T staff also participated on the daily Governor's conference calls with municipalities. AT&T Response to Interrogatory TE-20R.

When an AT&T External Affairs manager is assigned to a municipality, depending on the services provided, there may also be an account manager assigned. Tr. 3/19/12, p. 93. Typically, AT&T's External Affairs managers are responsible for multiple towns as they serve geographic areas. For instance, an External Affairs manager might be assigned a large city and a number of smaller towns. Tr. 3/19/12, pp. 94 and 95. AT&T stated that at least on an annual basis, municipalities are provided with a copy of its emergency plan. On October 21, 2011, and in an effort to strengthen communications, AT&T issued a letter (October Letter) to all of the municipalities with the contact name of its designated AT&T External Affairs manager as well as key AT&T telephone numbers to call in the event of another major storm. AT&T Response to Interrogatory TE-9, Attachment A. According to AT&T, that letter was drafted in response to the experiences that it had encountered subsequent to Tropical Storm Irene. Tr. 3/19/12, pp. 95 and 96. The information contained within the October Letter issued to municipalities is very important to those municipalities. Accordingly, the Authority will order AT&T to provide, on an annual basis, a letter similar to the October Letter that updates and describes all of the important information and telephone numbers regarding its External Affairs manager and all storm or emergency related communications.

During and after both outage events, AT&T also embedded liaisons at the electric distribution companies' emergency operations centers. AT&T Responses to Interrogatories CSU-13 and TE-13. According to AT&T, this process of placing staff at

the electric distribution companies' emergency operations centers has been done in response to other storms or occasions prior to the two outage events. Further, AT&T states that this coordination between the companies has been very well received by all of the participants. Tr. 3/19/12, pp. 214 and 215.

e. Communications with State Municipal Officials

During and after both storms, AT&T communicated through its Connecticut's State President to the Governor's General Counsel and staff, Department of Environmental Protection Commissioner and PURA Chairman, to advise them of storm preparations and plans underway to facilitate restoration after the storm passed. AT&T's personnel responsibilities included maintaining up-to-date contact lists, compiling damage information, providing guidance and coordination of service restoration activities, communicating status internally and externally and debriefing after each emergency to review actions taken and made recommendations for improvement. AT&T Responses to Interrogatories TE-9 and TE-20. During this time, AT&T also investigated and resolved any inquiries or concerns raised by officials that were provided to company personnel stationed at the State's EOC. Beyond AT&T's presence at the State EOC, AT&T's External Affairs team was assigned to each municipality to provide coverage during the storm event. Id.

AT&T received feedback from municipalities, including the CCM regarding storm-related communications. AT&T's External Affairs team sent a letter to all municipalities with the contact name of its designated AT&T External Affairs manager, as well as key AT&T telephone numbers to call when another major storm event impacts Connecticut. Because nearly 98 percent of AT&T's access lines did not experience a service outage, the majority of issues raised by state and local officials to AT&T were not specific to wireline service outages. Id.

f. Communications with Electric Companies

With respect to AT&T's coordination with the electric companies, the designated AT&T liaisons were stationed at the CL&P and UI EOCs. AT&T liaison's main role was to share information between the two companies to help facilitate restoration efforts and resolve any issues either company has with the other in coordinating work activities related to jointly owned poles. AT&T Responses to Interrogatories TE-1 and TE-13.

According to AT&T, the liaison's role supplements, but does not replace, normal work activities done by the schedulers or construction managers to report work completions or coordinate work activities between the companies. AT&T liaison's role includes the following: (1) notify power company of AT&T's critical facility priorities for power restoration (e.g., remote terminals, central offices, and command centers); (2) take requests for AT&T to restore telecommunications facilities at electric companies' critical command center and field satellite locations; (3) serve as a Single Point for collection for AT&T pole/cable damage reported by power company or AT&T patrols; (4) report damages to the AT&T Construction Management Center bridge/personnel and to the power companies; (5) handle correspondence with the State and municipal officials to report critical AT&T work required to help open roads and make an area safe; (6) manage any AT&T issues regarding specific requirements for work coordination (e.g.,

need for tree trimming or making an area safe before AT&T can do its work); and (7) serve as a single point of contact for any issue AT&T wants to raise with power companies or vice versa (e.g., the need for one company to help the other with pole sets in a particular area). Id.

g. Tropical Storm Irene and October Storm Restoration

AT&T indicated that the 2011 Storms were extraordinary statewide weather events due to the massive strength, slow movement and long duration of the tropical storm and the early arrival of snow with high winds during the snowstorm. The primary hindrances to service restoration included: the statewide nature of the storm; inland and coastal flooding; extensive tree damage causing damage to AT&T's facilities and restricting travel; and massive and widespread commercial power outages. AT&T Responses to Interrogatories TE-1 and TE-13.

AT&T jointly owns 799,702 poles with CL&P and UI in the State. AT&T is custodian of approximately 357,000 of the poles that it jointly-owns and is sole owner of an additional 17,011 poles. AT&T Response to Interrogatory OCC-334. Of these, AT&T replaced 598 utility poles as a result of Tropical Storm Irene and 811 utility poles as a result of the October Storm. AT&T Response to Interrogatory OCC-330.

For both storms, AT&T coordinated and managed all restoration work activities for both inside/outside forces using AT&T's workforce systems. Under the unique conditions created by Tropical Storm Irene, coordination between the Installation and Maintenance (I&M) and Construction and Engineering (C&E) crews and the Network Dispatch center, all monitored by the Meriden LRC, served to facilitate the restoration. The frequent and ongoing communication between managers responsible for I&M and C&E enabled real time identification of downed facilities, enabling a faster restoration to larger numbers of customers. In addition to receiving their work via existing dispatch systems, field personnel received direction from the LRC managers in cases where the need for an urgent restoration was identified. AT&T Responses to Interrogatories TE-1 and TE-9.

h. Wireline Service Trouble Reported

AT&T monitored out of service troubles by network regions (or turfs), each of which are comprised of multiple wire centers. The regions include Berkshire (Route 8 corridor from Shelton to Northwest region of the state), Bridgeport/Gateway (Stratford to Old Greenwich), New Haven (shoreline, Milford to Madison, inland, New Haven to Meriden), East (shoreline, Clinton to Pawcatuck, inland, Middletown to Putnam), and Capital (New Britain north to Enfield). The table below provides specific out of service (OOS) for plain old telephone service (POTS) by regions:

Storm	Berkshire	Bridgeport	Capitol	East	Gateway	New Haven	**Total**
Irene	4,883	2,841	3,426	7,582	2,139	4,587	25,458
October Storm	8,916	1,162	8,366	3,014	1,127	1,769	24,354

AT&T Responses to Interrogatories TE-4 and TE-16.

For Tropical Storm Irene, the OOS troubles reported, from August 27, 2011 through September 6, 2011, totaled 25,458. During that time, AT&T received 73 complaints associated with wireline services. Of the 73 complaints, 26 either mentioned the storm or could reasonably be construed as being storm-related based on the nature of the complaint (i.e., no dial tone). AT&T Response to Interrogatory CSU-6. For the October Storm, the OOS troubles, from October 29, 2011 through November 9, 2011, totaled 24,354. During that time, AT&T received approximately 80 complaints associated with wireline services. Of the 80 complaints, 56 either mentioned the storm or could reasonably be construed as being storm-related based on the nature of the complaint (e.g., no dial tone, downed telephone wires and appointment delays). AT&T Response to Interrogatory CSU-44.

AT&T required its network staff to be available 24/7 and its technicians worked mandatory 12-hour days. AT&T estimates its Connecticut network storm-related overtime to exceed $4 million for Tropical Storm Irene and $3.5 million for the October Storm. Responses to Interrogatories TE-3 and TE-15.

During the 2011 Storms, AT&T utilized approximately 1,600 Connecticut network employees in support of restoration efforts for its wireline services. AT&T's C&E is comprised of 742 employees which includes 108 AT&T line construction employees. AT&T's I&M has 598 employees in Connecticut who worked on restoring individual service outages. Premise technicians were also utilized to perform drop wire restoral work. Finally, AT&T's network staffing also includes an additional 202 employees from its Global Network Field Organization who support other aspects of AT&T's wireline network such as its central offices. Id. For Tropical Storm Irene, there were 81 out of state AT&T technicians integrated with Connecticut crews to address the repair workload. For the October Storm, there were 119 AT&T C&E technicians from other AT&T states that assisted in the storm restoration. AT&T has access to over 100 outside contractors to assist in restoration. Id.

i. Authority Analysis

Both Tropical Storm Irene and the October Storm were extraordinary statewide storms. Both storms caused sustained commercial electric power which was the primary cause of communications outages. Telephone companies' restorations were delayed due to high voltage electrical hazards that had to be cleared and made safe first by the electric companies. The Authority finds AT&T had appropriately operated its network under a state of emergency situation during and post Tropical Storm Irene and the October Storm.[31] Based on the AT&T 2010 Annual Report filed with the Authority, AT&T has 1.147 million access lines. During both storms, about 2% of AT&T's access lines were affected during the peak of Tropical Storm Irene [(25,258/1,147,000) and the

[31] On March 14, 2012, AT&T received the first certification of the Department of Homeland Security's Voluntary Private Sector Preparedness Accreditation and Certification Program (PS-Prep™). The PS-Prep™ program enables private sector organizations to enhance their capabilities for planning, responding to, and recovering from natural disasters and other threats.

October Storm (24,354/1,1147,000)]. The Authority finds OOS troubles for AT&T's wireline service was minimal considering nearly 98% of its access lines were not affected by either storm.

No AT&T central offices lost power during the storms and maintained service due to back-up generators. AT&T Response to Interrogatory TE-4. Regarding AT&T's outside plant network, all of the remote terminals (RTs; used in wireline switch access network) and Video Remote Access Devices (VRADs; used in AT&T's U-verse network) all had back-up batteries providing power for approximately 12-24 hours. After the storms, AT&T deployed generators to all RTs and VRADs. AT&T Responses to Interrogatories TE-25 and OCC-247.

The Authority finds AT&T took additional measures to prepare for an extended commercial outage. In addition to the 240 portable generators already present in the state, during its pre-storm preparation efforts, AT&T positioned an additional 1,000 portable generators outside the storm area to be deployed after the storm had passed. After the storm, AT&T deployed generators to remote terminals and VRADs as needed to replace the lack of commercial power during the storm period. AT&T Responses to Interrogatories TE-24 and TE-25. AT&T also deployed tanker trucks and smaller vehicles that provided both unleaded gasoline and diesel fuel to refuel its generators and vehicles and to provide its own fuel to avoid commercially powered gas stations. These efforts were coordinated by a telephone bridge open 24/7 that allowed command personnel in the Meriden LRC to communicate the status of refueling to workers in the field at all times. AT&T Response to Interrogatory OCC-247. AT&T also doubled its inventory of utility poles, from 500 to 1,000, prior to Tropical Storm Irene. Prior to the arrival of the October Storm, AT&T had 700 poles in inventory and ordered an additional 500 poles after the storm's arrival, which were delivered within one day. AT&T also ordered additional cable prior to the October Storm which was not needed. Tr. 03/19/12, pp. 249-251.

2. Verizon

Verizon prepared its facilities, property, employees etc., in advance of a major storm to ensure a swift response upon the passing of the storm. On August 24, 2012, Verizon contacted its fuel vendor to arrange for topping off the backup generator fuel tanks for the central offices that serve Greenwich. In addition, the generators were tested to ensure that they were in good working order. Verizon Response to Interrogatory TE-1. Prior to Tropical Storm Irene, Verizon activated its EOC and declared a state of emergency on September 2, 2012. Verizon's EOC established a daily conference call to ensure preparation plans were implemented, including topping off all vehicle fuel tanks, securing adequate drop wire, cables and poles and to finalize technician coverage plans. Id. The October Storm had very little effect on Verizon's wireline service area in Greenwich, and the outside plant facilities sustained minimal damage. Verizon did not activate its EOC or declare a state of emergency following the October Storm. Verizon Responses to Interrogatories TE-13 and TE-19.

a. Customer Communications

Verizon stated that its service territory in Greenwich was minimally impacted by both storms, as compared to other parts of the State. Verizon Response to Interrogatory CSU-45. The number of complaints or inquiries received by Verizon supports this statement. During Tropical Storm Irene, Verizon received one business complaint and no inquiries. Verizon Response to Interrogatory CSU-16. During the October Storm, Verizon received no complaints or inquiries. Verizon Response to Interrogatory CSU-44.

Verizon maintains four call centers outside of Connecticut that serve customers in its Greenwich service territory. These call centers are staffed on a 24 hours a day, 7 days a week basis. Verizon Responses to Interrogatories CSU-12 and CSU-43. During Tropical Storm Irene, Verizon staff at the call centers worked 12 hour shifts. During the October Storm, Verizon maximized its workforce by offering and scheduling overtime for each agent. Id. Verizon did not have need to open or establish any other call centers during either of the two outage events. Verizon Responses to Interrogatories CSU-13 and CSU-43.

