

STATE OF NEW HAMPSHIRE

Inter-Department Communication

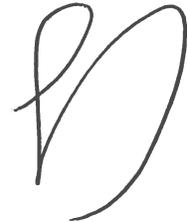
NHPUC 11DEC17PM4:27

DATE: December 11, 2017**AT (OFFICE): NHPUC****FROM:** Rich Chagnon, Utility Analyst – Electric Division**SUBJECT:** Docket No. DE 17-033

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 2016

Staff Review

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


Summary

On February 28, 2017, 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 and Order No. 25,656 in DE 14-063, and as agreed to in the Settlement Agreement approved in Docket No. DE 16-384¹. This filing also includes the information required by the DE 16-384 Settlement Agreement related to earnings sharing for calendar year 2016.

UES provided additional information as requested by Staff to complete the record of this filing. The over-collection of \$549,030 was credited to the Company's External Delivery Charge mechanism on August 1, 2017 through Commission Order No 26,042 in DE 17-102. There is no rate change related to this filing. No additional action or review is warranted at this time.

¹ The Settlement Agreement in DE 16-384 was pending approval at the time of UES's REP and VMP Report, this settlement was approved by the Commission on April 20, 2017, Order No. 26,007.

REP and VMP Annual Report 2016

The Settlement Agreement provides that on or before the last day of February of each year following approval, UES will provide an annual report to the Commission, Staff and OCA showing actual REP and VMP activities and costs for the previous calendar year, and its planned activities and costs for the current calendar year. Actual and planned REP and VMP expenses shown in the report will be reconciled with base-rate 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 2016, the Company spent \$4,731,666 in VMP expenses, \$90,627 of REP expenses related to VMP, and \$220,000 for distribution reliability inspection and maintenance planning study for a grand total of \$5,042,293. In calendar year 2016, the Company collected \$732,584 from Fairpoint Communications, providing for a net total expenditure of \$4,309,709. The net expenditure of \$4,309,709 is subtracted from the base-rate test year costs of \$4,858,739 for a total over-collection of \$549,030, which was credited to the Company's External Delivery Charge mechanism on August 1, 2017.

Summary of 2016 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 2016, 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 program².

² 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 2016.

The reliability analysis identifies areas of the 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 sub-transmission lines and/or distribution circuits which would benefit the most from enhanced tree trimming. In total, \$90,627 was spent on Enhanced Tree Trimming and 240 hazard tree removals were completed along with sideline clearing on selected portions.

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 2016 identified 94 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 2016 program identified a repair every 4.5 miles, and an average of 830 customers impacted by each failure event if it occurred. The estimated number of customers impacted by potential failures of all identified locations is 78,054. The estimated customer minutes of interruption would be 6,788,639, calculated using 2016 customer counts. The total opportunity for avoided system SAIDI is 89.6 minutes, which represents 60.5 % of UES' most recent 10-year average annual SAIDI of 148.0 minutes.

Summary of 2016 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 2016.

1. 242.7 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 2,660 total hazard trees were removed.
3. 70.5 miles of line were completed for mid-cycle pruning work.
4. 3.0 miles of line underwent forestry reliability work.
5. 18.1 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 Seacoast area. As in previous program years, the 2016 targeted circuits were selected through analysis of tree related reliability performance. In 2016, 33.8 miles of critical three phase line were mitigated and 1,741 hazard trees were removed along the same portion of line. New for 2016, UES implemented an additional measure 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 report shows a steady declining trend for UES in tree related incidents as well as in customers interrupted from 2012 through 2016. The number of customers interrupted was at the lowest point in 2016 over this five year period. The number of interruptions was below the five year average for the fourth year in a row while the number of customer interruptions was below the five year average for the third year in a row. These results indicate that UES's vegetation management program is producing positive results.

Summary of 2015 Performance

The reported reliability performance of the UES systems in 2016 (based on IEEE-1366) was the best performance in the last five years in terms of SAIDI and the number of interruption events experienced. The combined UES system SAIDI of 86.81 minutes is roughly 31.4% lower than the 5 year average of 126.58 minutes. The UES combined system SAIFI for 2016 was 0.942 interruptions which was the best performance in the last five years. The system SAIFI was approximately 32.7% lower than the 5 year average of 1.400. The total number of interruption events recorded in 2016 was 932.

Earnings Sharing

UES calculated its earned return on equity for the calendar year ending December 31, 2016. UES' Form F-1 for the year ending December 31, 2016 shows an earned return on equity of 8.11 percent. Since its return on equity is not greater than 10.5 percent, UES was not subject to a sharing of earnings for the 2016 calendar year reporting period.

Exogenous Events

The Company certifies that no exogenous events occurred during calendar year 2016 which caused changes in excess of the Exogenous Events Rate Adjustment Threshold.

Recommendation

Staff reviewed the filing, and issued a request for additional information which the Company provided as requested. 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 2016 results and the 2017 plan. The over-collection of \$549,030 was credited to the Company's External Delivery Charge mechanism on August 1, 2017 through Commission Order No 26,042 in DE 17-102. No additional action or review is warranted at this time.

SERVICE LIST - EMAIL ADDRESSES - DOCKET RELATED

Pursuant to N.H. Admin Rule Puc 203.11 (a) (1): Serve an electronic copy on each person identified on the service list.

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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.**
- c) Serve a written copy on each person on the service list not able to receive electronic mail.**