

Unitil Energy System, Inc. Response

Regarding the New Hampshire Public Utilities Commission Staff's

After Action Report of November 26, 2014 Thanksgiving Storm

Overview: On November 19, 2015, Unitil submitted its initial comments regarding the New Hampshire Public Utilities Commission's Staff's After Action Report on the November 26, 2014 Thanksgiving Storm. Described below are specific changes the Company has made or is in the process of making, in response to the Staff's recommendations with respect to the Company's ERP or operational processes. Unitil submits that it is already in compliance with a majority of the recommendations. There are also a few items and processes that, if changed in accordance with the Staff's recommendations, would be counterproductive to an effective restoration, and alternative recommendations are provided.

Section III.B. – Staff Recommended Corrective Actions Regarding Utility Emergency Planning and Preparedness

1. Each utility shall ensure that the ERP Event Levels in their ERP Plan are consistent with the ERP Event Levels that the State of New Hampshire has established in the PUC 300 Rules for Electric Service (NH PUC 306.09(g)). Each ERP for all utilities shall clearly outline how Event Levels are derived from an impending forecast for potential wide-scale storm events.

Unitil is in compliance – refer to Unitil's ERP Section IV – Pre-Planning Activities (Event Type Classification Table 4 Pg. 216)

2. At a minimum, each utility shall review the data available from the December 2008 Ice Storm, the February 2010 Wind Storm, the 2011 Tropical Storm Irene, the October 2011 Snowstorm, the 2012 Hurricane Sandy and the 2014 Thanksgiving Snowstorm, to develop indices that facilitate the prediction of potential impacts of wide-scale emergency related storms of varying magnitudes. For utilities already utilizing ERP Event Levels as a pre-planning tool, any potential updates to the indices based on the most recent storm event is required to be incorporated within the ERP. Impact indices to be incorporated into each utility's ERP shall be updated to reflect potential impacts and shall be filed with the Commission no later than December 31, 2015.

Unitil is in compliance – refer to Unitil's ERP Section IV.B – Pre-Planning Activities (Weather Alert Levels Pg. 208).

3. Each utility shall incorporate into its impact indices factors such as snow accumulations including moisture content variability, ice thickness, average wind speeds and gusts, foliage conditions, and weather forecast confidence levels that will allow utilities to estimate, by ERP Event Level, the number of predicted customer outages and predicted troubles¹⁰ that could result from a forecasted weather event. For utilities already utilizing ERP Event Levels as a pre-planning tool, any potential updates based on the 2014 Thanksgiving Snowstorm event are required. Any amendments made are to be incorporated into each utility's ERP and shall be filed with the Commission no later than December 31, 2015.

Unitil is in compliance – refer to Unitil's ERP Section IV.B – Pre-Planning Activities (Weather Alert Levels Pg. 208).

Updated EEI Criteria based on previous storm(s):

Energy Event Index (EEI) – Revised Nov 2015

*Forecasted Weather Conditions ***WITH LEAVES*** (April 1st – November 15th)*

Level	Wind Speed	Wind Gusts	Snow (Dry)	Snow (Wet)	Ice
EEI = 1	< 20 mph	< 30 mph	> 6 in.	> 4 inches	> 1/10 in.
EEI = 2	≥ 20 mph	≥ 30 mph	≥ 12 in.	≥ 4 inches	≥ 1/10 in.
EEI = 3	≥ 25 mph	≥ 40 mph	≥ 18 in.	≥ 6 inches	≥ 3/8 in.
EEI = 4	≥ 40 mph	≥ 50 mph	≥ 24 in.	≥ 12 inches	≥ 1/2 in.
EEI = 5	≥ 45 mph	≥ 60 mph	≥ 24 in.	≥ 24 inches	≥ 1 in.