There is only one item that the Authority takes issue with regarding Verizon's customer communications. Verizon stated that it does not have a web page for Connecticut-specific information on storms or outages. Verizon Response to Interrogatory CSU-15. While Verizon's Greenwich service territory might have been minimally impacted during both storms, this might not be the case in the next storm or emergency event. During events such as Tropical Storm Irene or the October Storm, the dissemination of accurate information to utility customers is as equally important to the answering of customer calls and the acquisition of information from customers. Accordingly, Verizon will be ordered to create a webpage that contains storm and other emergency information for its customers in the Greenwich service territory.

b. Municipal & Other Utility Company Communications

During Tropical Storm Irene, a Verizon Government Affairs Manager was in daily contact with the Greenwich Town Administrator. Throughout these calls, the Verizon staff member would provide a status report on restoration efforts. During the October Storm, daily calls did not take place as the damage to the Verizon system in Greenwich was minimal. Verizon Response to Interrogatory CSU-45. Verizon stated that it also participated daily in the State Telecom Task Force calls to provide restoration updates to state officials. Id. Verizon also had a liaison process in place with its counterparts at CL&P to coordinate restoration activities and priorities. Verizon Response to Interrogatory CSU-46. The liaison process did not involve a Verizon employee at CL&P's emergency operations center, but consisted of one-on-one communications between the Verizon and CL&P operations staff. Verizon states that through this process, it is capable of coordinating its restoration work as efficiently as possible. Tr. 3/19/12, pp. 104 and 105.

c. Communications with State and Municipal Officials

Verizon participated daily on the TTF calls to provide restoration updates to officials. A Verizon Governmental Affairs Manager also contacted the Authority and Greenwich Town Administrator daily and provided a status report on the Verizon

restoration effort. Verizon Response to Interrogatory TE-9. Since Greenwich was minimally impacted by the storm as compared to other parts of the State, restoration efforts went well. Verizon did not receive any complaints from municipal officials regarding its communications during and after the storm. Id.

d. Communications with Electric Companies

Verizon was in daily contact with CL&P during Tropical Storm Irene to determine when and where it would be safe for Verizon crews to restore service. Verizon Response to Interrogatory TE-1. However, during the October Storm because damage in the Greenwich area was minimal, Verizon's EOC was not activated and daily conference calls were not held. While there was an increase in trouble reports on the day following the October Storm, service restoration was not hindered and resource development was not constrained. Verizon Response to Interrogatory TE-13.

e. Tropical Storm Irene and the October Storm Restorations

Verizon indicated that the major factor in service restoration was the restoration of commercial power by the electric companies. Immediately after Tropical Storm Irene passed, 52% of Verizon's service area was without power, with 85 roads totally closed and another 35 roads partially closed. Verizon's ability to restore landline telephone service was delayed until hazardous conditions were removed. Verizon Response to Interrogatory TE-1. On September 2, 2012, after CL&P had cleared much of the Verizon service area of hazardous conditions, Verizon declared a state of emergency. Verizon Response to Interrogatory TE-7. In light of the minimal damage from the October Storm, service restoration was not hindered by any unique factors. Resource development was not constrained. Verizon Response to Interrogatory TE-13.

f. Wireline Service Trouble Reported

Verizon stated that despite the extensive power outage in its service area, its OOS trouble load after Tropical Storm Irene had not exceeded 316 customers (which occurred on August 31, 2012). For the October Storm, the trouble load had not exceeded 130 customers (which occurred on October 31, 2011). The table below provides specific Verizon OOS customers associated with each storm:

Storm Irene & Out of Service Reported		October Storm & Out of Service Reported	
8/27/11	76	10/29/11	30
8/28/11	107	10/30/11	60
8/29/11	193	10/31/11	130
8/30/11	273	11/01/11	124
8/31/11	316	11/02/11	129
9/1/11	218	11/03/11	79
9/2/11	222	11/04/11	50
9/3/11	220	11/05/11	44
9/4/11	216	11/06/11	31
9/5/11	159	11/07/11	40
9/6/11	156	11/08/11	32
		11/09/11	27
Total	2,156	Total	776

Verizon Responses to Interrogatories TE-4 and TE-16.

g. Authority Analysis

The Authority finds that Verizon appropriately operated its network under a state of emergency situation. According to the Verizon's 2010 Annual Report, Verizon has 22,046 access lines. There were approximately 9% of Verizon's access lines affected (2,156/22,046) during Tropical Storm Irene and approximately 3.5% (776/22,046) access lines affected following the October Storm. Based on the number of Verizon customers in Connecticut, POTS wireline service affected by both storms was minimal. Neither of its two central offices serving its Connecticut service area lost commercial nor back-up power. Verizon Response to Interrogatory OCC-337. Verizon deployed back-up generators to a small number of remote terminals that lost commercial power during the storm. Verizon Response to Interrogatory OCC-267.

3. Post-Storms Review

AT&T received feedback from municipalities, including the CCM, regarding post-storm communications with AT&T. In an effort to strengthen communications, AT&T's External Affairs team recently sent a letter to all municipalities with the contact name of its designated External Affairs manager as well as key AT&T telephone numbers. It has had several internal reviews at the departmental and LRC/EOC levels that are still ongoing with action items being addressed.

AT&T's post-storms review items that have been completed are: (1) expanding the use of existing databases by the LRC personnel to further assist in the prioritization of work; (2) creating in-state warehouse stocking of ready-to-eat meals (MREs) for easier transportation to technicians; and (3) enhance procedures, databases and practices to better utilize resources for generator deployment during periods of extended commercial power failure. AT&T Responses to Interrogatories TE-10 and TE-21.

Given the limited effect of the 2011 Storms on Verizon's customer base, it has no specific plan to complete a post-storm review for Connecticut. However, Verizon indicated that in order to ensure the availability of adequate resources in Connecticut, it will continue shifting workforce from other service areas to meet demand for additional personnel in areas affected by significant storms or other unusual events. Verizon Response to Interrogatory TE-21.

AT&T and Verizon will be required to update their emergency plans to include the above post-storms reviews in Docket No. 12-06-11.

4. Live Emergency Drills

The OCC contends that AT&T and Verizon rely on table-top exercises rather than live emergency drills in Connecticut. AT&T conducts table-top exercises as part of its emergency planning, which are "a virtual exercise where a scenario is laid out at the beginning of the exercise … that's walked through and learnings are discussed." One of these table-top exercises was conducted by AT&T in 2011, but there is no company requirement for an annual table-top drill in Connecticut. AT&T did not perform a live, physical emergency storm drill involving the movement of equipment in Connecticut in 2010 or 2011. Verizon similarly relies on table-top exercises rather than physical drills, where tabletop exercises deal with "different areas in the northeast." OCC Brief, p. 45.

The OCC recommends that the Authority require AT&T and Verizon to develop and submit Connecticut-specific emergency plans containing, among other things, relevant Connecticut locations and listing Connecticut-based employees with their responsibilities and contact information. The OCC also recommends that the Authority direct AT&T and Verizon to develop emergency preparation exercises annually that are specific to Connecticut. OCC Brief, 46.

AT&T and Verizon filed their national emergency preparedness plans in Docket No. 11-05-22 DPUC Review of Updated Emergency Plans. AT&T's plan is a "national" plan, while Verizon's plan is a "northeast area" plan. Neither of the companys' plans have a section that is specific to Connecticut. The Authority finds the OCC's recommendations have merit and will require AT&T and Verizon to develop emergency preparation exercises annually and report to the Authority, not later than January 1 of each year beginning January 1, 2013. AT&T and Verizon shall include these requirements in the companies' updated emergency plans.

5. Service Outage Reporting

The OCC also recommends that the Authority require AT&T to develop and include in its future reports better estimates of outages based on information regarding equipment and infrastructure failures, including RT failures. According to the OCC, AT&T knows of the RT failures but does not at this point use that information to develop better outage estimates. OCC Brief, p. 77. The Authority agrees.

AT&T and Verizon currently report OOS troubles from calls made to each company's repair centers by the affected customers. By tracking the number of outages caused by troubled RTs and other equipment failures, both AT&T and Verizon would be

able to access, assess and better report information to manage its storm recovery and/or any service outages.[32] Thus, the Authority will require AT&T and Verizon to use and track such mechanisms in formulating the outage reports.

The Communications Workers of America (CWA) commented that AT&T's staffing cuts have adversely affected its outside plant maintenance, storm restoration and service quality performance. CCW requests that the Authority establish standards in this proceeding including a minimum staffing level requirement. Tr. 03/19/12, p. 22.

The Authority has initiated Docket No. 12-06-10 PURA Establishment of Industry Performance Standards for Telecommunications Companies that is expected to establish standards for restoration of intrastate telecommunications services after any emergency. In the opinion of the Authority, the CWA's concerns should be addressed in that proceeding.[33]

E. POLE INSPECTION

Most utility poles in Connecticut are jointly owned between an EDC and a telephone company. Approximately half of all utility poles that support electric facilities are maintained by the EDCs; the others are maintained by AT&T and Verizon.[34] AT&T and Verizon Responses to Interrogatory OCC-7; CL&P Response to Interrogatory AG-22; UI Response to Interrogatory OCC-339.

The EDCs have long had a pole maintenance process by which each pole is inspected and maintained on a regular basis. The EDCs report to the Authority on their pole maintenance practices annually in compliance with Conn. Gen. Stat. 16-32g.[35] This statute only applies to maintenance practices of EDCs, not to those of AT&T or Verizon, for which there is no statutory maintenance reporting requirement.

AT&T states that it currently inspects the utility poles that it owns on a 10-year inspection cycle. Prior to 2010, AT&T did not have a centralized, formalized pole inspection process that ensured poles were consistently inspected and maintained, and it did not have easy access to its own pole inspection data. Tr. 03/19/12, pp. 226-231. Verizon states that it does not inspect the utility poles on a formal cycle basis; however its employees are directed to inspect poles prior to climbing and performing any work

[32] This mechanism should not be an administrative burden to the companies. The record indicated that AT&T's RTs reported approximately 14,000 access lines were out of service during the peak of each storm. Late Filed Exhibit No. 11.

[33] The Authority has already addressed AT&T's service quality performance by its July 27, 2011 Decision in Docket No. 10-04-12RE01 DPUC Proceeding Pursuant to Section 16-41 of the General Statutes of Connecticut to Determine Whether The Southern New England Telephone Company d/b/a AT&T Connecticut Should be Fined for Failure to Comply with Quality of Service Standards for the Provision of Telecommunications Services - Settlement Agreement.

[34] A small proportion of poles are solely owned by either an EDC or a telephone company.

[35] The current pole maintenance practices are filed in Docket No. 11-12-13, PURA Review of Electric Companies' and Electric Distribution Companies' Plans for Maintenance of Transmission and Distribution Overhead and Underground Lines.

and make observations while they are in the field. Tr. 03/20/12, pp. 326, 341. The vast majority of AT&T and Verizon custodial poles support electric distribution facilities. Failure to properly maintain poles that support electric facilities could endanger public safety as well as result in negative consequences to electric distribution system reliability. To ensure the integrity of equipment attached to the poles, the Authority requires assurances from AT&T and Verizon that, as long as they are responsible for maintaining utility poles, they should be reporting to the PURA their maintenance practices. Therefore, the Authority will order AT&T and Verizon to file their pole maintenance practices annually, as do the EDCs. The utility pole inspection plans shall include, but not be limited to, the inspection interval, number of poles inspected, replaced and associated trained personnel involved in the inspection and a detailed description of the inspection techniques that will be applied.

F. POLE ADMINISTRATION

The Authority investigated the appointment of a third-party pole administrator in this proceeding to determine if the current pole administration structure had a negative effect on the overall service restoration process. Specifically, the Authority investigated utility pole restoration issues and whether they could be improved with the appointment of a third-party statewide utility pole. Response to Motion No. 21.

There were many recommendations from various partcipants to change or modify the structure of the current pole administration. The Authority finds that no evidence presented supports the notion that the current pole administration structure delayed the restoration of services during the 2011 Storms. The evidence indicates that the issue with utility pole administration is not restoration, but a claim that there is an unacceptable delay in allowing third parties to attach their facilities to utility poles and that the current pole attachment process has become inefficient.

The Authority will require that the Pole Attachment Working Group (Working Group) reconvene under Docket No. 11-03-07, DPUC Investigation Into the Appointment of a Third Party Statewide Utility Telephone Pole Administrator for the State of Connecticut no later than September 1, 2012. The Working Group is hereby directed to submit a status report to the Authority on resolved and outstanding issues by November 15, 2012. The Authority will require the Working Group to develop and recommend to the Authority, no later than January 31, 2013, a consensus pole administration structure to facilitate utility pole attachments. The Working Group should begin its discussions with the proposals submitted in this proceeding by the OCC, CL&P, UI and Fiber Technologies. The above reports shall be submitted in Docket No. 11-03-07.

G. WIRELESS SERVICE OUTAGES

1. Wireless Carriers' 2011 Storm Experience

Throughout this proceeding, the wireless carriers have argued that the Authority has no jurisdiction over the wireless industry relative to storm outages and service restoral. Indeed, they have continually referred the Authority to the Federal Communications Commission (FCC), citing their disaster reporting responsibilities

pursuant to the FCC's Disaster Information Reporting System (DIRS). Nevertheless, despite these arguments, the carriers responded to Authority staff and party data requests, providing the requested information either on the public record or pursuant to protective order.

In reviewing these responses, the Authority finds that, in general, the delivery of the wireless carriers' services immediately following the two storms was affected by two key issues: (1) the predominant loss of commercial power to the cell sites and (2) the loss of commercial power to the backhaul facilities between carrier cell sites and their respective switching centers. In a minimum number of cases, some site equipment was damaged that also affected the provision of service. AT&T Mobility Response to Interrogatory CMRS-16; Sprint Response to Interrogatory CMRS-16; T-Mobile Response to Interrogatory CMRS-16; and Verizon Wireless Response to Interrogatory CMRS-16.

The wireless carriers also provided on the public record and pursuant to protective order, the measures that they have taken to address the service outages resulting from the 2011 Storms and the actions that they have taken to improve network reliability. For example, AT&T Mobility discussed its deployment of a self-optimizing technology, the actions it has taken to enhance battery performance, the addition of more back-up generators to critical cell sites and standardizing its generator electrical plugs. AT&T Mobility has also deployed fiber transport facilities to its cell towers to improve backhaul transport. Lastly, AT&T Mobility stated that it has incorporated the knowledge gained from the various disaster events across its footprint, and strives to improve efficiencies going forward, such as increasing the inventory of portable generators, and implementing improvements in the deployment and fueling and refueling of its generators. Tr. 3/21/12, pp. 478-480; Late Filed Exhibits No. 18 and 20.

