

**STATE OF NEW HAMPSHIRE  
PUBLIC UTILITIES COMMISSION**

**DOCKET NO. DE 19-057**

**PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE**

**d/b/a EVERSOURCE ENERGY**

**DISTRIBUTION SERVICE RATE CASE**

**UPDATED DIRECT TESTIMONY OF**

**Jay E. Dudley**

**Utilities Analyst IV**

**NEW HAMPSHIRE PUBLIC UTILITIES COMMISSION**

July 16, 2020

## Table of Contents

I. Introduction and Qualifications	3
II. Summary of Revised Testimony	3
III. Discussion of Revised Disallowance Calculations	5
IV. Additional Capital Project Review & Recommendations For 2015 - 2018	16
V. Conclusions and Recommendations	57

### List of Attachments

Attachment JED-8 Blaine St. Substation #A16C09

Attachment JED-9 Jackman #A16C10

Attachment JED-10 West Rye Substation #A16E06

Attachment JED-11 West Road Overload #A18E16

Attachment JED-12 Reject Pole Replacement #A07X45

Attachment JED-13 3271 Line Re-conductor #A16C01

Attachment JED-14 NH Remote Disconnect #NHRMTR17

Attachment JED-15 Distribution ROW #DL9R (2017)

Attachment JED-16 Convert Laconia 4kV #A15N01

Attachment JED-17 Distribution ROW #DL9R (2016)

Attachment JED-18 Reject Pole Replacement #R15RPR

Attachment JED-19 Series 16 Staff Data Requests

Attachment JED-20 Central, East, and North DA Projects

1 **I. INTRODUCTION AND QUALIFICATIONS**

2 **Q. Mr. Dudley, please state your full name and business address.**

3 **A.** My name is Jay E. Dudley. My business address is 21 South Fruit Street, Suite 10,  
4 Concord, NH 03301.

5

6 **Q. Please state your employer and your position.**

7 **A.** I am employed by the New Hampshire Public Utilities Commission (“Commission”) as a  
8 Utility Analyst for the Electric Division.

9

10 **Q. Have you previously submitted testimony in this proceeding?**

11 **A.** Yes. I submitted my original direct testimony in this docket on December 20, 2019.

12

13 **Q. Please describe your professional background.**

14 **A.** Descriptions of my professional background, education experience and prior testimony  
15 before the Commission can be found at pages 3-5 of my initial testimony submitted in  
16 this docket.

17

18 **II. SUMMARY OF TESTIMONY**

19 **Q. Please describe the purpose of your revised testimony.**

20 **A.** The purpose of my testimony is to provide updates and revisions to my original direct  
21 testimony filed in this docket on December 20, 2019, based on additional information  
22 submitted in this docket since that time. In response to the unforeseen, nationwide

1 pandemic triggered by the COVID-19 virus, Governor Sununu issued a series of  
2 Emergency Orders including Emergency Order #29 dated April 24, 2020, which  
3 authorized the New Hampshire Public Utilities Commission (PUC or Commission) to  
4 delay proceedings involving the investigation of any rate schedules filed by a public  
5 utility for period of up to six months but no later than eighteen months. Accordingly, on  
6 March 20, 2020, the Commission issued a Secretarial Letter granting Staff's request for a  
7 change in the procedural schedule cancelling the technical sessions/settlement  
8 conferences scheduled for March 24 and 25, 2020, and moving the technical  
9 sessions/settlement conferences to the previously scheduled hearing dates reserved for  
10 this docket. On March 24, 2020, with agreement from Eversource, Staff filed an  
11 additional request, granted by the Commission, for a three-month extension of the  
12 procedural schedule in this proceeding delaying the hearing dates until late June or early  
13 July 2020. On June 16, 2020, in Order No. 26,363, the PUC extended the deadline for  
14 the docket by six months, and directed Staff to develop an appropriate hearing schedule.  
15 The Commission approved the revised procedural schedule on July 7, 2020, which  
16 includes proposing 20 days of hearings beginning on August 19, 2020 and continuing  
17 throughout the months of September and October culminating on October 30, 2020.