*Forecasted Weather Conditions ***NO LEAVES*** (November 15th - March 31st)*

Level	Wind Speed	Wind Gusts	Snow (Dry)	Snow (Wet)	Ice
EEI = 1	< 26 mph	< 40 mph	> 18 in.	> 6 in.	> 1/10 in.
EEI = 2	≥ 26 mph	≥ 40 mph	≥ 18 in.	≥ 6 in.	≥ 1/10 in.
EEI = 3	≥ 30 mph	≥ 45 mph	≥ 24 in.	≥ 8 in.	≥ 3/8 in.
EEI = 4	≥ 40 mph	≥ 50 mph	≥ 36 in.	≥ 12 in.	≥ 1/2 in.
EEI = 5	≥ 45 mph	≥ 60 mph	≥ 48 in.	≥ 24 in.	≥ 1 in.

Confidence Levels	
Low	< 30% Chance
Medium	≥ 30 < 60% Chance
High	≥ 60% Chance

- ERP Event Levels shall also include the predicted number of additional line crews required to restore power to the predicted percentage of potential customers without power as well as to repair the potential number of troubles, per ERP Event Level. Any changes required are to be incorporated into each utility’s ERP and shall be filed with the Commission no later than December 31, 2015.

Unitil is in compliance – refer to Unitil’s ERP Section IV – Pre-Planning Activities (Event Type Classification Table 4 Pg. 216)

- Not Applicable
- Each utility shall develop a detailed list (Plan) of potential recommendations on what the utility can do differently to effectively pre-stage line crews prior to the onset of a wide-scale emergency storm event, and effectively increasing external line crews as early as possible. In such detail, the Utility will include any changes recommended for consideration for inclusion in Commission rules, or other actions for the Commission to consider that would assist utilities in

this effort to pre-stage and effectively increase external line crews as early as possible. Each utility’s plan shall be filed with the Commission no later than December 31, 2015.

Pre – Staging Resource Plan:

The Staff’s After Action Report recommends that each utility develop a detailed plan to effectively pre-stage line crews prior to the onset of a known wide-scale emergency storm event. The utilities were asked, “In detail, provide any changes recommended for consideration for inclusion into the Commission rules or other actions the Commission should consider that would assist utilities in the effort to pre-stage and effectively increase external line crews as early as possible.” The utilities were requested to file these changes or “Plan” no later than December 31, 2015.

Unitil believes it would be helpful to outline its current protocols related to resource acquisition. Unitil maintains a contact database of over 90 contractors, including those engaged in line construction, forestry, damage assessment, wires down standby, and logistical support. This database is organized by the contractor’s location, with those closest (local) to the impacted regions served by the Company (i.e., less than 12 hours away) being called first, followed by those that are 12-24 hours away (reflects travel time needed to reach the impacted region more so than mobilization time) and finally those that are more than 24 hours away.