Sprint, through its Network Initiative, has deployed new technologies that provide for greater output power to its tower antennas. According to the Sprint witness, this is expected to increase its cell tower footprint producing greater overlap between its cell sites. Sprint has also begun to sunset its iDEN technology that will free up additional spectrum and provide for more efficient use of that spectrum. Sprint provided under protective order more specific details concerning its plans for spectrum efficiencies, battery improvements, reliability improvements, etc. and the deployment of fiber transport to cell sites to replace the T-1 facilities currently in place. Tr. 3/21/12, pp. 483-486, 489-492; Late Filed Exhibits No. 19 and 22.

The witness for T-Mobile testified that the company was looking to enhance its network by hardening site reliability through its network modernization projects. These enhancements are expected to provide for improved network optimization, increase coverage, and reliability. T-Mobile also described its "transport reliability hardening" project that uses a newer technology called ring topology for all its voice and data communications as well as to transition more network facilities from T-1 lines to Ethenet backhaul/fiber. The company is also replacing certain antennas with integrated radio. Tr. 3/23/12, pp. 546-551; Late Filed Exhibits No. 27 and 28.

Verizon Wireless indicated that while it has no specific initiative to upgrade its network, it is constantly focusing on network redundancy relative to equipment or

design. The company witness also testified that it is building redundancy into its switching center equipment so that if a piece of equipment fails, there are others present to keep service up and running. Verizon Wireless also regularly checks its cell site batteries to make sure that they are at the proper charge so that they are fully functional.

Lastly, Verizon Wireless is taking several steps to address the loss of back-haul facilities. For example, it is pursuing the installation of permanent back-up generators at all cell sites that are not currently so equipped (approximately 10%). It is also working to convert from a traditional "copper wire" to a fiber-based backhaul system. Additionally, where feasible and permitted by the local backhaul provider, the company is seeking to provide emergency back-up power to fiber electronic equipment locations. Finally, Verizon Wireless is expanding the number of vendors it uses to provide fiber backhaul services so that its network is robust and reliable. Verizon Wireless Response to Interrogatory CMRS-16; Tr. 3/21/12, pp. 492-495.

2. Wireless Carrier Service Outage Reporting Requirements During Declared State and Federal Emergencies

The FCC and the Federal Department of Homeland Security (DHS) have concluded that common carrier network information, including such information maintained by wireless carriers, must presumptively be treated confidential by federal and state government entities to ensure that national homeland security efforts are not compromised by the release of confidential service provider network information to the public. T-Mobile Response to Interrogatory CMRS-1. According to T-Mobile, all information is collected and submitted into the FCC's DIRS database, which was activated by the FCC prior to the 2011 Storms making landfall and the anticipated advancement along the Atlantic seaboard. Id. The DIRS database is a voluntary, web-based system that communications providers, including the wireless carriers, use to report communications infrastructure status and situational awareness information during incidents such as the 2011 Storms. T-Mobile states that the FCC shares its aggregated information from the DIRS database with other agencies to inform federal, state and local government of impacted communications services. Id.

Immediately following Tropical Storm Irene and the October Winter Storm, during state service restoral efforts, the TTF was established and staffed by various state agencies and the telecommunications carriers as a means of expediting the restoral of service throughout the state. While activated, the carriers were required to report to the TTF, in most cases, twice daily on the status of their service restoral efforts. Wireless carrier information requested by the TTF included the total number of service outages affecting each company, an estimate of the total number of customers/access lines/wireless numbers without service as well as an update of each company's latest restoral efforts. AT&T Response to Interrogatory OCC-34, Attachment A; AT&T Supplemental Response to OCC-34, Attachments C Parts 1 and 2, Attachment D.

The Authority notes that pursuant to 47 CFR §4.2 Availability of Reports Filed Under this Part, this information is confidential. Thus, the Authority's access to this information is not readily available and would also require a formal request to, and approval from the FCC in order to gain access to any of the carriers' storm related data.

Tr. 3/21/12, pp. 520 and 521. Clearly, during times of storm recovery when immediate access to this information by the Authority is imperative, receipt of this information by the PURA after following these FCC requirements would be difficult to obtain and most likely untimely.

The Authority recognizes the importance and value of the DIRS. However, accessing the information through the DIRS during these types of events may not be timely and would require a formal process pursuant to federal regulations. See 47 CFR 0.461, Requests for Inspection of Materials Not Routinely Available for Public Inspection. To make access to this information more readily available during declared state and federal emergencies, the Authority convened a technical meeting with the wireless industry to discuss the best means to accomplish access to this data. May 18, 2012 Notice of Technical Meeting. Following that technical meeting, the industry filed its proposal (Wireless Proposal). See the Attachment to the June 13, 2012 Letter from David W. Bogan to Ms. Kimberley J. Santopietro.

The purpose of the Wireless Proposal was to describe the collaborative efforts between certain wireless carriers and the Authority relating to the mutual sharing of information regarding situational awareness and operational status during times of crisis. Specifically, the wireless carriers have committed to provide the Authority with certain information regarding the operational status in the event of a state and federally declared emergency in Connecticut consistent with the FCC's DIRS. According to the Wireless Proposal, the wireless carriers will provide the information on a daily basis, except when there is a material change in status, in which case the wireless carriers will provide the PURA with the updated information.[36] The carriers will also provide such communications to convey the status of operations during emergency situations. The sharing of such information would be limited to efforts to stabilize, recover and restore operations to levels necessary to support the communications needs of the carrier's respective customers within Connecticut. Therefore, the information provided to the PURA is intended to eliminate duplicative requests for such information from various state and local agencies.[37]

The Authority finds the Wireless Proposal to be responsive and satisfies the PURA's needs when conveying outage/restoral information to other state agencies. The Authority acknowledges and appreciates the wireless industry's efforts in meeting the PURA's goals of expediting service restoral in times of emergency situations and recognizes that this results from the mutual collaborative relationship that the PURA has developed with the carriers over the years. Clearly, the Wireless Proposal reflects that relationship, which is mutually beneficial to the Authority and the industry, and ultimately to the businesses and citizens of the state.

H. VIDEO CERTIFICATE HOLDERS' STORM PREPAREDNESS

Seven of the eight holders of Certificates of Video Franchise Authority (CVFA) and Certificates of Cable Franchise Authority (CCFA, collectively Certificate Holders)

[36] Connecticut Emergency Support Function #12 provides the types of information and times by which it should be reported by the carriers.

[37] Id., Attachment, p. 1.

named at least one weather forecasting service or resource that they rely upon in determining staffing. Only TVC did not name any weather forecasting specific resource it uses. Certificate Holders Responses to Interrogatories CA-2 and CA-12. Among the weather forecasting resources used by Certificate Holders were the National Weather Service, the Weather Channel and local broadcast news programs, the National Oceanic and Atmospheric Administration and the National Hurricane Center. Id. All Certificate Holders filed copies of their emergency disaster or response plans required pursuant to Conn. Gen. Stat. §16-32e. Certificate Holders Responses to Interrogatory CA-7.[38] Except for TVC during the October Storm, which did little damage in extreme Southeastern Connecticut, Certificate Holders activated their emergency plans or parts of them for both storms. Certificate Holders Responses to Interrogatories CA-1 and CA-11.

Certificate Holders activated their emergency plans at different times prior to or about the times that Tropical Storm Irene and the October Storm began to impact Connecticut. Id. Below is a sampling of the specific emergency response preparation activities the Certificate Holders engaged in as the 2011 Storms approached.

For Tropical Storm Irene, MetroCast initiated actions on August 26, 2011, identifying areas of its Connecticut footprint that were likely to be impacted, in addition to determining that customer calls would be redirected if the Connecticut call center was adversely affected. Outside contractors were also contacted and local management contacted CL&P to establish direct contact for local inquiries related to power issues. MetroCast Response to Interrogatory CA-1. When it became apparent to TVC that Tropical Storm Irene was going to hit land, emergency steps were implemented, including acquiring generators. TVC Response to Interrogatory CA-1. Charter began preparations for the potential effects of the Tropical Storm Irene on August 25, 2011, which included the establishment of emergency operations centers in Newtown and Windham and the fueling and deployment of back-up generators. Charter Response to Interrogatory CA-1.

For both storms, Comcast monitored and tracked the impending weather events. When Comcast determined that each storm would have an impact on the state, it increased staffing and set up call-in numbers for employees. Its own work crews and contractors were deployed, with Comcast also making plans for accommodations and meals, where necessary. Comcast Responses to Interrogatories CA-1 and CA-11. Cablevision stated that before each storm, each Operations and Network Center goes through a checklist to determine staff needs. Cablevision also indicated that the pre-storm preparation for the October Storm was more compressed because there was less warning about its potential effect. Cablevision Responses to CA-1 and CA-11.

Verizon began to monitor Tropical Storm Irene on August 22, 2011. Among the storm preparation activities Verizon engaged in were topping off back-up generators with fuel and daily conferences to ensure that other preparation activities were being

[38] Emergency plans filed in this docket were those that were filed in Docket No. 11-05-22, DPUC Review of Updated Emergency Plans (Emergency Plans Docket). The Emergency Plans Docket was suspended pursuant to the Authority's December 29, 2011 letter to the participants in the Emergency Plans Docket.

implemented. For the October Storm, Verizon's emergency plan was not activated. Verizon Responses to Interrogatories CA-1 and CA-11.

For Tropical Storm Irene, AT&T took action to prepare for the event when weather forecasts indicated a hurricane was approaching the northeast. AT&T's command-and-control center, GNOC, began preplanning as the storm approached the South and North Carolina coasts. Preparation began well in advance of the storm's arrival in Connecticut, with AT&T verifying supplies, including replacement poles and developing work force plans, among other activities. AT&T Response to Interrogatory TE-1. For the October Storm, AT&T began its pre-storm activities when weather forecasts indicated a potentially heavy snow storm was approaching. The GNOC again initiated preplanning activities, including distributing reports communicating the status of AT&T's network to those needing those needing the information, including the Authority and other stakeholders. AT&T Response to Interrogatory TE-13.

All Certificate Holders stated that they imposed no limit on overtime for their staff during Tropical Storm Irene and the October Storm. Certificate Holders Responses to Interrogatories CA-6 and CA-16.

The Authority finds that Certificate Holders implemented their emergency plans or applicable parts thereof in a timely and effective manner in preparing for the 2011 Storms.

I. VIDEO CERTIFICATE HOLDERS' RESTORATION EFFORTS

Neither Connecticut law nor regulation include specific performance standards or prescribed timelines with which video Certificate Holders must comply in restoring or attempting to restore service in the event of video service interruptions caused by severe weather events or other disasters. All Certificate Holders are subject to the customer service requirements of 47 CFR 76.309(c).[39] Among the standards with which cable operators must comply is 47 CFR 76.309(c)(2)(ii), which states, "Excluding conditions beyond the control of the operator, the cable operator will begin working on "service interruptions" promptly and in no event later than 24 hours after the interruption becomes known. The cable operator must begin actions to correct other service problems the next business day after notification of the service problem." Pursuant to 47 CFR 76.309(c)(4)(iii), "service interruption" means "the loss of picture or sound on one or more cable channels." The federal customer service standards do not define the phrase "begin working on." The Authority finds that, within the context of 47 CFR 76.309(c)(2)(ii) and considering the severity of the 2011 Storms, "begin working on" means activating emergency plans, as applicable, or commencing communications with the electric power companies (or keeping informed of the restoration activities of the electric power companies) to determine the safest and most efficient schedule for video service restoration which, under most circumstances, must follow the restoration of electric power. The Authority finds that, to ensure the safety of the public and Certificate Holders' employees and to restore service in the most efficient and logical manner, "begin[ning] working on service interruptions" means initiating activities that

[39] For CVFA holders, the requirement is at Conn. Gen. Stat. §16-331j(d), and for CCFA holders, the requirement is at Conn. Gen. Stat. §16-331u(d).

must be performed well before sending technical staff into the field to take the corrective actions required to restore interrupted video service.[40]

Some Certificate Holders specified that they embedded employees at CL&P and/or UI's Command Centers. Comcast Responses to Interrogatories CA-1 and CA-11; Charter Responses to Interrogatories CA-1 and CA-11; Tr. 3/19/12, pp. 55 and 56; Tr. 3/19/12, p. 96. Comcast stated that embedding employees at CL&P and UI allowed it to focus on areas which had been made safe by the electric power companies for restoration of video services. Comcast Responses to Interrogatories CA-1 and CA-11. TVC, a subsidiary of Groton Utilities, the municipal electric company service providing service in Groton, coordinated its restoration efforts for Tropical Storm Irene at the City of Groton Municipal Building with Groton Utilities' electric power component. TVC Response to Interrogatory CA-1. During and after the 2011 Storms, Certificate Holders performed numerous restoration-related activities, including the following.

For the 2011 Storms, Comcast conducted internal storm calls from its Regional Emergency Center in Berlin, Connecticut each day. Comcast monitored its network from its Network Operations Center in addition to performing "ride outs" to determine damage and downed drops. Fiber was shipped to key locations to ensure that it could be on-site quickly. Comcast Responses to Interrogatories CA-1 and CA-11. Cox monitored the effect of the 2011 Storms from its situation room, following CL&P's restoration of electric power. Cox noted that much of its restoration efforts, as was the case with all Certificate Holders, were dependent upon the pace of restoration of CL&P and safety issues. When the weather and safety conditions allowed, Cox deployed generators throughout its service areas to enable the network to continue to operate for a time while commercial power was still out. After each storm, Cox personnel followed CL&P as it made areas safe for Cox personnel and contractors to begin the work of restoring video service to affected subscribers. Cox Responses to CA-1 and CA-11.

