

Regulatory Trends in Emergency Preparedness and Storm Restoration

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Regulatory Trends

- **Post-storm audits are becoming common – expect them**
 - If the number of customers affected or the duration of the restoration are greater than expected for such a storm, an audit is likely – especially if the second time
- **Post-storm audits are costly – and not just the cost of the audit**
 - If the audit has significant recommendations for change (they all do), expect to spend a multiple of the audit cost in compliance
 - Expect the auditors to be around for a year or more
- **Trouble in one place will cause scrutiny everywhere**
 - After Katrina, e.g., PSC's asked a lot of questions about preparedness
- **Storm response problems can affect rate cases**
 - In a few cases, storm response was specifically cited as a reason for not getting all of a requested rate increase
- **Customer and regulator expectations of community continuity are increasing**
 - Major cities do not expect to be out for a week under almost any circumstances

A quick reminder of major events in the last five years

- 2005: Hurricanes Dennis, Katrina, Rita and Wilma
- 2004: Four Florida Hurricanes (Charley, Frances, Ivan, and Jeanne)
- 2003: August 14 Blackout; Hurricane Isabel in MidAtlantic
- 2002: Carolinas Ice Storm
- 2001: 9/11 Terrorist Attacks
- In addition, over the last five years there have been numerous incidences of local storms that caused regulatory audits, e.g.,
 - Los Angeles blackout (9-12-2005)
 - Central New Jersey Thunderstorms (2004, 2002),
 - Salt Lake City Holiday Snow Storm (2003)
 - Memphis Thunderstorm (July, 2003)
 - Kansas Ice Storm (December 2002)
 - Indianapolis Thunderstorm (2001)



What do post-storm audits tell us about readiness drivers?

To find out, we will review seven post-storm audits:

- New Jersey BPU – Response to Aug 2, 2002 Thunderstorm
- Washington (State) PUC – Review of Emergency Storm Operations Plans
- Kentucky PSC – Assessment of February, 2003 Ice Storm
- Connecticut DPUC – 2002 Management Audit of CL&P Storm Plan
- Utah PSC – Holiday Season, 2003 Storm Response
- NC Utilities Commission – Report on February 4&5, 2003 Ice Storm
- Maine PUC – January, 1998 Ice Storm Response
Also January, 2003 Winter Storm Audit

Post Storm Audits – Common Themes

Jurisdiction	Event	Key Recommendations/ Actions
New Jersey	Aug 2, 2002 Thunderstorm	180k customers out. Review focused on utility decisions taken prior, during and post event
Washington State	Review of '97/'98 Emergency Storm Operations Plans	Two-part study focused on: Emergency operating plans & prudence of preventative maintenance
Kentucky	February 2003 Ice Storm	Recommended review of maintenance practices and asset inspections
Connecticut	2002 Mgt. Audit, incl. Storm Plan	Document the outage restoration process and the processes that takes place in the emergency control center
Utah	2003 Holiday Season Storm Response	Implemented actions plans with specific completion dates in the areas of: outage management systems, vegetation maintenance practices, updating mutual aid contracts
Maine	1998 Storm Response 2003 Storm Response	30 recommended actions including: Expanded use of technology, investigate expanded government entity communications, expand, maintain and test emergency plans, develop contact methodology for critical customers, simplify outage reporting system
North Carolina	Feb 4,5 2004 Ice Storm	Expanded Communication plans, focus on vegetation maintenance and asset inspections

In these post-storm audits, there were common themes

1) Utilities' inadequate management of the expectations of the public, emergency agencies, critical customers, and regulatory entities

- Inadequate multi-language media messaging and appropriately fluent service/field representatives
- Inadequate communication and response with 'critical customers'
- Ineffective deployment of an individual responsible for all storm restoration efforts with sufficient authority to effectively disseminate the corporate message to third party entities
- Inadequate communications with elected and regulatory officials to provide restoration progress updates
- Inadequate provision of public safety messages
- Regulatory complaints driven from dissatisfied customer relating to confused restoration responsibilities (e.g. service drops, and meter enclosures)
- Inadequate inclusion of media and elected officials in mock storm drills

Post-storm audits – common themes, cont.

2) Maintenance programs, expeditious damage assessment and ‘excuses’ about failure of OMS/IVR/GIS technology during utility storm responses

- Failure to predict, plan and mobilize the workforce quickly
 - Failure to have an adequate plan for storm preparedness, in particular based on various weather alerts
 - Unacceptable delay in activating the staffing resource plan (including in-house, contractors, and mutual aid agreements)
 - Failure to keep Emergency Restoration Plans up to date
- Failure to prevent the level of damage
 - Failure to following existing maintenance programs
 - Failure to storm-harden the system via prudent capital and maintenance spending
- Failure to implement or maintain technology
 - Failure of the OMS and customer service IVR/VRU to handle the level of customer outages and calls
 - Failure to have an adequate process to track and monitor crew deployment
 - Failure to have IT staff included in the Storm Restoration Plan

Post-storm audits – common themes, cont.