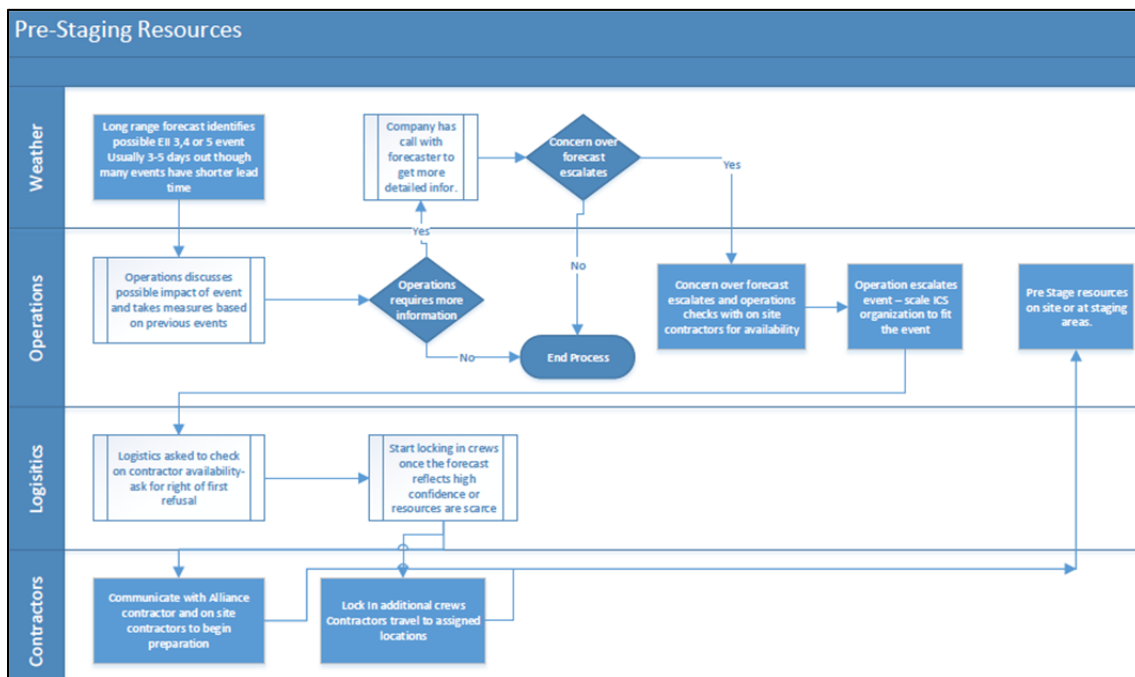


Figure 1 - Pre-Staging Resources Process

The resource acquisition process polls the contractor community in advance of a forecasted event to confirm availability, as well as inform them that Unitil may be looking for resources. By following this process, the Company usually receives return calls (updates) from the contractors when other utilities are also requesting their services or when they commit to another utility and are no longer available. The return call rate is a bellwether as to the status of available resources in the area. There are also options as to how resources are retained, which are strictly up to the contractor’s discretion. Some local contractors are willing to make arrangements to be on “stand-by” or “on-call.” Stand-by is when crews remain at their home base ready to travel but are not fully committed because the Company is uncertain as to the impact or timing of the

event. Typically, there is a reduced rate for stand-by. On-call is when the Company pays for a number of crews (typically in 12-hour blocks) to be available for response and are used for smaller events, when the impact is likely not as severe. In this case the worker remains at home until called. Both stand-by and on-call are atypical of contractor acquisition.

The Company also has an arrangement with a specific contractor who assembles resources only in response to forecasted storms. Under this prearrangement, the Company has the right of first refusal; however, this comes at a financial price, and few contractors are willing to agree to this approach. The fact that this contractor does not normally work for any utility is important because the North Atlantic Mutual Assistance Group (NAMAG) administrative guidelines (all New Hampshire utilities are NAMAG members) detail that a member cannot acquire contracted resources until the entire NAMAG membership is notified of the resource request. The only contractors that can be acquired are those working on a member’s property or not working for another utility anywhere. The notification process typically initiates a heightened response, including coordination calls with other regional mutual assistance groups (RMAGs), which tends to delay the process of assembling resources. However, it also opens the door for a wider pool of resources for a smaller, regional event (an event only impacting a few states) but also tends to be more costly due to crews traveling from outside the NAMAG region. By having a right of first refusal with its contractor, the Company can bypass the notification process, saving time. If the desired resource count cannot be acquired through the normal company calling process, a NAMAG call is requested. If there are still outstanding resource requests after the NAMAG call, additional calls will occur with adjacent RMAGs.