MetroCast scheduled two conference calls per day during the pendency of the Tropical Storm Irene to evaluate issues such as system damage and resource assignment, including contractors. MetroCast conducted ride-outs of its system continuously to assess plant damage. A MetroCast supervisor and construction coordinator communicated daily with CL&P to obtain their outage updates and to report damage. Resource and staff allocation was performed as needed throughout the storm. MetroCast Response to Interrogatory CA-1. Because the October Storm had considerably less impact on MetroCast's operations in southeastern Connecticut than elsewhere in the state, its Emergency Plan was deactivated on October 29, 2011. MetroCast Response to Interrogatory CA-11.

AT&T managed its responses to the 2011 Storms on an "enterprise wide basis" for all of its affiliates. For Tropical Storm Irene, AT&T activated two response centers to support Connecticut restoration of video, telecommunications and Internet services. In addition to embedding staff with CL&P and UI, AT&T participated in conference calls with Governor Malloy to discuss federal disaster assistance and participating on the

[40] The Authority notes that reports produced by consultants hired on behalf of the PURA, the OCC and CL&P did not directly address the Certificate Holders' performance in restoring video service to affected subscribers.

TTF at the State Armory. Areas that AT&T prioritized for restoration were determined, in part, by working with CL&P and UI. AT&T Response to Interrogatory TE-1. AT&T's response during and after the October Storm essentially mirrored its responses for Tropical Storm Irene. AT&T Response to Interrogatory TE-13.

For both storms, Charter operated from its disaster Recovery Plan checklist developed over the last five years. Reports regarding system status, personnel and resources were received through calls held four times a day to coordinate restoration efforts. Status reports were also made to the Authority on a daily or twice daily basis. Charter participated on the TTF during both storms. Charter Responses to Interrogatories CA-1 and CA-11.

Certificate Holders stated that no employees suffered significant injuries as a result of their field employees' storm restoration efforts. The few injuries that did occur as a result of restoring video service after the 2011 Storms were characterized as minor. Certificate Holders Responses to Interrogatory CA-10 and CA-20.

Certificate Holders mentioned factors which hindered their efforts to restore video services. The most common reasons cited were that restoration efforts were delayed because hazardous or unsafe conditions (downed electrical wires, trees, branches and debris on roads, etc.) prevented their employees and contractors from beginning video restoration activities. Because clearing roads and deactivating, repairing and/or replacing downed electrical power lines and damaged or felled utility poles were the highest priority, Certificate Holders' restoration activities, by necessity, generally could not start in earnest until the former activities had been completed, primarily by CL&P and UI. Certificate Holders Responses to CA-1 and CA-11.

Verizon stated that because the effects the 2011 Storms had on its Greenwich service area were relatively minor, no post-event review was conducted for either weather event. Verizon Responses to Interrogatories CA-9 and CA-19. TVC indicated that it does not have a policy on post-event reviews and that a review subsequent to the October Storm was unnecessary because it resulted in minimal damage in TVC's service area in southeastern Connecticut. TVC Responses to Interrogatories CA-9 and CA-19. MetroCast performed a review after Tropical Storm Irene, but not after the October Storm, because there was little damage as a result of that storm. MetroCast Responses to Interrogatories CA-9 and CA-19. All other Certificate Holders stated that post-event reviews were conducted after both storms. Cox, Comcast, AT&T, Cablevision and Charter Responses to Interrogatories CA-9 and CA-19.

The Authority finds that Certificate Holders' performance in restoring video service in the wake of the damage caused by the 2011 Storms was reasonable and in the public interest and in the best interests of their employees who were responsible for going into the field to restore video service to subscribers. The Authority finds that Certificate Holders responded in as timely a manner as was reasonably possible, given the need to coordinate complex and dangerous post-storm activities with other stakeholders and utility providers whose services also needed to be restored. The Authority also finds that Certificate Holders deployment of back-up generators was a satisfactory temporary solution to the widespread loss of commercial electric power and was in the public interest.

Finally, the record in this proceeding did not uncover any noteworthy shortcomings or deficiencies in the Certificate Holders' individual and collective responses to the 2011 Storms that require corrective action at this time. The Authority is pleased that the clear majority of the Certificate Holders recognized the value of conducting formal or informal post-event reviews of their performance before, during and after the severe weather events to modify their emergency plans based on their real world experiences, as needed. The Authority expects the Certificate Holders to continue this practice in the future.

J. VIDEO CERTIFICATE HOLDERS' COMMUNICATION WITH CUSTOMERS, MUNICIPALITIES AND THE PUBLIC

As discussed in greater detail below, for the 2011 Storms, the Certificate Holders indicated that they maintained communications with municipal officials in their respective video service areas. No Certificate Holder stated that it had received any complaints regarding their communication efforts during the Storms. Certificate Holders Responses to Interrogatories CA-8 and CA-18.

1. Cablevision

a. Customer Communications

Cablevision maintains a total of six call centers that can respond to incoming customer calls. Calls from Connecticut customers are primarily handled by two in-state call centers. However additional call centers permit Cablevision to form a single "virtual call center" allowing the Connecticut calls to be answered at any call center. All of Cablevision's call centers were fully staffed during both outage events. Cablevision Response to Interrogatory CSU-48. In the event of storms or other anticipated incidents, Cablevision makes preparations so as to deal with increased call volume. Cablevision offers overtime and allows shift adjustments at its call centers so staff may work 10-12 hour shifts. Cablevision also stated that its preparations insure that call centers are adequately equipped and that emergency generators are adequately fueled in case they are needed. Tr. 3/19/12, pp. 27 and 28. Cablevision's call centers are staffed to operate on a 24 hours a day, 365 days per year basis. Cablevision Responses to Interrogatories CSU-52 and CSU-63. A sample of Cablevision's call center performance metrics follows:

Date	ASA[41]	ACR%[42]	Total Calls[43]	Date	ASA	ACR%	Total Calls
8/27/11	51	6.5%	7,025	**10/27/11**	10	0.8%	9,434
8/28/11	151	23.9%	13,337	**10/28/11**	8	0.7%	9,149
8/29/11	77	20.4%	28,666	**10/29/11**	187	23.0%	12,042
8/30/11	138	13.2%	19,214	**10/30/11**	323	29.6%	15,078
8/31/11	111	7.9%	18,596	**10/31/11**	149	14.4%	16,124
9/01/11	125	9.4%	17,715	**11/01/11**	112	11.3%	16,226

[41] Average Speed of Answer, in seconds. Also includes calls answered by the automated IVR.
[42] Abandoned Call Rate, equals abandoned calls divided by total calls (live and IVR).
[43] Also includes automated IVR calls.

9/02/11	41	2.7%	16,199	**11/02/11**	53	4.8%	14,353
9/03/11	14	0.6%	10,586	**11/03/11**	55	5.2%	13,287
9/04/11	4	0.3%	6,968	**11/04/11**	28	2.9%	13,720
9/05/11	3	0.1%	7,881	**11/05/11**	39	3.6%	9,949
9/06/11	96	7.9%	14,928	**11/06/11**	35	3.4%	7,707

Cablevision Response to Interrogatory CSU-49.

From August 27, 2011 through September 6, 2011, total peak staff at Cablevision's call centers averaged approximately 850 employees. For the time period of October 27, 2011 through November 13, 2011, total peak staff at Cablevision's call centers averaged approximately 738 employees. Id. Cablevision stated that given the extent of the disruption caused by the outage events, its customer call centers performed well and it was content with its contingency planning. Cablevision Response to Interrogatory CSU-62; Tr. 3/19/12, pp. 28 and 29.

Cablevision provided its customers via its web site important information during Tropical Storm Irene, but not during the October Storm. Cablevision Responses to Interrogatories CSU-54 and CSU-65. It is the Authority's position that during events such as Tropical Storm Irene or the October Storm, the dissemination of accurate information to utility customers is as equally important to the answering of customer calls and the acquisition of information from customers. Accordingly, Cablevision will be ordered to create a webpage that contains storm and other emergency information for its customers in Connecticut.

b. Municipal & Other Utility Company Communications

According to Cablevision, it has a well-established working relationship with the chief elected officials in all 24 municipalities of its service area. Cablevision provides all of the chief local officials with contact information that enables them to reach its Connecticut-based Government Affairs staff on a 24 hours a day, 7 days a week basis for any storm-related or other matter. Cablevision Responses to Interrogatories CATV-8 and CATV-18. Cablevision stated that on a regular basis it maintains its contact and relationships with local municipal officials. Tr. 3/19/12, pp. 29 and 30. During and after Tropical Storm Irene, Cablevision did not receive any complaints from municipal officials in its service territory. During and after the October Storm, Cablevision received only one inquiry regarding service-credit policies from the municipal officials in its service territory. Cablevision Responses to Interrogatories CATV-8 and CATV-18.

During incidents such as the two outage events, Cablevision maintains direct communications with CL&P and UI at almost every level. This communication allows for Cablevision to monitor its restoration process from the executive level down to the street level where individual trucks are assigned. Further, Cablevision was able to maintain a presence at the emergency operations centers of both CL&P and UI during both storms and found this measure to be very beneficial. Tr. 3/19/12, pp. 30-32.

2. Charter Communications

a. Customer Communications

Charter operates virtual call centers nationally that are established to respond to customer service calls. The virtual call centers are capable of handling fluctuating call volume at any time such as what was encountered during the two outage events. When the call centers become aware of widespread power outages resulting from storms, Charter staff is provided with continuous updates regarding the status of the network and the affect to service. Charter's automated IVR system can announce a message regarding outage situations as well as having this information available on its web site. Charter Response to Interrogatory CSU-48. Charter's call centers are staffed to be available on 24 hours per day, 7 days per week basis. Charter Responses to Interrogatories CSU-52 and CSU-63. Charter stated that its virtual call center approach was well situated to deal with the increase in call volume resulting from service outages due to the two storms. Charter contends that because incoming customer calls can be distributed to the next available agent at the any one of its call centers, incoming call volume was successfully responded to as its agents. Charter Response to Interrogatories CSU-51 and 62. The following are performance metrics reported by Charter to the FCC for its virtual call centers:

Month	ASA[44]	ACR%[45]	Total Calls
August	3	0.44%	10,222,514
September	3	0.51%	9,862,965
October	4	0.41%	9,528,633
November	4	0.44%	9,083,695

Charter Response to Interrogatories CSU-49 and CSU-60.

Charter provided copies of information and instructions that were distributed to call center staff to assist them with answering customer questions and complaints regarding service outages. Based on the documentation provided, Charter call center staff was given sufficient information in order to assist its customers. Charter Responses to Interrogatories CSU-58 and CSU-69. However, Charter indicated that it does not have a web page dedicated to storm information for its customers. During and after both outage events, Charter placed a banner on its website that contained information specific to the storm. Charter stated that it is exploring different methods of communicating more effectively to its customers that are affected by storms or other disasters that affect service. Charter Responses to Interrogatories CSU-54 and CSU-65. As stated previously, it is the Authority's position that during events such as Tropical Storm Irene or the October Storm, the dissemination of accurate information to utility customers is as equally important to the answering of customer calls and the acquisition of information from customers. Accordingly, Charter will be ordered to create a webpage that contains storm and other emergency information for its customers in Connecticut.

b. Municipal & Other Utility Company Communications

[44] Average Speed of Answer, in seconds.
[45] Abandoned Call Rate.

Charter's Government Relations and Public Relations staff was responsible for establishing and maintaining communications with municipal officials during the two outage events. In this capacity, Charter staff contacted municipal officials and members of its cable advisory councils to provide status reports on its restoration efforts. Charter staff also worked with its municipal contacts so as to obtain information on local conditions such as road closings and downed drop lines. Charter Responses to Interrogatories CATV-8 and CATV-18. It has been Charter's past practice to speak with the municipal officials in its service territory on an annual basis regarding emergency plans and protocols. However, Charter has stated that given the experiences learned from the two outage events, it is looking to make improvements to the communications with municipal officials. Tr. 3/19/12, pp. 40 and 41. Subsequent to the October Storm, Charter provided updated emergency contact information to its municipal officials. This information was also to be shared with all of the towns' public safety and emergency operations officials. Charter states that this information will now be sent to the municipal officials in their service territory on an annual basis. Charter Response to Interrogatory CSU-50. According to Charter, the municipal officials were very appreciative of the updated emergency information provided in the wake of the October Storm. Tr. 3/19/12, pp. 41 and 42.

On or around the fourth day following Tropical Storm Irene, Charter was permitted to have a staff person at the CL&P emergency operations center. Once this was in place, Charter was able to receive quicker updates on CL&P's cut-clear, make-safe efforts. Charter Response to Interrogatory CATV-8. Prior to this, Charter stated that there was some frustration in getting its staff embedded at CL&P, but since then relations with CL&P have improved. Tr. 3/19/12, pp. 42 and 43. For the October Storm, Charter staff was embedded at the CL&P emergency operations center immediately. Tr. 3/19/12, p. 42. Consequently, the coordination with CL&P improved over what was experienced during Tropical Storm Irene. Charter Response to Interrogatory CATV-18.

