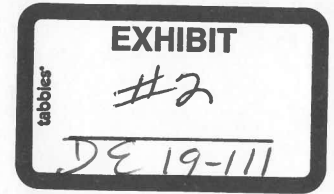


**STATE OF NEW HAMPSHIRE**  
Inter-Department Communication



**DATE:** July 23, 2019  
**AT (OFFICE):** NHPUC

**FROM:** Kurt Demmer, Utility Analyst – Electric Division *KC*  
**SUBJECT:** Docket No. DE 19-111; Docket No. DE 19-042

Unitil Energy Systems, Inc.  
Annual Reconciliation and Rate Filing (DE 19-111)

Unitil Energy Systems, Inc.  
Reliability Enhancement Plan (REP) and Vegetation Management  
Plan (VMP) Annual Report (DE 19-042)

Staff Review and Recommendation

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

**CC:** Anne Ross, Staff Attorney  
Brian Buckley, OCA Attorney

**Summary**

On February 28, 2019, 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.

On June 17, 2019, UES filed the Company’s Annual Reconciliation and Rate Filing Report pursuant to its tariffs approved in Order No. 24,072 (2002). UES proposed a rate change in the Stranded Cost Charge (SCC) and External Delivery Charge (EDC) rate mechanisms to be effective August 1, 2019.

UES provided additional information as requested by Staff to complete the record of the DE 19-042 REP/VMP filing. For the calendar year 2018, the Company underspent the

Storm Resiliency Program (SRP) budget by \$447,203. This underspend, coupled with a higher than typical payment of \$952,732 from Consolidated Communications for vegetation management as part of a cost-sharing agreement, are the main contributors to an over collection of \$754,813. In both DE 19-042 and DE 19-111, the Company is proposing a credit of \$487,257 in the EDC mechanism effective May 1, 2019<sup>1</sup> and using the remaining \$267,556 to increase the 2019 SRP budget.

In Docket DE 19-111, the Company is proposing a uniform rate increase in the SCC mechanism of \$0.00089 per kWh due to an increase in the prior period reconciliation balance and a decrease in the forecasted period cost credits. The EDC mechanism, which reflects the Company's credit proposal of \$487,257 will increase by \$0.00113 per kWh.

Staff reviewed the proposed SCC and EDC in filing DE 19-111. Staff recommends the approval of the SCC mechanism increase as proposed; however, Staff does not recommend the approval of the EDC mechanism as proposed and recommends that the Company reflect the entire \$754,813 over collection as credit towards the EDC mechanism effective August 1, 2019. Staff has reviewed this recommendation with the Office of the Consumer Advocate (OCA). OCA does concur with Staff's EDC recommendation.

### **REP and VMP Annual Report 2018**

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 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 2018, the Company spent \$4,741,775 in VMP expenses, \$94,883 of REP expenses related to VMP, and \$220,000 for distribution reliability inspection and maintenance planning study for a grand total of \$5,056,658. In calendar year 2018, the Company collected \$952,732 from Consolidated Communications, providing for a net total expenditure of \$4,103,926. The net expenditure of \$4,103,926 is subtracted from the base-rate test year costs of \$4,858,739 for a total over collection of \$754,813.

### **Summary of 2018 REP Results**

For 2018, the Company allocated \$300,000 to REP O&M expenditures, split between reliability-centered maintenance/inspection and an Enhanced Tree Trimming program.

---

<sup>1</sup> Per the Company's Tariff Schedule EDC, "In addition, the EDC shall include the calendar year over or under collection from the Company's Vegetation Management Program and Reliability Enhancement Program. The over or under collection shall be credited or charged to the EDC 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."

The Enhanced Tree Trimming annual funding of \$80,000 is intended to target “problem” areas identified through engineering analysis, while the remaining \$220,000 is allocated to the Exacter<sup>®</sup> inspection program<sup>2</sup>.

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, \$94,883 was spent on Enhanced Tree Trimming and 240 hazard tree removals were completed along with sideline clearing on the 3346 and 3347 sub-transmission lines in the UES Seacoast area. In addition, LiDAR (Light Detection and Ranging)<sup>3</sup> was performed on a distribution circuit to pilot a possible future inspection technology.