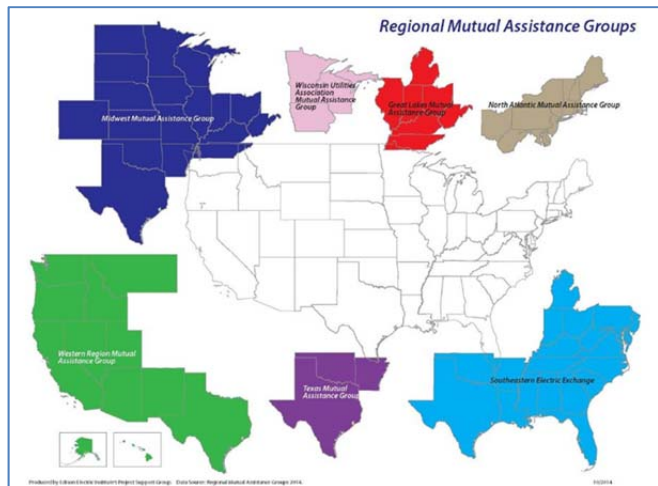


Figure 2 - US Mutual Assistance Groups

The size of the event usually dictates the complexity and difficulty of obtaining resources. For example, during the planning response to Hurricane Joaquin, NAMAG members requested 12,000 linemen. These requests were made prior to understanding where or even if the tropical cyclone was going to impact the mid-Atlantic and/or New England regions, which it ultimately did not. A request of this magnitude could not have been filled even from surrounding RMAGs, leaving everyone short of their desired crews. The point is that resources are now being secured much earlier and in much greater numbers when compared to how resources were acquired previously for similar events – due primarily to changing restoration expectations.

The question is how do we get crews pre-staged more quickly, assuming that they are available?

The answer is iterative in nature. First, an understanding of the weather event forecasted to impact the region and its timing are required, and second, an awareness of current resources available in the general area is needed.

A utility can acquire resources days in advance of a possible event, which would ensure a reasonable start to the restoration, and then adjust the count based upon the actual impact. The concern is that “locking in” crews days in advance is costly – especially when the event may

never come to fruition or even cause damage, as forecasting accuracy diminishes significantly beyond 48-72 hours. The chart below highlights the average hourly cost of a crew working storm response. It's evident that in-house and local contractors are the best value, but these resources are limited with those that are available very much in demand.

Hourly Rates - 2 Person Crew With A Vehicle			
Based on Double Time			
In-House	Avg. Local Contractors	Avg. Out-side Contractors	Outside with Mobilization ¹
\$193.00	\$522.00	\$810.00	50-70% adder/hr. \$1,360

However, given the changing expectations and the competitive environment of resource acquisition, locking in crews prior to having a high confidence in the weather forecast is the best way to ensure resource availability. The Company's present plan, as outlined in the ERP (Section IV and V), addresses the acquisition of resources, starting at least three days in advance of the forecasted events with the potential for significant impact to its service territory. The Company is not in favor of changing its existing protocols, which have been developed based on multiple, successful restorations since the 2008 Ice Storm. Unutil's storm responses have been satisfactory, when following the process outlined above.

One restriction that the Company encourages the Commission to revisit is the recovery criteria for forecast confidence levels. Today, the Company cannot access the reserve fund unless the forecast's EEI Level is 3 or more with high confidence. This is problematic due to the timing as to when the forecasters provide high confidence, which usually occurs just hours before an event commences. When the Company initially developed this process, it was not familiar with the timing of the confidence declaration from its forecaster, since this has never been a criterion for cost recovery. If Staff recalls, the addition of the confidence level to the forecast was as a result of a recommendation by the consultant hired by the Commission (Mr. Cannata), who sought a way to assure that the Company would not be over-preparing for every storm with an EEI Level of 3 or more. The Company has demonstrated over the years that it prepares for events in a responsible manner and, if anything, has been conservative with the use of the reserve fund. By eliminating the requirement of the confidence level, the Company would be able to prepare earlier without the threat of a disallowance of preparatory costs when audited by the Commission Staff.

Additionally, the Company would like to comment on Table 306.1 of the PUC 300 rules. Upon further review, the percentage (%) of Customers out does not align well with the Company's ERP event level chart, which reflects impact and resources needed based on historical data. For instance, the PUC table indicates that for a Level 3 event, more than 5% but less than 10% of a Company's customers would be impacted, which for Unutil is up to 7,500 customers. Although an outage effecting 7,500 customers could easily result from the loss of a single line, which could be restored employing in-house resources, the Company Level 3 would require us to bring in 10-40 additional line crews. The Company submits that a different criteria should be used (for example, miles of over-head conductor or tree miles of conductor) to dictate Event

¹ Mobilization and demobilization can vary widely depending on the company and the distance. The % adder is the average of what Unutil has seen over the past several years.