3. Cox Communications

a. Customer Communications

Cox maintains a New England call center that serves Connecticut customers. During both outage events, this call center was fully staffed and opened on 24 hours a day, 7 days per week basis. Along with its New England call center, Cox was also able to utilize its other national call centers, outsource partners, and alternative media to ensure communications for its customers. Cox Responses to Interrogatories CSU-48, CSU-52 and CSU-63. Utilizing this approach, during and after each of the two storms, Cox could rely on approximately 230 full-time equivalent (FTE) employees at the New England call center, an additional 200 FTE employees at its outsource partners, and an unquantifiable number of FTE employees nationally. Cox Response to Interrogatory CSU-49. Some of the national call center were located in Kansas, Oklahoma, San Diego and Virginia. Further, having calls answered in San Diego allowed Cox customer calls to be answered later in the evening. Tr. 3/19/12, p. 61. In anticipation of both storms, Cox implemented a number of emergency measures. These included offering unlimited overtime to its employees, securing accommodations for employees at local hotels, initiating its Business Continuity Plan that allowed Connecticut calls to be

answered throughout the country, reallocated call support from its Retention and Sales queues so those representatives could address storm-related calls and updated messaging on its IVR and social media sites to help keep customers informed. Cox Responses to Interrogatories CSU-48 and CSU-62. Along with these measures, during and after the 2011 Storms, Cox would hold three-time daily operational calls with its New England and national call centers. These operations calls were to proactively address call center responsiveness, ensuring that agents were providing the latest and most accurate information to customers, and reviewing call center performance metrics. Cox Responses to Interrogatories CSU-51 and CSU-62. According to Cox, given the extraordinary weather events and resulting disruption to commercial electrical power and broadband services, its customer-care personnel performed in an extremely capable and customer-focused manner. Cox Response to Interrogatory CSU-59. Cox stated that in response to the 2011 Storms, it assumed an all-hands mentality and brought to bear all of the resources that it could in order to respond to customer calls. Tr. 3/19/12, p. 62. The following is a sample of Cox's call center performance metrics during both outage events:

Date	ASA[46]	ACR%[47]	Total Calls[48]	Date	ASA	ACR%	Total Calls
8/27/11	54	4.5%	6,301	**10/30/11**	66	9.3%	14,280
8/28/11	162	19.7%	13,953	**10/31/11**	21	2.7%	15,086
8/29/11	42	5.8%	24,380	**11/01/11**	74	6.8%	16,082
8/30/11	31	3.6%	16,488	**11/02/11**	141	13.7%	20,920
8/31/11	50	4.1%	14,789	**11/03/11**	85	8.7%	20,735
9/01/11	118	9.1%	14,116	**11/04/11**	65	4.7%	18,892
9/02/11	152	13.4%	13,283	**11/05/11**	124	13.6%	16,966
9/03/11	127	12.1%	8,551	**11/06/11**	416	27.2%	17,714
9/04/11	54	5.3%	4,247	**11/07/11**	154	11.8%	23,443
9/05/11	140	19.0%	5,537	**11/08/11**	100	9.2%	19,197
9/06/11	142	13.5%	12,085	**11/09/11**	98	7.3%	17,787

Cox Responses to Interrogatories CSU-49 and CSU-60.

Cox provided copies of information and instructions that were distributed to call center staff to assist them with answering customer questions and complaints regarding service outages. Based on the documentation provided, Cox call center staff was given very meaningful information in order to assist its customers. Cox Responses to Interrogatories CSU-58 and CSU-69. However, Cox also indicated that it does not maintain a web page dedicated to storm or other emergency information. Cox states that in lieu of a web page, it encourages its customers to utilize email or social media such as Facebook. During and after both storms, Cox responded to over 12,000 emails from its New England customers. Cox Responses to Interrogatories CSU-54 and CSU-65. Cox utilized this approach with its customers knowing that call volume would be heavy. According to Cox, it has approximately 13,000 followers on Facebook and found that this type of alternative communication channel was very helpful as a means to

[46] Average Speed of Answer, in seconds.
[47] Abandoned Call Rate.
[48] Equals total calls offered to live agents plus total calls handled by IVR.

identify specific issues and provide information to customers during the storms. Tr. 3/19/12, p. 63. While the Authority encourages the uses of alternative modes of customer communications, maintaining storm or other emergency information on a web page is also vital to customers. Accordingly, Cox will be ordered to create a webpage that contains storm and other emergency information for its customers in Connecticut.

b. Municipal & Other Utility Communications

Cox participates quarterly with the Office of Statewide Emergency Telecommunications (OSET) calls as well as during major storm periods. Cox Responses to Interrogatories CATV-8 and CATV-18, Tr. 3/19/12, p. 54. Cox stated that the OSET calls were the primary method of updating municipalities about its emergency communications plan. Tr. 3/19/12, pp. 54 and 55. For Tropical Storm Irene, Cox provided to OSET leadership advance notification (orally and in writing) of on-going communications for municipal public safety officials. Cox Response to Interrogatory CATV-8. During the October Storm, Cox participated in every telephone conference call with the Governor's Unified Command system as well as provided updates to the Authority each day. Cox Response to Interrogatory CATV-18. During and after both outage events, Cox provided municipal officials with a separate escalation line directly into its Systems Operation Center to address any significant issue that requires immediate attention. Tr. 3/19/12, pp. 57 and 58. Noting Cox's quarterly participation in the OSET calls, Cox should also consider providing to municipal contacts a direct written notification of its emergency communications plans and associated information on an annual basis.

Cox claimed that coordination of its restoration efforts with CL&P were much better during the October Storm as compared to Tropical Storm Irene. Cox Response to Interrogatory CATV-18. According to Cox, it had personnel embedded at the CL&P emergency operations center at the beginning of the October Storm, but not during Tropical Storm Irene. The reason for this was that Tropical Storm Irene's effects were more significant in Rhode Island, while the October Storm was exactly the opposite. Tr. 3/19/12, pp. 55 and 56. Prior to these two outage events, Cox had never encountered a weather related outage or circumstance that would require personnel embedded at either of the two electric distribution companies but did recognize the value to its restoration process of having this option available. Tr. 3/19/12, pp. 56 and 57.

4. Comcast

a. Customer Communications

In anticipation of both storms, Comcast initiated its Emergency Response Plan to handle increased telephone volume. These contingencies included increased call center staffing, increased overtime availability and the procurement of hotel rooms and meals. Comcast Response to Interrogatory CSU-51; Tr. 3/19/12, p. 73. This plan also ensures that stand-by emergency generator power is ready and available should it be necessary. Comcast stated that its call center in Enfield remained operational even though the City of Enfield was without commercial power. Comcast Response to Interrogatory CSU-51. Along with its local call centers, Comcast also alerted other national and third-party call centers in the event additional resources were necessary.

At the highest point, Comcast directed calls to four additional call centers in Massachusetts and New Hampshire to address additional Connecticut call volume. Tr. 3/19/12, pp. 73 and 74. During and after the 2011 Storms Comcast call center staff was available on a 24 hours per day basis. Comcast Responses to Interrogatories CSU-52 and CSU-63. Comcast contends that given the nature of the storms and the number of customers that lost commercial power, its call centers performed well. Comcast Response to Interrogatory CSU-51. In addition, Comcast was very satisfied by the results of its pre-storm contingency plans and sees no reason to make any changes. Tr. 3/19/12, p. 75.

Comcast maintains a web page that includes information on general storm preparedness. During and after both storms, this web page received almost 75,000 hits from customers. Comcast customers also had the ability to login to their online account to view outage information. This process was also made available to mobile devices. Comcast Responses to Interrogatories CSU-54 and CSU-65.

b. Municipal & Other Utility Company Communications

According to Comcast, it has cultivated local relationships with all of the communities in its service territory. Each municipality is assigned a Comcast Government Relations manager who acts as a liaison and communications channel between Comcast and the towns it serves. A copy of Comcast's Emergency Response Plan was provided to all of its municipalities in June, 2011. This plan outlines Comcast's emergency response procedures and provided direct contact information to its Network Operations Center and specific Comcast representatives. During and after the storms, Comcast worked with its municipal officials to prioritize service restoration to key municipal buildings, emergency operations shelters, and shelters. If necessary, Comcast deployed generators to power its services at critical locations. Comcast stated that during the restoration process for both storms, it did not receive any complaints from municipal officials regarding its communications. Comcast Responses to Interrogatories CATV-8 and CATV-18. Along with its communications to municipal officials, Comcast also provided regular outreach to the 14 Advisory Councils in its service territory, participated in the Governor's daily conference calls, and maintained daily contact with the Authority regarding storm restoration efforts. Tr. 3/19/12, pp. 75 and 76. Starting in January 2012 and annually thereafter, Comcast has begun sending notices to its municipalities reminding them of the emergency contact information and procedures. Comcast Responses to Interrogatories CATV-8 and CATV-18.

Comcast, like other video service providers, was able to embed staff at the emergency operations centers of CL&P and UI. Comcast found that this cooperation between it and the electric distribution companies to be very beneficial to the restoration process. Similar to other video service providers, Comcast had never encountered a storm or emergency situation that required staff to be embedded at either CL&P's or UI's emergency operations centers. According to Comcast, once it was requested from CL&P or UI, the request to embed staff was quickly granted. Tr. 3/19/12, pp. 79 and 80.

5. AT&T U-Verse

a. Customer Communications

In order to respond to increased call volume that would be generated by the two outage events, AT&T Uverse utilized its national network of repair service call centers. According to AT&T U-Verse, call center data is tracked aggregately from the 22 states in which it operates. As a result of this, Connecticut-specific call center performance metrics were not available for review. AT&T U-Verse Responses to Interrogatories CSU-49 and CSU-60. During and after each of the two storms, AT&T U-Verse's repair service call centers were open 24 hours a day, 7 days per week basis. AT&T U-Verse Response to Interrogatories CSU-52 and CSU-63. AT&T U-Verse utilizes the same web page as AT&T Connecticut which includes a significant amount of information regarding storm and emergency preparedness for its customers. AT&T U-Verse Responses to Interrogatories CSU-54 and CSU-65. During and after the storms, AT&T U-Verse utilized its IVR system to advise customers of possible weather related problems, and to assure customers that its network teams were working to restore service. In addition, AT&T U-Verse placed a message on its IVR to advise customers that the repair service call centers were experiencing high call volumes. AT&T U-Verse Responses to Interrogatories CSU-48 and CSU-59.

b. Municipal & Other Utility Company Communications

AT&T U-Verse's communications with municipal officials, governmental officials and other utility companies was similar to the processes and procedures followed by AT&T Connecticut. AT&T U-Verse Responses to Interrogatories CATV-8 and CATV-18, Tr. 3/19/12, pp. 93-96. As discussed previously, the Authority ordered AT&T Connecticut to provide, on an annual basis, to the municipal officials in its service territory, correspondence that updates and describes all of the important information and telephone numbers regarding its External Affairs manager and all other storm or emergency related communications. To the extent that AT&T U-Verse utilizes the same policies and procedures as AT&T Connecticut for its communications with municipal officials, this order shall also extend to AT&T U-Verse as well.

6. Verizon FiOS (Video Product)

a. Customer Communications

Verizon's Fiber Solutions Call Center in Syracuse, New York is primarily responsible for customer calls from Connecticut. Tr. 3/19/12, p. 106. However, to address any increase in call volume and meet call center responsiveness goals, Verizon utilized call centers across the Verizon footprint to balance incoming calls. Verizon Responses to Interrogatories CSU-51 and CSU-62. During and after both storms, the Fiber Solutions Call Center normal business hours were Monday through Saturday, 7:00 a.m. to midnight. In case of after-hours or Sunday calls, Verizon's other call centers in its operating footprint were available to respond to the customer. Verizon Responses to Interrogatories CSU-52 and CSU-63. Verizon is unable to segregate Connecticut-specific data to determine the average speed of answer, but was able to provide the total number of calls received from Connecticut customers during and after both storms. Tr. 3/19/12, pp. 107 and 108. The following is a breakdown of calls received from Connecticut Verizon FiOS customers during and after the two storms:

Date	Total Calls	Date	Total Calls
8/27/11	5	**10/27/11**	8
8/28/11	37	**10/28/11**	4
8/29/11	19	**10/29/11**	11
8/30/11	15	**10/30/11**	6
8/31/11	16	**10/31/11**	10
9/01/11	8	**11/01/11**	9
9/02/11	10	**11/02/11**	7
9/03/11	3	**11/03/11**	8
9/04/11	5	**11/04/11**	8
9/05/11	7	**11/05/11**	11
9/06/11	9	**11/06/11**	2

Verizon Responses to Interrogatories CSU-49 and CSU-60.

Similar to Verizon telephony customers, there is no web page with Connecticut specific service information available to FiOS customers. Verizon Responses to Interrogatories CSU-54 and CSU-65. Also similar to Verizon telephony customers, its FiOS network was minimally impacted. According to Verizon, its network did not experience many outages and remained in a business as usual operational mode. Verizon Response to Interrogatory CSU-59. However, as previously discussed, while Verizon's Greenwich service territory might have been minimally impacted during both storms, this might not be the case in the next storm or emergency event. During events such as Tropical Storm Irene or the October Storm, the dissemination of accurate information to utility customers is as equally important to the answering of customer calls and the acquisition of information from customers. Accordingly, Verizon will be ordered create a webpage that contains storm and other emergency information for its customers in the Greenwich service territory

b. Municipal & Other Utility Company Communications

Verizon explained that it shared its emergency plans with its municipal contacts prior to events such as the two storms as well as periodically through the year. For Greenwich, these plans were discussed on a quarterly basis with municipal officials. Tr. 3/19/12, p. 104. Throughout Tropical Storm Irene, a Verizon Government Affairs manager was in daily contact with the Greenwich Town Administrator. During these calls, the Verizon staff member would provide a status report on restoration efforts. Verizon Response to Interrogatory CATV-8. For the October Storm, Verizon also established communications with Greenwich municipal officials to discuss any major issues. Verizon states that it received no complaints during or after the October Storm regarding its communications with municipal officials. Verizon Response to Interrogatory CATV-18. Verizon stated that it also participated daily in the State Telecom Task Force calls to provide restoration updates to state officials. Verizon Responses to Interrogatories CATV-8 and CATV-18. Id. Verizon also had a liaison process in place with its counterparts at CL&P to coordinate restoration activities and priorities. The liaison process did not involve a Verizon employee at CL&P's emergency operations center, but consisted of one-on-one communications between the Verizon

and CL&P operations staff. Verizon states that through this process, it is capable of coordinating its restoration work as efficiently as possible. Tr. 3/19/12, pp. 104 and 105.