3) Audit tone, scope and recommendations are predictable – they are costly to do, costly to respond to, and must be taken seriously

- Insights about the audit process
 - Audits are probably an inevitable part of the business of a regulated monopoly. The prudent utility will expect them to happen and will plan and act accordingly
 - Responding to regulatory audits are time consuming. The typical time frame to complete an audit is a few months, and then a year to monitor compliance
 - The first audit is cooperative, the second is imperative. The first time, regulators may couch recommendations as suggestions, not orders. But during subsequent storm audits, if they feel prior recommendations were not implemented (or effective), orders will be issued, and additional audits scheduled
 - The real cost of the audit is in complying with the recommendations if they are numerous and deep in scope. Proper planning and management on the utility's part can make sure the cost of compliance is only what it should be

Post-Storm Audit – JCP&L Specifics

JCP&L was cited for inadequacies in assessing storm damage, deploying the necessary crews, and ineffective mutual assistance

- 180,000 customers out of power in JCP&L central region
- Difficulties in assessing the storm damage and deploying necessary crews to problem areas raised criticism of the public, media and elected officials
- Failure to keep of an updated list of the “critical care customers” and the lack of support plan increased down-time and caused major dissatisfaction
- Lack of proper management of staffing issues and field experience was one of the root causes of the weak storm response that lead to PUC investigation

Recommendations included increase of hazard responders based on numbers of affected customers and duration of storm, hiring of 40 new full-time employees to maintain daily staffing levels, and contracting an outside consultant to help improve union/management relationships

Post-Storm Audits – Washington State specifics

- Washington Water Power ice storm resulted in loss of power to 100,000 (~30%) customers and Puget Sound Energy’s “Holiday Blast” that impacted 400,000 (~50%) customers
- Audit focused on eight needed improvements in the emergency restoration plan :
 - Damage to utility facilities
 - Storm anticipation and prediction
 - Emergency ramp up and operation center activation at the right time
 - Command and control detailing the organizational structure of the restoration efforts
 - Restoration priorities in the order of safety, restoring utility facilities, generating plants, transmission systems, and distribution facilities
 - Material resources in reserve through mutual aid agreements with other utilities along with contract supplies
 - Personnel resources involving training and deployment of in-house resources
 - Information management and communication with call center efficiency and effective public communication

Recommendations included de-centralizing the emergency response structure by assigning responsibilities to staff, and implementing more effective outage management and call center capabilities to provide accurate restoration times

Post-Storm Audits – Kentucky specifics

- Most severe ice storm of northern Kentucky in the last century in Feb. 2003, leaving ~281,000 customer out of power
- Difficulties lay in not having an updated emergency restoration plan with sufficient work force to achieve optimum customer response
- Lack of effective communication with media, public and state officials raised concerns at every level of the storm restoration process
- Lack of proper inspection and timely treatment of infrastructure prior to storm made for less effective maintenance program during the storm

Recommendations included regular review of the utility maintenance practices i.e. vegetation trimming and plant inspections, and more effective communication between the utilities, the public, the media, elected officials and the KY PSC

Post-Storm Audits – Connecticut (NU/CL&P) specifics

- Staffing segmented into logistics, communication and coordination of outside contractors
- Emergency operations center opened depending on the amount of customers out of service:

Customer Outages	Level of Emergency Activation
35,000	<i>Begin staffing the center</i>
50,000	<i>Depend on additional line crews from other NU utilities</i>
70,000 - 100,000	<i>Depend on outside line crews</i>
> 100,000	<i>Seek mutual aid and activate mutual assistance plan</i>

- Small and medium sized storms handled through local divisions with a more decentralized structure
 - Each division responsible for emergency restoration plans specific for their local area
 - Each district responsible for providing various media with status reports and other relevant information
- Post-storm audit includes reports sent by the Asset Strategies department related to infrastructure performance, to other operating companies for comment

Recommended to “flow-chart” the outage restoration process and document activities of the Emergency Operations Center

Post-Storm Audits – Utah Power/PacifiCorp specifics

- 19,000 customers out of power in Wasatch Front area during one of worst storms in 75 years
- Over 42% of customers impacted with restoration taking up to 5 days
- Primary problem lied in the mal-function of the “CADOP’s” system, not displaying all logged service calls in the operations center
 - During the restoration process, at no time was there a shortage of material, equipment or personnel

Recommended 28 areas of improvement related to technology, vegetation-caused outages, Emergency Plan, and T&D maintenance, with assigned action dates of completion in 2004 and 2005

Post-Storm Audits – Maine (CMP) specifics

- Ice storm impacted the New England and Canadian province of Quebec, resulting in some customer to be out of power for over three weeks
- Problems existed in managing the utility infrastructure for fast response to affected customers, and proper notification to customers and government agencies of accurate response time - inviting well deserved criticism from the Maine PUC
- Docket 2002-151 further critiques the utilities for their lack of proper implementation of previously recommended improvements by the PUC, resulting in a mandate to develop and file a comprehensive Restoration Information Plan within 90 days of the Order
 - The plan would include all aspects of the process, in particular a formal communication plan, and a well-defined tracking and monitoring crew development process
- Required to conduct regular internal assessments of all level 2 and level 3 storms, and provide a written copy to the PUC upon request

Recommendations included simplifying of outage reporting systems, expanded use of technology for customer notification purposes, and more effective communication between utilities, customers, government officials and the media

Post-Storm Audits – Duke, Progress Energy, Dominion specifics

North Carolina Governor commissioned a task force to review storm response and recovery efforts of state agencies and private companies

Amount of damage Incurred

- 1,042,034 of Duke’s North Carolina customers without service at one time
 - 62.1% of the total 1,675,361 customers restored within 9 days
- 460,400 of Progress Energy’s North Carolina customers, out of total affected 1,136,000 (40.25%), restored within 8 days
- 22,010 of Dominion’s North Carolina customers, out of total affected 112,523 (19.56%), restored within 4 days

Facilities	Duke	Progress Energy	Dominion
Poles damaged	3,200	1,322	10
Total poles	1,480,355	1,073,441	122,093
Transformers replaced	2,300	2,196	7
Total transformers	575,586	425,661	40,956
Cross-arms damaged	4,420	1,090	77
Insulators damaged	37,000	3,760	N/A
Fuses replaced	87,630	28,268	150

Recommendations included items primarily focusing on communication and system maintenance i.e. call centers, VRU systems and outage databases

Source: Report on December 2002 Ice Storm dated September 2003 submitted to North Carolina Public Utility Commission