18 **Q. During this period of delay in the procedural schedule, did Staff undertake a review**  
19 **of the additional information submitted by Eversource in this docket to determine**  
20 **whether or not Staff's testimony required updating or revision?**

21 **A.** Yes. The delay in the procedural schedule presented Staff with additional time to review  
22 the rebuttal testimony filed by Eversource on March 4, 2020, along with subsequent data  
23 responses from the Company filed on March 19, 20, and 27, and compare that material

1 against Staff's existing analysis. I was also able to review the results of the Staff Audit in  
2 this docket which was completed on March 25, 2020. Under normal circumstances (i.e.  
3 the original procedural schedule set out in this docket), Staff would have had to address  
4 these issues in a tech session, settlement conference, or at the merits hearing. Staff has  
5 found some of the additional information submitted by the Company to be useful and as a  
6 result I provide the following updates and revisions to my testimony. I have also  
7 provided my analysis of the remainder of the capital projects in my sample group not  
8 covered in my initial testimony based on my data response to Eversource's data request  
9 TS 3-01.

10 **Q. Which rebuttal testimony and data responses submitted by Eversource did you rely**  
11 **on in terms of updating the information in your original testimony?**

12 **A.** I largely relied on the joint rebuttal testimony, including attachments, of Erica L. Menard,  
13 Lee G. Lajoie, and David L. Plante dated March 3, 2020. I also reviewed Data  
14 Responses Staff 16-5, and 16-8 through 16-15.

15 **Q. Can you please briefly summarize the impact of your updated testimony on the**  
16 **recommendations contained in your initial testimony?**

17 **A.** As detailed below, in response to the additional information provided by Eversource, I  
18 have decreased my recommended disallowance by approximately \$13.5 million.

19  
20 **III. DISCUSSION OF REVISED DISALLOWANCE CALCULATIONS**

21 **Q. Did Staff's review of the Company's rebuttal testimony and the subsequent**  
22 **responses to Staff's data requests impact Staff's recommendations involving capital**  
23 **investments and additions to Eversource's rate base from 2015 to 2018?**

1 A. Yes, in part. The amounts of the recommended disallowances for capital projects were  
2 adjusted based on a review of the Menard, Lajoie, Plante rebuttal testimony. Specifically, the  
3 Eversource witnesses point out that my original calculation of disallowances was based on an  
4 incorrect comparison between initial budget amounts comprised of only direct costs and the final  
5 expenditure amounts comprised of both direct and indirect costs resulting in inflated variances.<sup>1</sup>  
6 Staff agrees that both direct and indirect costs need to be included in order to provide a complete  
7 accounting and an appropriate “apples-to-apples” comparison. To correct this error, I chose an  
8 all-in approach inclusive of both direct and indirect costs and relied on the original authorized  
9 budget amounts contained in Eversource’s Project Authorization Forms (PAF) and Supplement  
10 Request Forms, and Column J “Total Cost of Project” of Ms. Menard’s Attachment ELM-3 at  
11 Bates 1268. Ms. Menard confirmed at the Tech Sessions of October 28 and 29, 2019, that  
12 Column J of her attachment represented the final amounts for projects booked into rate base for  
13 the years represented, including the test year rate base of 2018. The updated initial budget  
14 amounts, and variance amounts, inclusive of both direct and indirect costs are provided in the  
15 table below:

16 **Table 1: Revised Project Variances for Reviewed Projects**

Year	Project ID	Project Description	Original Authorized Amount <sup>2</sup>	Total Cost (Actual) <sup>3</sup>	Variance
2018	A14W02	Daniel/Webster Substation	\$12,786,813	\$19,138,965	(\$6,352,152)
2018	A18VRP	Viper Replacement	\$ 950,000	\$6,003,793	(\$5,053,793)
2018	A16C09	Blaine St. Substation	\$2,718,253	\$3,969,115	(\$1,250,862)
2018	A16C10	Jackman Replace Equip.	\$4,556,810	\$7,132,860	(\$2,576,050)
2018	A16E06	West Rye Substation	\$1,304,000	\$2,698,369	(\$1,394,369)
2018	A18E16	West Road Overload	\$ 746,000	\$1,408,801	(\$ 662,801)
2018	A07X45	Reject Pole Replacmt.	\$ 850,000	\$1,962,868	(\$1,112,868)

<sup>1</sup> Rebuttal Testimony of Menard, Lajoie, Plante at 10 (Bates 58).

<sup>2</sup> Source: Staff 12-045, Project Authorization Forms and/or Supplemental Request Forms

<sup>3</sup> Source: Attachment ELM-3, column J.