7. Authority Analysis

The Authority finds that the Certificate Holders did a satisfactory job in maintaining communications with its various constituencies, devoting personnel and resources to attempt to ensure that municipal officials and customers were informed of their restoration efforts. The Certificate Holders also devoted adequate time and resources to notifying municipal officials regarding the problems associated with restoring video service in a safe and timely manner, given the severity of the 2011 Storms and the general requirement that electric power be restored first. The Authority did not detect any noteworthy shortcomings in the Certificate Holders' performance in communicating with its audiences during and after the 2011 Storms.

K. CABLE CERTIFICATE HOLDERS' COMPLIANCE WITH CREDIT AND REFUND OBLIGATION

Connecticut law requires that all video Certificate Holders in Connecticut provide credits or refunds to subscriber whose video service is interrupted for 24 or more consecutive hours (qualifying outage).[49] The Authority separately reviewed Connecticut Video Certificates Holders' compliance with the credit and refund obligation incurred as a result of damage to their video service-related facilities caused by the 2011 Storms.

The number of subscribers who experienced qualifying outages as a result of the August Storm varied widely by Certificate Holder, from 18 Verizon subscribers to 131,000 Cablevision subscribers. Only Cox was unable to provide an estimate of the number of subscribers who experienced a qualifying outage, indicating that loss of service was the result of commercial power and that an unknown number of Cox subscribers were able to use a generator or other device to power a television receiver, converter or DVR. Verizon, Cablevision and Cox Responses to Question No 1, September 21, 2011 Tropical Storm Irene Letter (Tropical Storm Irene Letter). The average duration of qualifying outages also varied considerably, from 40.5 hours for AT&T customers, to 6.5 days for MetroCast subscribers. Cox stated that it was unable to calculate the average duration of qualifying outages experienced by its subscribers because the cause of the outages was primarily the function of the loss of commercial power. AT&T, MetroCast and Cox Responses to Question No. 2, Tropical Storm Irene Letter.

Comcast stated that it had provided approximately $259,000 in credits and refunds to subscribers, with the other Certificate Holders providing refunds ranging from $104 to Verizon customers, to $150,000 to Charter subscribers. Certificate Holders Responses to Question No. 3, Tropical Storm Irene Letter. Generally, credits and refunds were provided to subscribers in the billing cycle after a customer reported having had experienced a qualifying outage. Certificate Holders Responses to Question 4, Tropical Storm Irene Letter.

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[49] For CVFA holders, the statutory obligation to provide credits and refunds for such video service interruptions is at Conn. Gen. Stat. Section 16-331l, and for CCFA holders, the obligation is at Conn. Gen. Stat. Section 16-331w.

Video service was restored to the Certificate Holders' separate service areas between September 2, 2011 for AT&T, to September 8, 2011, for all Comcast service areas. AT&T and Comcast Responses to Question No. 5, Tropical Storm Irene Letter. MetroCast stated that the video service in the vast majority of its service area had been restored by September 5, 2011, while Charter indicated that service had been restored by September 6, 2011, but much of its two areas had video service restored well before that date. MetroCast and Charter Responses to Question No. 5, Tropical Storm Irene Letter. The Certificate Holders stated that credits or refunds would be provided if subscribers notified them that they had experienced qualifying outages. Certificate Holders Responses to Question No. 6, Tropical Storm Irene Letter.

As was the case with Tropical Storm Irene, the number of subscribers who experienced qualifying outages as a result of the October Storm varied significantly by Certificate Holder, with Verizon indicating that only three subscribers experienced qualifying outages, and for Comcast 156,140. Verizon and Comcast Responses to Question No. 1, November 17, 2012 Authority Letter (October Storm Letter). Cox again indicated that it could not estimate the number of subscribers that experienced such service interruptions. The average duration of the length of qualifying outages also varied widely. For example, Charter stated that the average duration of qualifying outages in its two service areas ranged from "very limited" to "almost a week," and Verizon indicated that the average duration was 69 hours. Charter and Verizon Responses to Question No. 2, October Storm Letter. Cox stated that it was unable to calculate the average duration, but that most downed drops were repaired within 24 hours and all were repaired within 36 hours of being notified by a subscriber of a video service problem. Cox Response to Question No. 2, October Storm Letter.

The number of subscribers who experienced lengthy video outages determined, in part, the amount refunded by each Certificate Holder. Because the damage from the October Storm was least severe in the eastern part of the State, MetroCast provided $137.10 in credits and refunds, while Cox and Comcast provided $1,127,000 and $1,300,000 in credits and refunds, respectively, with Cox stating the amount refunded included credits and refunds for services other than video, such as its phone and Internet products. Cox and Comcast Responses to Question No. 3, October Storm Letter. As was the case with Irene-related credits and refunds, October Storm-related credits and refunds were normally issued in the billing cycle following a report by a subscriber that a qualifying outage had been experienced. Certificate Holders' Responses to Question No. 4, October Storm Letter.

MetroCast and TVC stated that they did not lose power for an extended period of time as a result of damage caused by the October Storm. MetroCast Response to Question 5, October Storm Letter; TVC Response to Interrogatory CA-14. The latest that video service in a separate service area was completely restored was November 15, 2011. Comcast and Charter Responses to Question No. 5, October Storm Letter. As was the case with Irene-related credits and refunds, the Certificate Holders stated that, for subscribers to be provided refunds and credits for having experienced qualifying outages, they had to notify their certificated video provider. Certificate Holders' Responses to Question No. 6, October Storm Letter.

The Authority notes that making direct comparisons among the Certificate Holders to their responses to the Tropical Storm Irene Letter and October Storm Letter is difficult for the following reasons. First, the number of subscribers served by different Certificate Holders varies widely. For example, Verizon provides video service to Greenwich only, while AT&T's service area is statewide and Comcast provides video service in 84 municipalities. Second, individual service areas vary with respect to topography and the amount of video-related plant and facilities affected by the two storms. Third, although both storms caused some damage throughout the entire state, the damage was not distributed evenly. Finally, electric power to the state was restored over extended periods of time after the 2011 Storms. Therefore, some video service areas, or parts thereof, were restored more quickly than others, which affected the duration of the extended service interruptions and the amounts of the required credits and refunds.

The Authority finds that the Certificate Holders were in substantial compliance with the credit and refund obligations of state law for qualifying outages that subscribers experienced as a result of both storms.[50] The Department reminds all Certificate Holders that the only exception to the requirement that they provide credits or refunds to subscribers who experience qualifying outages is if the video service interruption was caused by the subscriber. The loss of commercial power is not justification for the Certificate Holders to decline or refuse to provide the required credits and refunds to subscribers experiencing qualifying video service outages.

An impediment to ensuring that all subscribers who are entitled to credits or refunds is that subscribers must first notify their certificated video provider that they have experienced a qualifying outage. After the notification, Certificate Holders provide the credit or refund, normally applying it to the billing cycle after the subscriber provided the notification, with Comcast and MetroCast first verifying that the outage had occurred. Certificate Holders do not always automatically know which of their subscribers experience qualifying outages and do not generally provide credits or refunds unless subscribers take the first step and notify them.

Because subscribers must take the first step to receive a credit or refund to which they are entitled, it is incumbent upon all Certificate Holders to be in compliance with the statutory requirement that at the time of initial subscription and annually thereafter, they provide subscribers with, among other information, a description of their credit policies.[51] The description must include a prominent statement saying that, in the event of a video service outage lasting 24 or more consecutive hours, the affected subscriber must notify the company to receive a credit or refund. The notice must also include a statement regarding how many days after a qualifying outage a subscriber has to notify his or her video provider that such an interruption has been experienced.

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[50] The Authority notes that TVC initially indicated that it would not issue credits and refunds to subscribers whose video service was interrupted for 24 or more consecutive hours as a result of damage caused by Tropical Storm Irene. TVC Response to Question No. 3, Tropical Storm Irene Letter. By its December 11, 2011 response to the Authority's November 16, 2011 letter, TVC indicated that it would provide credits and refunds, as required by statute.

[51] For CVFA holders, the requirement is at Conn. Gen. Stat. Section 16-331j, and for CCFA holders, the requirement is at Conn. Gen. Stat. Section 16-331u.

All Certificate Holders will be required to file with the Authority, a copy of the informational notices required by statute annually by July 1, beginning in 2013.

L. GAS COMPANIES

1. Description of the Storms, Outages and Damage to Natural Gas Company Infrastructure.

a. Tropical Storm Irene

In preparation for Tropical Storm Irene, Southern Connecticut Gas Company (SCG), Connecticut Natural Gas Company (CNG), and Yankee Gas Services Company (Yankee or YGS; collectively, Natural Gas Companies) began discussions and meetings days prior to the storm in order to initiate precautionary measures. The Natural Gas Companies were in communication with the Authority's Gas Pipeline Safety Unit (GPSU) as Tropical Storm Irene approached. The Natural Gas Companies kept the GPSU informed of their identified issues and their associated response throughout Storm Irene. Natural Gas Companies Responses to Interrogatory GPS-001.

YGS Tropical Storm Irene preparation consisted of the following steps:

- Initiated system-wide conference calls several days prior to the storm to initiate and track precautionary measures being taken;
- Yankee's director of field operations participated in CL&P's storm preparation conference calls;
- Filled vehicles and equipment with fuel prior to the storm;
- Moved vehicles and equipment out of areas prone to flooding;
- Stored or secured equipment stored outside;
- Placed additional employees on-call;
- In some instances, provided on-call employees with hotel accommodations within the service territory to facilitate timely response to emergencies;
- Rented satellite phones for Pressure Management employees;
- Had service mechanics bring home company vehicles to ensure timely response to emergencies; and
- Staffed an ad hoc emergency operations center in Dispatch with Operations, Safety, management and support staff throughout the duration of the storm.

YGS Response to Interrogatory GPS-001.

CNG and SCG Storm Irene preparation consisted of the following steps:

- Gassing up all vehicles – service vans, crew trucks, fitter wagons, poor pressure truck, and backhoes at the main operations facility and satellite stations;
- SCG established a satellite location at its Trumbull LP facility;
- Prepared all pumps – check oil, fill with gas, gaskets in place, suction and discharge hoses;
- Prepared all generators – check oil, fill with gas, ground fault interrupters (GFIs), extension cords;

- Load tested all gate station emergency generators;
- Put additional technicians on-call with take home vehicles;
- Staffed Backup Gas Control Center;
- Added additional staffing at liquefied natural gas (LNG) plants;
- Filled storage bins to capacity – sand, stone, Wespro;
- Sand bags – how many in stock;
- Batteries – flashlights;
- Identified regulators with water problems;
- Pumped regulator vaults as necessary;
- Prepared drip list – ensure pumps are tested and ready;
- Inventory Hazardous-waste drums;
- Back filled all jobs in progress if possible and remove plates from the roadway;
- Reviewed Greenwich needs – equipment, personnel;
- Secured facility – pipe storage, loose materials stored outdoors, equipment;
- Backup communications – portables radios, cell phones, landlines;
- Personnel requirements;
- Procurement card assignments; and
- Implemented calling tree (order of escalation of calls and validation of all storm personnel phone numbers).

CNG and SCG Responses to Interrogatory GPS-001.

The natural gas systems in Connecticut fared very well before, during and after Tropical Storm Irene. Significant pre-planning on the part of the Natural Gas Companies, coupled with the fact that the majority of the natural gas infrastructure is buried, attributed to minimizing potential issues such as outages.

Tropical Storm Irene resulted in a minimal number of gas outages. YGS had 428 customers whose natural gas service was interrupted. This is approximately 0.3% of YGS customers. Of those interruptions, 363 were due to a down electric line that damaged YGS gas distribution pipe (gas main) in Oxford, Connecticut. YGS customers were restored within four days. YGS Response to Interrogatory GPS-002. CNG had 252 customers whose service was turned off, mostly due to basement flooding in the Greenwich area. This is approximately 0.2% of CNG's customers. The Greenwich gas customers were restored within 24 hours. CNG did not experience any customer outages in the greater Hartford area. CNG Responses to Interrogatory GPS-001 and GPS-002. SCG experienced interruption of gas service to 11 customers, mostly due to basement flooding. This is approximately 0.008% of SCG's customers. SCG customers' service was restored within four days. SCG Responses to Interrogatory GPS-002 and GPS-003. Most customers were restored with gas service as soon as the water levels receded and the customer's gas systems were deemed safe for restoration.

b. October Storm

YGS is aware that snowstorms do not typically cause significant operational issues for natural gas companies. Accordingly, in preparation for the October Storm, YGS took normal precautionary measures for adverse weather conditions such as

fueling vehicles and sharing a winter storm safety message with all employees. YGS pre-staged portable generators at the gate stations that were not equipped with automatic emergency generators in preparation for possible power outages. YGS Response to Interrogatory GPS-013. CNG and SCG October Storm preparations consisted of the same steps as those listed above for Tropical Storm Irene. CNG and SCG Responses to Interrogatory GPS-013. The Natural Gas Companies were in communication with the Authority's GPSU as the October Storm approached and kept the GPSU informed of their identified issues and their associated responses throughout the storms.

