# STATE OF NEW HAMPSHIRE

**Inter-Department Communication**



**DATE: October 12, 2018**
**AT (OFFICE):** NHPUC

TCF

**FROM:** Rich Chagnon, Utility Analyst – Electric Division

**SUBJECT:** Docket No. DE 18-037

Unitil Energy Systems, Inc.
Annual Report pursuant to the DE 16-384 Settlement Agreement for the Company's Reliability Enhancement Program (REP) and Vegetation Management Program (VMP) Annual Report – Calendar Year 2017

Staff Review

**TO:** Debra A. Howland, Executive Director
Tom Frantz, Director – Electric Division

**CC:** Suzanne Amidon, Staff Attorney

## Summary

On March 16, 2018, Unitil Energy Systems, Inc. (UES or Company) filed the Company's REP and VMP Annual Report pursuant to the provisions of the Settlement Agreement in DE 10-055, Order No. 25,656 in DE 14-063, and Order No. 26,007 in Docket No. DE 16-384.

UES provided additional information as requested by Staff to complete the record of this filing. The over-collection of $30,823 was credited to the Company's External Delivery Charge mechanism on May 1, 2018 through Commission Order No 26,123 in DE 18,036. There is no rate change related to this filing. No additional action or review is warranted at this time.

## REP and VMP Annual Report 2017

The Settlement Agreement provides that in an annual compliance filing, the Company will continue to reconcile actual calendar year vegetation management and reliability

enhancement O&M expenses with test year costs of $4,858,739. Any over- or under-collection shall be reflected in the Company's Schedule EDC (External Delivery Charge) on May 1 of the following year or with approval of the Commission, the Company may credit unspent amounts to future vegetation management program expenditures.

UES has reconciled its VMP and REP program costs. For calendar year 2017, the Company spent $5,290,789 in VMP expenses, $71,143 of REP expenses related to VMP, and $220,000 for distribution reliability inspection and maintenance planning study for a grand total of $5,581,932. In calendar year 2017, the Company collected $754,016 from Fairpoint Communications, providing for a net total expenditure of $4,827,916. The net expenditure of $4,827,916 is subtracted from the base-rate test year costs of $4,858,739 for a total over-collection of $30,823 which was credited to the Company's External Delivery Charge mechanism on May 1, 2018.

**Summary of 2017 REP Results**

Each year the UES completes an annual distribution planning study and reliability study in each of the operation areas. Both of these studies incorporate analysis to improved system reliability.

Circuit analysis provides the basis for each distribution planning study. Circuit analysis is completed on a three year rotating cycle with the objective to review one-third of the entire system each year.

Each of the annual reliability studies report on the overall reliability performance of the electric systems from the previous year. The reports include an analysis of identified common trends or themes based upon type of outage (i.e. tree, equipment failure, etc.). Recommendations provided in the study are focused on improving the worst performing circuits as well as the overall system reliability.

For 2017, the Company allocated $300,000 to REP O&M expenditures, split between reliability centered maintenance and inspection and enhanced tree trimming. The Enhanced Tree Trimming annual funding of $80,000 is intended to target "problem" areas identified through engineering analysis, while $220,000 is allocated to the Exacter® inspection program[1].

Annually, the reliability analysis identifies areas of the distribution and subtransmission system which have experienced an abnormal or increasing amount of tree related outages in the previous year. Distribution Engineering provides the System Arborist a prioritized list of recommended distribution circuits and/or sub-transmission lines which would benefit the most from enhanced tree trimming. In total, $71,143 was spent on Enhanced Tree Trimming and 256 hazard tree removals were completed along with sideline clearing on selected portions.

[1] Exacter® technology is deployed by electric utilities to locate overhead distribution equipment showing signs of degradation and possible failure, thereby increasing overall system reliability by preventing failures before they occur. UES continued the program in 2017.

UES completed its inspection and survey program, and a survey of all overhead, three-phase circuitry, or a total of 419 pole miles of line. The circuit survey performed in 2017 identified 76 pieces of equipment that displayed the immanent failure signature and required repair or replacement. As was the case in prior years, the types of facilities identified included transformers, insulators, lightning arrestors, bushings, and cutouts. The cost to replace the identified equipment is expected to be approximately $100,000 annually.