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 2018 identified 108 pieces of equipment that displayed the imminent 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 was \$80,778.

Utilizing its Outage Management System (OMS) which details customer counts and protective devices, the Company was able to develop potential system reliability impacts from the Exacter<sup>®</sup> program results. The 2018 program identified a repair every 3.9 miles, and an average of 568 customers impacted by each failure event if it had occurred. UES estimated 61,313 customers would have been impacted by potential failures at the Exacter<sup>®</sup> identified locations. Utilizing average restoration times, UES estimates that those potential outages would have caused 5,267,660 customer minutes of interruption. calculated using 2018 customer counts. The total opportunity for avoided system SAIDI is 67.9 minutes.

The Company recently completed a review of equipment failure trends since the inception of the Exacter<sup>®</sup> inspection program. Although initially the number of failures in the pole top equipment decreased from 114 in 2013 to 80 in 2014, the year over year number of failures has increased from 2014. The number of failures in 2017 was 117. The number of failures in 2018 was 116. The trend analysis showed no significant decrease in equipment failures over the 2013-2018 period. The Company’s analysis concluded that the Exacter<sup>®</sup> program benefits were inconclusive and the program should be discontinued.

---

<sup>2</sup> Exacter<sup>®</sup> 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 2018.

<sup>3</sup> LiDAR is a technology that utilizes laser pulses (up to 150,000 pulses/second) to calculate and record distance, time, and position of the light as it travels to and from an object (similar to RADAR). The records are collected and used to create 3D detailed aerial images.

### **Summary of 2018 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 highlights the following work completed in 2018.

1. 216.4 actual miles out of 216.4 planned miles (100%), planned circuit pruning was completed.
2. 111.4 actual miles out of 138.5 planned miles (80.4%), of Hazard Tree Mitigation was completed. 2,229 total hazard trees were removed.
3. 65.6 actual miles out of 65.6 planned miles (100%), of mid-cycle pruning work was completed.
4. 7.7 actual miles out of 7.7 planned miles (100%), of forestry reliability work was completed.
5. 17.7 actual miles out of 17.7 planned (100%) of miles of sub-transmission right-of-way floor were cleared.

UES continued its Storm Resiliency Program, targeting the resiliency efforts in communities in the Seacoast area. As in previous program years, the targeted circuits in 2018 were selected through analysis of tree-related reliability performance. In 2018, only 14.4 actual miles out of the planned 33.5 miles of critical three phase line were mitigated. 1,875 hazard trees were removed. The Company cited workforce restrictions, safety compliance, and the limited availability of specialized contractors to perform the SRP work as the reason the actual work did not meet the planned and budgeted work.

In response to Staff's further inquiry into the underperformance, UES has stated that it has implemented multiple initiatives aimed at improving the contractor bidding process, implementing Key Performance Indicators (KPI's) to determine workload share, commencing regional discussions surrounding workforce retention during large damaging storms, and streamlining the work planning process to enhance work visibility and reduce workforce fluctuations.

The Company, however, continues to note that favorable weather conditions and presence of storm work also is a factor in the annual work completion variances. While the Company attempts to adjust to and minimize impacts from these events, it is not entirely in the Company's control. The workforce retention initiative would address and mitigate this impact on workload due to large major events; although promising, this initiative is still in its preliminary stages of development with no significant historical performance to validate the initiative.

### **Summary of 2018 Performance**

The reported reliability performance of the UES systems in 2018 (based on IEEE-1366) was the third best performance in the last five years in terms of SAIDI. The combined UES system SAIDI of 115.8 minutes is roughly 0.9% higher than the 5-year average of

114.76 minutes. The UES combined system SAIFI for 2017 was 1.202 interruptions, which was the second best performance in the last five years. The system SAIFI was the same as the five-year average of 1.276. There were three Major Event Days (MEDs) not included in the annual reliability statistics for SAIDI and SAIFI.