The October Storm caused only one gas outage. YGS had one customer whose gas service was interrupted due to minor flooding in Suffield, Connecticut. The customer's gas service was restored in one day.

2. Emergency Response and Outage Restoration

The Natural Gas Companies follow their Emergency Plans during an emergency event. The Emergency Plans provide written procedures to be followed during an event that requires immediate attention. The Emergency Plans procedures reduce the hazards to the public and minimizes the interruption of gas service to customers.

The Natural Gas Companies have not experienced an outage of the magnitude that the electric utility companies experienced during the 2011 Storms. The Natural Gas Companies' Emergency Plans do not adequately address the time it would take to restore gas customers after a large scale natural gas outage. The process of isolating each gas customer, purging the gas lines back in service, and then relighting each individual customer is extremely time consuming and should be reflected in each of the Natural Gas Companies' Emergency Plans. Data examined from a 1989 outage of about 7,500 Torrington customers showed that one mechanic could isolate one customer per hour. The restoration process equated to about one customer restored per two hours per mechanic. YGS Late Filed Exhibit No. 036.

Pursuant to Public Act 12-148, the Natural Gas Companies are required to submit copies of their updated Emergency Plans by July 1, 2012, to the Authority. Among other things, these updated Emergency Plans must include provisions for the Natural Gas Companies to respond to service outages affecting more than 10%, 30%, 50% and 70% of their customers. The Authority will review the Natural Gas Companies' Emergency Plans and address any concerns in Docket 12-06-11.

Throughout the 2011 Storms, many fueling stations were without electrical power which prevented them from being able to dispense fuel to vehicles. The Natural Gas Companies were affected by lack of available fuel in certain areas of the state during the October Storm. YGS stated that it had some difficulties obtaining gasoline in its East Windsor work area. Tr. 3/26/12, p. 592. CNG stated that during the October Storm it had some challenges obtaining gasoline in the Hartford area. Tr. 3/26/12, p. 596. The Natural Gas Companies did not have issues with providing diesel fuel to their equipment. The dispensing of diesel fuel is allowed to be performed through a process called "wet hosing." Wet hosing is a process of fueling vehicles from tank trucks, where the tank trucks are driven to the yards or sites where the vehicles to be fueled are kept

when they are not in use. This allowed the Natural Gas Companies to have their diesel equipment refueled on-site at their work center locations. Natural Gas Companies Responses to Interrogatory GPS-028. The Natural Gas Companies are continuing to evaluate additional locations to utilize temporary above ground fuel tanks for gasoline and options for fueling vehicles at municipally owned fueling stations within their service territories that have back up power supply. Id. The Authority will continue to monitor the Natural Gas Companies' progress on this issue through an associated order.

3. Communication/Interfacing with Customers, Utilities, and Municipalities

The Natural Gas Companies maintain communication with the GPSU in the event of an emergency or a gas incident. If there were a major incident the Natural Gas Companies are required to notify the GPSU of the event. YGS Response to Interrogatory GPS-009. During the 2011 Storms, the Natural Gas Companies were in contact with the GPSU on a daily basis. The Natural Gas Companies updated the GPSU on the status of outages and their restoration process along with any other issues with regard to maintaining gas service to their customers.

The Natural Gas Companies did not receive any complaints from municipal officials regarding its communications during and after the 2011 Storms. Natural Gas Companies Responses to Interrogatory GPS-009.

4. External Assistance

The Natural Gas Companies maintain a mutual aid agreement with the Northeast Gas Association (NGA), the American Gas Association (AGA), and the Southern Gas Association (SGA). In the event of a gas outage requiring personnel from the Northeast region, the Natural Gas Companies would have the ability to request assistance through the NGA Mutual Assistance Plan. The NGA Mutual Assistance Plan provides details as to what equipment can be provided and the number of personnel that would be available to assist. The NGA would coordinate the personnel, supplies and/or equipment from the member companies. The responsiveness of mutual assistance in nearby regions is a great benefit of the NGA. If additional personnel are needed from beyond the geographical reach of the northeast, a request would go to the SGA and/or the AGA. Natural Gas Companies Responses to Interrogatory GPS-027.

5. Loss of Electrical Power

The Natural Gas Companies maintain communications with their gas distribution systems through a communication system called Supervisory Control and Data Acquisition (SCADA). SCADA is a computer-based system or systems that collects and displays information about a pipeline facility and may have the ability to send commands back to the pipeline facility. The Natural Gas Companies' SCADA systems require electrical power and telecommunications capability in order to maintain monitoring and control capability of the gas distribution systems. The Natural Gas Companies lost electrical service to some of their gate stations and therefore lost communications to those sites. Many of the gate stations have automatic generators. Those that do not have automatic generators were supplied with portable generators.

Many remotely monitored data points were without power, so the SCADA systems were not fully functional; however, in most areas the remaining functioning data points provided enough information for the Natural Gas Companies to adequately monitor their respective system's integrity. In areas with insufficient data point information, the Natural Gas Companies dispatched personnel to monitor the systems until communications were restored. Natural Gas Companies Responses to Interrogatories GPS-005 and GPS-017. The use of fixed backup generators and portable generators met the needs of the Natural Gas Companies in order to maintain gas service and adequate monitoring of the gas distribution systems. Tr. 3/26/12, pp. 586 and 587.

6. Company Proposed Preparation and Restoration Improvement Initiatives

The Natural Gas Companies' facilities performed extremely well during the 2011 Storms. There was a minimal number of gas outages experienced. Despite this, the Natural Gas Companies conducted preparedness meetings and post-2011 Storm meetings to assess lessons learned. Lessons learned for SCG and CNG were to have multiple sources of communication and to have committed fuel suppliers for backup generators. SCG and CNG Response to Interrogatory GPS-010. In addition, SCG and CNG will be performing emergency drills in 2012 with limited communication ability and limited vehicle fueling options incorporated into the drill. SCG and CNG Response to Interrogatory GPS-022. YGS created a list of action items stemming from the 2011 Storms debriefing and lessons learned. YGS Response to Interrogatory GPS-022. The Authority expects the Natural Gas Companies to thoroughly review each of their lessons learned and to enact changes as necessary. Through associated orders, the Authority will therefore require the submission of a report on the status of each of the lessons learned and action items discussed in the Natural Gas Companies Responses to Interrogatories GPS-010 and GPS-022. The report should be a brief discussion as to what was done to close the action item or what is being done to address the concern.

M. WATER COMPANIES

The Authority regulates nine Class A water companies (Companies)[52] and they all participated in this case with the submission of interrogatory responses and providing testimony in the hearing held on March 26, 2012.

As a whole, the Companies performed very well in terms of their ability to limit service interruptions in number and duration. United and Heritage were the only two companies to experience outages. The outages represent six tenths of one percent of the total customer base of the nine companies. While there were some problems that could have been handled differently, their overall ability to provide service following the 2011 Storms can be attributed primarily to the effectiveness of the Standby Power Regulations for Water Companies (Regulations) Sections 16-11-99 through 16-11-99d of the Conn. Agencies Regs. The overwhelming cause of service interruptions was a

[52] Aquarion Water Company of Connecticut (Aquarion), Avon Water Company (Avon), Connecticut Water Company (CWC), Hazardville Water Company (Hazardville), Heritage Village Water Company (Heritage), Jewett City Water Company (Jewett City), Torrington Water Company (Torrington), United Water Connecticut (United), Valley Water Systems Inc. (Valley)

direct or indirect result of the loss of commercial power from the EDCs. The Connecticut Water Company (CWC) summarized what worked for most of the companies with the statement, "the advance preparation, emergency response planning, availability of standby power, interconnections, operational flexibility, considerable internal coordination, and sharing of staff and resources within the company made this possible." CWC Response to Interrogatory WA-1.

1. Regulations of Connecticut State Agencies Section 16-11-99

a. Components of the Regulations

The following are excerpts from the Regulations that describe the key components that had a direct impact on the water companies' ability to provide continuous supplies of water during and immediately following the 2011 Storms.

- Each company shall provide permanently installed gasoline, propane-fueled, natural gas or oil-fired standby power equipment at such facility locations as are necessary to provide sufficient standby power capacity.

- "Sufficient Standby Power Capacity" shall mean the ability of a company to supply 100% of the average daily demand of its system, or of each division if the company's system is comprised of multiple divisions.

- "Average Daily Demand" (ADD) shall mean the normal water usage of the system as determined for the most representative twenty-four (24) hour period of record.

- Portable generators with sufficient standby power capacity may be considered acceptable as an alternative to an on-site generator. Such portable generators may be used only if there are suitable controls, connections and manual or automatic switches in the pumphouse.

- Portable generators shall be owned or leased at all times by the company, by a subsidiary of the company, by the parent of the company, or by a corporation with the same parent as the company.

- Portable generators must be ready to provide power within four hours of an electrical outage, unless the company has sufficient atmospheric storage, for up to twenty-four hours without electric power, but in no event shall standby power not be provided more than twenty-four hours after the occurrence of an electrical outage.

- Sufficient fuel storage capacity shall be provided for the generation of

standby power by permanently installed standby power equipment for at least twenty-four (24) hours, and by portable generators for at least eight (8) hours.

- Each company shall test standby power equipment.

- Each company shall perform maintenance of its standby power equipment

2. Storm Preparation

Aquarion, CWC, Torrington, and Jewett City conducted pre-storm inspections of key components of their systems such as river crossings, dams and valve locations. Tr. 3/26/12, pp. 678-681. While larger facilities can have sufficient fuel storage for five to seven days of continuous operation, the 2011 Storms' unprecedented impact on commercial power made refueling in nearly all instances a necessity. Accessibility was just as hard for the fuel companies and the water companies had to monitor their fuel resources to be sure deliveries were made. Id., p. 684. Some water company staff was responsible to deliver gasoline in cans and there were cases of company personnel needing to travel great distances to find gas. Id., pp. 713 and 714.

CWC testified that its ability to have qualified staff on hand to ensure that its facilities were monitored and to notify customers, was critical in its ability to deliver water. Id., p. 715. The CWC witness also suggested that operational flexibility was key to meeting supply requirements. Such flexibility was in the areas of customary and planned operational changes and staffing.

3. Communications

a. Inability to Communicate with the EDCs

Every company experienced difficulty communicating with its EDC. Id., pp. 714-719. There was only one instance, testified to by Aquarion, that had satisfactory results. Id., p. 660. In that instance, UI responded to a location in Stratford in a timely fashion to de-energize a line that allowed access for a generator to be refueled. There was no other favorable report made. Any level of a working relationship between the companies and the EDCs prior to the 2011 Storms was not apparent at the time of the 2011 Storms. Most of the Companies testified to having had some level of a historic working relationship with a representative of the EDC in any given region of its service territory. Id., pp. 714-719. The general consensus was that all the established working relationships developed over, in some instances, years, were for naught. Id., pp. 716-720. CWC reported a lessons learned exercise with CL&P, post Tropical Storm Irene, that was expected to provide for a free flow of information between companies. Following the October Storm, that free flow of information did not work, as the information was jumbled and not always accurate. Id., p. 716. The companies testified that they prefer timely and accurate information which they could then rely on and plan around rather than the misinformation and inconsistent reporting that occurred following the 2011 Storms. Id., p. 736.

The following excerpts from the transcript illustrate the problems the companies experienced in trying to communicate with CL&P:

> (Heritage) "So we would just like to talk to someone so that they know that, number one, they know that we have a problem; number two, we would want them to know that we're one customer, but by not taking care of us, you've got 600 customers that are going to be without water very shortly if you don't something, that type of thing. And unfortunately, we don't get to talk to anyone about it. And the information when we did talk to someone, the information we got was totally bogus. Yeah, we'll be there by the end of the day, and the end of the day came and the next day came and the next day came. It's like, you know, let us know exactly what's going on so we can do what we have to do accordingly. Don't give us bogus information that doesn't help our situation. So it was very frustrating." Tr. 3/26/12, pp. 717 and 718.
>
> (Hazardville/Jewett City) "We usually have a liaison or a contact, but that seems to always change whenever you need it, that number doesn't work or the contact is not there or it's a different person." Tr. 3/26/12, p. 718.
>
> (United) "We contacted CL&P by phone numerous times. We went to their locations on numerous times to try to get answers, and we were unsuccessful. I felt that we were getting pushed aside. We just wanted to know what they were doing, because we could work together. We weren't even successful in that." Tr. 3/26/12, p. 736.

Based on the evidence in the record, and the difficulty the water companies experienced in trying to obtain accurate and needed communication from CL&P during the outages, the Authority determines that CL&P's communication with these service providers was less than suitable and adequate.

b. Wireless Communications

It was nearly unanimous that cellular phones were the primary means of communication within the companies. Id., pp. 97 and 98. Valley primarily used 2-way radio and others had pagers for back-up purposes. Id., p. 95. There were no complaints with Verizon and few with Sprint. However, some of the companies complained about AT&T Mobility. Id., pp. 696 and 697. The inability to communicate by cell phone while in remote locations made it necessary for company personnel to meet at strategic locations to discuss recovery operations. United Response to Interrogatory EN-11.

4. Company Deficiencies and areas of Concern for the Authority

a. Insufficient Generation and Appurtenances

Avon and United were in a situation where their usual number of portable generators was insufficient, even when rotation of the units between facilities was

effective in prior outage situations. Id., p. 652. Access to the generators was hindered due to down lines and/or trees making relocation of them nearly impossible. The magnitude of the 2011 Storms also increased the demand for generation units where they would have normally been available through affiliated companies. Some companies learned a lesson from Tropical Storm Irene and by the time of the October Storm, they were prepared. United was generally harder hit by the October Storm, and coupled with not having made changes as a result of Tropical Storm Irene, had a very difficult time with their operations. Additionally, provisions of appurtenances, such as not having a receptacle and a run-through switch at a particular location made it difficult to use a generator. Id., pp. 656, 658. The Authority finds this to be a result of lack of planning. The Regulations call for proper controls and connections to be in place prior to a power outage event.