Levels rather than just a percentage of customers out, or the Rules should allow each utility to develop its own chart based on utility-specific data and eliminate the generic chart altogether.

Table 306-1			
Utility	ERP Event Level	% Customers Out	Outage Duration (Hrs.)
	5	≤2	<12
	4	>2≤5	0-24
	3	>5 ≤10	24-48
	2	>10≤20	48-144
	1	>20	48-240

Figure 3 - Table 306-1 (from PUC 300 Rules)

7. The Commission shall review each utility’ plan of potential recommendations on what the utility can do differently to effectively pre-stage line crews prior to onset of a wide-scale emergency storm event, and to effectively increase external line crews as early as possible.

Unitil files its ERP annually with the Commission, and to date there has been no requested changes to the plan from Staff. Unitil will make the appropriate changes in relation to the Staff report and submit a revised version to the Commission no later than December 31, 2015.

Section III.C. – Staff Recommended Corrective Actions Regarding Weather Forecasting

1. Not Applicable
2. Not Applicable
3. Not Applicable
4. Not Applicable

Section III.D. – Staff Recommended Corrective Actions Regarding Emergency Response

1. Not Applicable
2. All utilities shall add Major Holiday periods in each of their ERPs to address the need to accelerate standard planned actions when monitoring weather forecasts and the need to enhance/anticipate the preplanning and pre-staging of line crews prior to and during Major Holiday periods. These required changes shall be incorporated into each utility’s ERP and shall be filed with the Commission by December 31 2015.

Unitil will specifically discuss holidays in its ERP; however the Company feels strongly that the procedures already outlined within the ERP accounts for such conditions. Refer to Unitil’s ERP Section IV.D Pre-Planning Activities (Pre-Event Preparations & Reporting Pg. 221)

Section III.E. - Staff Recommended Corrective Action Regarding Restoration Response

1. Utilities that procure and coordinate resources through their parent companies shall document those decisions as well as notes of those decisions made by the parent utility concerning response and recovery actions. These decision points shall be included in Post-Storm After-Action Reviews.

The process in use today complies with Staff’s recommendation. Unitil Service Corp. (“Unitil Service”), an affiliate company of UES, makes many of the logistical arrangements during

emergencies, including the acquisition and coordination of resources. Unitil Service also prepares the After Action Report on behalf of its distribution company affiliates. As a result, decisions made by Unitil Service are well documented in the After Action Report.

2. Each utility shall include in its Emergency Response Plan procedures for pre-staging crews in the event of wide-scale emergencies that have the potential of affecting 10% or more of the customer base.
 - a. Provide a methodology for determining how many crew resources will be needed based on forecasts.
 - b. Pre-establish an available pool of resources.
 - c. Factor in travel times.
 - d. Incorporate its own historical restoration data as well as relevant data from other utilities from detailed reviews of the most recent wide-scale storms.
 - e. Provide for the cancellation of employee vacations as needed for major storm events.

Unitil's ERP addresses each of these suggestions today. Refer to Unitil's ERP Section V.E & G Mobilization (Mutual Assistance/Crew Allocations Pg. 238 & Storm Assignment List Pg. 242).

3. Not Applicable

Section III.F - Staff Recommended Corrective Actions Regarding Utility Communications

1. To the extent this is not already being done, utilities shall provide their customer representatives with customer specific ETR information. Additionally, websites should provide real-time mapping and show outage locations with number of customers affected at each location, as well as ETR's for each location.

Unitil has in place procedures that provide ETR information expeditiously and use multiple channels to disseminate the information to its customers. Refer to Unitil's ERP Section VI Corporate Communications (Pg. 244).

2. Not Applicable
3. Not Applicable
4. All utilities will staff their call centers to be able to receive customer calls in real time during major outages.

Unitil has staff assigned to the call center 24/7 during all major events. Refer to Unitil's ERP Section II.13 (Customer Operations Officer Pg. 25).

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