### **Summary of 2019 REP/VMP Work Plan**

The Company has submitted the 2019 REP/VMP plan to Staff for evaluation. UES provided additional information as requested by Staff to assist in the evaluation. UES proposes to spend \$3,764,417 on VMP activities which include 225 miles of cycle pruning, 128.3 miles of Hazard Tree Mitigation, 7.4 miles of forestry reliability work, 59.8 miles of mid-cycle pruning and 18.1 miles of sub-transmission clearing. Each of these VMP activities are similar with previous years' work plans and expenditures. The SRP the Company has proposed is a \$267,556 increase in the \$1,423,000 SRP budget agreed to in the approved Settlement Agreement in DE 16-384. In DE-19-111 Exhibit SMS-1, Bates Page 00172, Line 4-13, the Company proposes storm resiliency work on 40 miles of line in the Seacoast service area, at a total cost of \$1,690,556. This work is comprised of the \$267,556 required to complete the remaining 9 miles of carry-over work, plus the \$1,423,000 annual expenditure planned for the 31 miles designated for 2019.

The Company completed 14.4 miles out of 33.5 miles of SRP work in 2018 as mentioned previously. One of the circuits scheduled for work in 2018, E23X1, had 0 actual miles completed out of its 10.1 miles scheduled. The remaining two partially completed circuits, E27X1 and E7X2, were 9.0 miles in total. The E23X1 circuit is listed as part of the proposed 2019 work plan, however, this circuit is a carryover from 2018 and is not designated as a carryover in the 2019 Company proposed plan. The carryover is actually 19.1 miles.

The REP portion of the Company's proposal removes the Exactor<sup>®</sup> program from the 2019 Work Plan and allocates the \$300,000 REP budget to the Enhanced Tree Trimming program. Seven sub-transmission lines were added to the 2019 Work Plan using the additional \$220,000 budget freed up by the discontinuance of Exactor<sup>®</sup>. The work will include Hazard Tree Mitigation, Ground to Sky pruning, R.O.W. widening, and Emerald Ash Borer patrols.

### **Staff Analysis of Company Request**

The REP/VMP portion of the EDC mechanism was reviewed by Staff in DE 19-042. UES provided additional information as requested by Staff in order for Staff to complete its review of the filing. Pursuant to the Settlement Agreement in DE 16-384, the Company may credit unspent amounts to future vegetation management program expenditures. The Company has discussed accelerating the SRP with Staff previously. In DE 18-037, the Company proposed an additional \$474,333 be added to the base SRP budget of \$1,423,000 for a total SRP budget of \$1,897,333. Staff did not support this proposal during the technical session. The Company did not move forward with the

acceleration proposal. If Staff had agreed to the acceleration proposal, the over collection for the REP/VMP portion of the EDC would have been \$1.23 million.

In DE 19-042, Staff does not recommend the \$267,556 reduction in the over collection of \$754,813 in order to complete the 9 miles of 2018 SRP carryover work. The Company has initiated multiple items that may have a beneficial impact in future work plan performance. However, this is the first year of these changes and there will be challenges in these initiatives as certain unforeseen circumstance arise such as major storm events for the remainder of 2019. Staff recognizes the challenges of these specialized resources that are utilized in SRP and other vegetation activities such as Enhanced Tree Trimming, ROW clearing, and Hazard Tree Mitigation. The shift of the REP Exactor® expenditures to Enhanced Tree Trimming in addition to the 31 base miles in the SRP budget is a significant task for the Company to validate newly implemented initiatives. An increase in Severe Storm activity for the second half of 2019 may also test the Company's new initiatives. A completion of the work plan as budgeted (without the added \$267,556) would be a favorable component in Staff's future assessment.

### **Recommendation**

Staff reviewed the proposed SCC and EDC in filing DE 19-111. Staff recommends the approval of the SCC mechanism increase as proposed; however, Staff does not recommend the approval of the EDC mechanism as proposed and recommends that the Company reflect the entire \$754,813 over collection as credit towards the EDC mechanism effective August 1, 2019. Staff has reviewed this recommendation with the Office of the Consumer Advocate (OCA). OCA does concur with Staff's EDC recommendation.

Executive.Director@puc.nh.gov

amanda.noonan@puc.nh.gov

brian.buckley@oca.nh.gov

epler@unitil.com

F.Ross@puc.nh.gov

james.brennan@oca.nh.gov

kurt.demmer@puc.nh.gov

ocalitigation@oca.nh.gov

tom.frantz@puc.nh.gov