United believes that it could have at its disposal sufficient portable generation to supply the needs of most but not all, of its satellite operations. Id., p. 52. This would have worked historically, as the sharing of generation was for shorter durations overall and access was not nearly as difficult. The Regulations require companies to supply the Average Daily Demand to all facilities all of the time. Following the 2011 Storms, United purchased two new generators, conducted a lessons-learned exercise and planned a mock drill. Id., p. 724.

b. Use of Outside Electrical Contractor

Hazardville/Jewett City hired an outside electrical company to identify downed energized lines in its service area. Those found to be de-energized (at that moment), were moved to allow access to its facilities. Id., p. 14. The companies should be cautioned that although a line is de-energized at one moment, does not necessarily mean it will forever be de-energized, even as it is lying on the ground. There are many reasons why and how a line can be energized, even when it was found to be de-energized moments earlier.

c. Personnel Safety - Dams

CWC testified that staff was monitoring the dams throughout the 2011 Storm and it was a problem having staff on the dams during the storm." Id., p. 80. The Authority finds this practice to be dangerous. The Authority is aware that Dam Emergency Operations Plans identify the steps that must be taken to monitor these structures. The Companies should make safety of personnel a priority and should consider alternatives to on-site staffing that streaming video and wireless technologies can bring.

5. Planning for the future

a. Permanent Versus Portable Generation

With some of the difficulties encountered by the companies with portable generation equipment availability and transport, permanent generation should be considered for more facilities. Each company should make an assessment of the possibility that the company, and its customers, would benefit from permanent versus portable generation at any given site. There were instances where a portable generator

was needed, while a permanent unit was down for maintenance or repair. Id., p. 666. This is a rare occurrence; however, Companies should be thinking in terms of redundancy for the future.

b. SCADA and Remote Operations

The continuous communication with remote facilities through SCADA was critical to effective operations. Id., pp. 665-667. The system provides, for example, signals from pump stations and wells for startup, shut down, low and high level alarms. The loss of land-line connections to those facilities emphasizes the importance of continuous communication and many companies are now considering radio controlled communications for the future. The loss of remote communications required the scheduled visits by onsite personnel in some instances around the clock. This also required companies to revert back to automatic controls. Id., p. 70.

Typically SCADA uses telephone lines for communication. With the significant numbers of down lines, communications to facilities via SCADA was lost that subsequently required manned operations, which further tasked the busy manpower. Id., pp. 672 and 673. Those companies with radio controlled SCADA retained their effectiveness and all companies using SCADA should consider radio control communication for the future. Id., p. 24.

c. Fuel Availability and Proposed Law

There is great interest in a fuel availability law. It was strongly recommended by the Companies that legislation be established to prioritize local supplies of gasoline to public utility companies, among other similarly impacted entities. Id., pp. 713 and 714. The companies are encouraged to propose legislation addressing fuel availability during the next legislative session. The Companies should also evaluate additional options such as utilizing temporary above ground fuel tanks for gasoline and fueling their vehicles at municipally owned fueling stations within their service territories that have back up power supply.

IV. CONCLUSION AND ORDERS

A. CONCLUSION

The Authority concludes that CL&P's performance in the aftermath of the 2011 Storms was deficient and inadequate in the areas of outage and service restoration preparation of personnel, support of its municipal liaison program, development and communication of restoration times to customers, and overall communication to customers, other service providers and municipalities, as to warrant regulatory sanction. The Authority also concludes that because of CL&P's failure to obtain adequate assistance in advance of the October Storm, its response to that storm was deficient. The Authority establishes a rebuttable presumption that CL&P should be imposed an appropriate reduction to its allowed return on equity in its next ratemaking proceeding as a penalty for poor management performance and to provide incentives for improvement. In addition, in conformance with the Settlement Agreement between NU and NSTAR, the Authority retains further jurisdictional approval for recovery of an

appropriate level of 2011 storm costs at the time CL&P seeks recovery of any such costs. Similarly, the Authority will exercise its regulatory oversight for the recovery of 2011 storm-related costs at the time UI seeks the recovery of those costs in rates.

In considering appropriate reduction to allowed returns on equity in forthcoming ratemaking proceedings and in exercising its jurisdictional approval for recovery of appropriate 2011 storm costs, the Authority will consider and weigh the extent to which CL&P has recognized its shortcomings and taken concrete and measurable steps to embrace the need for aggressive, extensive restructuring of both its attitude toward storm management and establishment of new practices for execution of future storm response.

Through the Orders in this Decision, the Authority requires various enhancements to the restorative capabilities of the utility companies in order that they can better face major outage events. The Authority requires CL&P to develop a heightened state of readiness, and document that such a state exists, including assessment of its own line workers, line workers from sister companies, contractors, a statement of the mutual aid assistance organizations to which it belongs, and the resources likely available from these organizations. The Authority also adopts many of Liberty's findings and recommendations regarding preparation, restoration, and communication.

While the Authority determined that telecommunications services, cable, television, gas companies, and water companies of Connecticut were less affected by the 2011 Storms than the electric industry, the PURA makes recommendations in this Decision and creates Orders to improve service reliability in these industries for future events.

B. ORDERS

For the following Orders, submit an original and two copies of the required documentation to the Executive Secretary, Public Utilities Regulatory Authority, Ten Franklin Square, New Britain, CT 06051, and file an electronic version through the Authority's website at www.ct.gov/pura. Submissions filed in compliance with Authority Orders must be identified by all three of the following: Docket Number, Title and Order Number.

1. CL&P shall track recommendations resulting from all reviews of the 2011 storms, including this proceeding, the Witt Associates reports, the Davies Consulting report and the Liberty Report. CL&P shall either implement each recommendation or shall provide clear justification for not implementing a recommendation, explaining why it is not being implemented. CL&P shall provide an interim report on the status of its implementation of these recommendations to the Authority by September 30, 2012, and a final report to the Authority by December 28, 2012.

2. Not later than September 30, 2012, CL&P shall submit a report on the effectiveness of enhanced tree trimming on circuit reliability performance. The report shall be submitted in Docket No. 12-06-09.

3. CL&P shall formulate a plan to assure that real-time damage assessment and outage restoration data are available from field crews, including crews from mutual assistance and line crews, and shall take action to ensure that field crews utilize such technologies. CL&P shall submit its report on the actions it has taken and plans to take in its submittals in Order No. 1.

4. CL&P shall formulate a plan to establish a heightened state of readiness in anticipation of a major storm. Not later than July 1 of each year, CL&P shall report on its plan to establish the lineworker resources that would be available to it in anticipation of a major storm during the upcoming July 1 through March 31 time period, including its own lineworkers, lineworkers from sister companies and contractors. In this report, CL&P shall both state the lineworker resources likely available during a storm primarily affecting only Connecticut and a regionwide storm. CL&P shall also state the mutual assistance organizations to which it belongs, and state the likely resources those organizations are capable to deliver to CL&P to assist in storm recovery. CL&P shall place primary emphasis on demonstrating a lineworker workforce that would likely be available to CL&P during the first 48 hours of a regional event, so that it is able to establish a heightened state of readiness. Due to the timing of this Decision, the first report is due no later than October 1, 2012.

5. Not later than August 8, 2012, CL&P shall implement a maintenance tree trimming program based on a four-year trim cycle, and shall present the Authority for its plans to do so in Docket No. 12-06-09.

6. CL&P shall participate in discussions with mutual assistance groups and the Edison Electric Institute on ways to improve the mutual assistance process. CL&P shall provide reports on the status of these initiatives in its reporting to the Authority pursuant to Order No. 1 above.

7. No later than October 31, 2012, AT&T shall investigate and develop a method of estimating outage information other than the reliance on customer out-of-service calls. AT&T shall also develop a method to make the outage and restoration information available to its customers.

8. No later than September 28, 2012, AT&T shall confirm in writing to the Authority that it will provide to all of the municipalities it serves, annual correspondence regarding its External Affairs manager, all emergency contact information, and any other storm or emergency communication information.

9. No later than October 31, 2012, Verizon shall develop a webpage that can be accessed by its Connecticut customers that contain storm and other emergency information.

10. No later than October 31, 2012, Cablevision shall develop a webpage that can be accessed by its Connecticut customers that contain storm and other emergency information.

11. No later than October 31, 2012, Charter shall develop a webpage that can be accessed by its Connecticut customers that contain storm and other emergency information.

12. No later than October 31, 2012, Cox shall develop a webpage that can be accessed by its Connecticut customers that contain storm and other emergency information.

13. No later than September 28, 2012, and annually thereafter, AT&T U-Verse shall provide notification to all of the municipalities it serves, of its External Affairs manager, all company emergency contact information, and any other storm or emergency communication information as necessary.

14. No later than October 31, 2012, Verizon FiOS shall develop a webpage that can be accessed by its Connecticut customers that contain storm and other emergency information.

15. UI shall track all recommendations from all reviews of the 2011 storms, including from this proceeding and the Liberty Report. UI shall either implement each recommendation or shall provide clear justification for not implementing a recommendation, explaining why it is not being implemented. UI shall provide an interim report on the status of its implementation of these recommendations to the Authority by September 30, 2012, and a final report to the Authority by December 28, 2012.

16. UI shall participate in discussions with mutual assistance groups and the Edison Electric Institute on ways to improve the mutual assistance process. UI shall provide reports on the status of these initiatives in its reporting to the Authority pursuant to Order No. 15 above.

17. No later than October 31, 2012, UI shall report of the feasibility of establishing a method to provide customer's name and telephone numbers to emergency personnel if that customer believes he or she requires assistance during emergency situations.

18. No later than October 31, 2012, CL&P shall investigate the feasibility of including to its on-line medical certification form of current health status additional contact information such as a secondary telephone number and e-mail address, if available.

19. No later than October 31, 2012, SCG and CNG shall submit to the Authority a revised medical certification form of current health status that includes a primary and secondary telephone number, as well as an e-mail address, if available.

20. No later than July 1, 2013, and annually thereafter by July 1, each Video Certificate Holder shall file a copy of the notices required pursuant to Conn. Gen. Stat. §§ 16-331j and 16-331u.

21. The Natural Gas Companies shall formulate a plan to obtain and dispense gasoline and diesel fuel for vehicles and equipment when events occur like the 2011 storms that limit the ability to maintain vehicles and equipment fueled. This fueling plan shall be incorporated into the Natural Gas Companies' Emergency Plans. The fueling plan shall be submitted to the Authority by October 1, 2012.

22. YGS shall submit a report discussing the status of each of the action items listed in YGS' response to Interrogatory GPS-022. The report shall discuss what was done to close the action item or what is being done to address the concern. YGS shall include any additional lessons learned and its associated action items that were considered after review of the reports associated with this Docket, including but not limited to the Witt Report, Davies Report and Liberty Report. The report shall be submitted to the Authority by October 1, 2012.

23. CNG and SCG shall submit a report discussing the status of the lessons learned items from the CNG and SCG response to Interrogatory GPS-022. CNG and SCG shall include any additional lessons learned and their associated action items that were considered after review of the reports associated with this Docket, including but not limited to the Witt Report, Davies Report and Liberty Report. The report shall be submitted to the Authority by October 1, 2012.

24. No later than January 1 of each year beginning January 1, 2013, AT&T and Verizon shall conduct annual live emergency drills for their respective Connecticut operations and report the outcome of the exercises to the Authority.

25. No later than January 1 of each year beginning January 1, 2013, AT&T and Verizon shall file their annual utility pole maintenance practices similar to the EDCs. The utility pole inspection plans should include, but not be limited to, the inspection interval, number of poles inspected, replaced and associated trained personnel involved in the inspection and a detailed description of the inspection techniques that will be applied.

26. No later than November 15, 2012, the Working Group shall submit a status report to the Authority on resolved and outstanding utility pole administration issues. No later than January 31, 2013, the Working Group shall develop and recommend to the Authority a consensus pole administration structure to facilitate utility pole attachments. The above reports should also be submitted in Docket No. 11-03-07.

Attachment A

Ctrl + Click to access Attachment A, Liberty Report

http://www.dpuc.state.ct.us/Electric.nsf/22d33958d7bd318385256b72006c27ec/b7d58f422220d29c85257a4c00553d1e?OpenDocument

The Connecticut Department of Energy and Environmental Protection is an Affirmative Action/Equal Opportunity Employer that is committed to requirements of the Americans with Disabilities Act. Any person with a disability who may need information in an alternative format may contact the agency's ADA Coordinator at 860-424-3194, or at deep.hrmed@ct.gov. Any person with limited proficiency in English, who may need information in another language, may contact the agency's Title VI Coordinator at 860-424-3035, or at deep.aaoffice@ct.gov. Any person with a hearing impairment may call the State of Connecticut relay number – 711. Discrimination complaints may be filed with DEEP's Title VI Coordinator. Requests for accommodations must be made at least two weeks prior to any agency hearing, program or event.

DOCKET NO. 11-09-09 PURA INVESTIGATION OF PUBLIC SERVICE COMPANIES' RESPONSE TO 2011 STORMS

This Decision is adopted by the following Directors:

John W. Betkoski, III

Arthur H. House

CERTIFICATE OF SERVICE

The foregoing is a true and correct copy of the Decision issued by the Public Utilities Regulatory Authority, State of Connecticut, and was forwarded by Certified Mail to all parties of record in this proceeding on the date indicated.

K. Santopietro

August 1, 2012

Kimberley J. Santopietro
Executive Secretary
Department of Energy and Environmental Protection
Public Utilities Regulatory Authority

Date