Utilizing its Outage Management System (OMS) which details customer counts and protective devices, the Company was able to develop potential system reliability impacts. The 2017 program identified a repair every 5.5 miles, and an average of 642 customers impacted by each failure event if it occurred. The estimated number of customers impacted by potential failures of all identified locations is 48,783. The estimated customer minutes of interruption would be 3,845,516, calculated using 2017 customer counts. The total opportunity for avoided system SAIDI is 49.7 minutes, which represents 33.6 % of UES' most recent 10-year average annual SAIDI of 147.98 minutes.

**Summary of 2017 VMP Results**

UES' VMP is designed to support favorable reliability performance, reduce damage to lines and equipment, as well as provide a measure of public safety. The main benefits and risks addressed by these programs are reliability, regulatory, efficiency, safety and customer satisfaction. The report includes the following work completed in 2017.

1. 224 miles of circuit pruning was completed through planned cycle pruning.
2. 202 miles of line across 16 circuits were mitigated for hazard tree risk. A total of 1,566 total hazard trees were removed.
3. 64.7 miles of line were completed for mid-cycle pruning work.
4. 2.3 miles of line underwent forestry reliability work.
5. 16.4 linear miles of sub-transmission right-of-way floor were cleared.

UES continued its Storm Resiliency Program (SRP), targeting the resiliency efforts in communities in the Capital area. As in previous program years, the 2017 targeted circuits were selected through analysis of tree related reliability performance. In 2017, 34.2 miles of critical three phase line were mitigated and 4,209 hazard trees were removed along the same portion of line. In 2017, UES continued with an additional measure, first implemented in 2016, to improve the health of the adjacent trees along the overhead electric line corridor. Trees remaining and being pruned were treated with a tree growth regulator chemical in order to reduce the resulting tree growth after pruning and positively affect the tree's health.

The Company did experience an increase in major storms in 2017. The largest tree related event was the October 29th and 30th wind event. The Company believes that the SRP program contributed significantly to the swift restoration times and shortened duration of the event. UES reports that the Storm Resiliency work has demonstrated

success at preventing tree related failures and subsequent electric incidents compared to storm events prior to implementing its SRP program. This reduction in incidents reduces damage to the electric infrastructure and the need for crews to respond, which reduces the overall storm costs and expedites the restoration.

**Summary of 2017 Performance**

The reported reliability performance of the UES systems in 2017 (based on IEEE-1366) was the second best performance in the last five years in terms of SAIDI. The combined UES system SAIDI of 112.68 minutes is roughly 4.4% lower than the 5 year average of 117.92 minutes. The UES combined system SAIFI for 2017 was 1.331 interruptions which was the best performance in the last five years. The system SAIFI was the same as the 5 five year average of 1.332. The total number of interruption events recorded in 2017 was 1,093.

**Recommendation**

Staff reviewed the filing. Based on this detailed review, Staff determined that UES complied with the Settlement Agreement by filing a REP and VMP Annual Report with the relevant activities, costs and revenues for 2017 results and the 2018 plan. UES provided additional information as requested by Staff to complete the record of this filing. The over-collection of $30,823 was credited to the Company's External Delivery Charge mechanism on May 1, 2018 through Commission Order No 26,123 in DE 18,036. No additional action or review is warranted at this time.

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Executive.Director@puc.nh.gov
amanda.noonan@puc.nh.gov
epler@unitil.com
leszek.stachow@puc.nh.gov
ocalitigation@oca.nh.gov
richard.chagnon@puc.nh.gov
suzanne.amidon@puc.nh.gov
tom.frantz@puc.nh.gov

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**FILING INSTRUCTIONS:**

a) **Pursuant to N.H. Admin Rule Puc 203.02 (a), with the exception of Discovery, file 7 copies, as well as an electronic copy, of all documents including cover letter with:**

DEBRA A HOWLAND
EXECUTIVE DIRECTOR
NHPUC
21 S. FRUIT ST, SUITE 10
CONCORD NH 03301-2429

b) **Serve an electronic copy with each person identified on the Commission's service list and with the Office of Consumer Advocate.**

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