<b>Total</b>			<b>\$23,911,876</b>	<b>\$42,314,771</b>	<b>(\$18,402,895)</b>
2017	A14N21	Berlin Eastside	\$1,308,101	\$3,709,636	(\$2,401,535)
2017	A14S08	Garvin Substation	\$4,578,971	\$5,479,461	(\$900,490)
2017	A16C01	3271 Line Reconductr.	\$1,096,573	\$2,458,566	(\$1,361,993)
2017	NHRMTR17	NH Remote Disconn.	\$918,793	\$2,283,449	(\$1,364,656)
2017	DL9R	Distribution ROW	\$1,644,500	\$2,379,966	(\$735,466)
<b>Total</b>			<b>\$9,546,938</b>	<b>\$16,311,078</b>	<b>(\$6,764,140)</b>
2016	A15N01	Convert Laconia 4kV	\$1,123,000	\$2,465,701	(\$1,342,701)
2016	DL9R	Distribution ROW	\$929,800	\$1,643,132	(\$713,332)
<b>Total</b>			<b>\$2,052,800</b>	<b>\$4,108,833</b>	<b>(\$2,056,033)</b>
2015	R15RPR	Reject Pole Replacmt.	\$3,001,000	\$8,715,864	(\$5,714,864)
2015	A15CDA	Central Region DA	\$1,648,945	\$4,859,890	(\$3,210,945)
2015	A15EDA	Eastern Region DA	\$358,551	\$5,182,798	(\$4,824,247)
2015	A15NDA	Northern Region DA	\$3,578,106	\$9,292,601	(\$5,714,495)
2015	A15SDA	Southern Region DA	\$1,156,821 <sup>4</sup>	\$4,022,145	(\$2,865,324)
<b>Total</b>			<b>\$9,743,423</b>	<b>\$32,073,298</b>	<b>(\$22,329,875)</b>
<b>Grand Total</b>			<b>\$45,255,037</b>	<b>\$94,807,980</b>	<b>(\$49,552,943)</b>

1  
2 The updated total disallowances, based on Staff's project review, are provided in Table 2 below:

3 **Table 2: Updated Project Disallowances**

Year	Project ID	Project Description	Recommended Disallowances
2018	A14W02	Daniel/Webster Substation	\$6,352,152
2018	A18VRP	Viper Replacement	\$5,053,793
2018	A16C09	Blaine St. Substation	\$1,232,862
2018	A16C10	Jackman Replace Equip.	\$2,491,663
2018	A16E06	West Rye Substation	\$1,394,369
2018	A18E16	West Road Overload	\$ 662,801
2018	A07X45	Reject Pole Replacmt.	\$1,112,868
<b>Total</b>			<b>\$18,300,508</b>
2017	A14N21	Berlin Eastside	\$2,401,535
2017	A14S08	Garvin Substation	\$900,490
2017	A16C01	3271 Line Reconductr.	\$1,361,993
2017	NHRMTR17	NH Remote Disconn.	\$1,364,656
2017	DL9R	Distribution ROW	\$735,466

<sup>4</sup> Source: Attachment CPP-Rebuttal -1 at Bates 112.

<b>Total</b>			<b>\$6,764,140</b>
2016	A15N01	Convert Laconia 4kV	\$1,342,701
2016	DL9R	Distribution ROW	\$713,332
<b>Total</b>			<b>\$2,056,033</b>
2015	R15RPR	Reject Pole Replacmt.	\$5,714,864
2015	A15CDA	Central Region DA	\$3,210,945
2015	A15EDA	Eastern Region DA	\$4,824,247
2015	A15NDA	Northern Region DA	\$5,714,495
2015	A15SDA	Southern Region DA	\$2,865,324
<b>Total</b>			<b>\$22,329,875</b>
<b>Grand Total</b>			<b>(\$49,450,556)</b>

1  
2 As indicated in this table, Staff’s corrected amount for total disallowances is \$49,450,556  
3 (inclusive of both direct and indirect costs) as opposed to \$62,999,792 recommended previously,  
4 representing a reduction in Eversource’s favor of \$13,549,236. Consequently, Staff revises its  
5 original recommendation on adjustments to Eversource’s permanent rate proposal as follows:

- 6
- 7 • Eversource’s proposed revenue requirement: \$69,254,451
  - 8 • Staff’s reduction to revenue requirement: (\$31,432,669)<sup>5</sup>
  - 9 Adjusted revenue requirement \$37,821,782
  - 10 • Eversource’s proposed rate base: \$2,171,045,401
  - 11 • Staff’s reduction to rate base: (\$49,450,556)
  - 12 • Adjusted rate base: \$2,121,594,845

13

<sup>5</sup> See Revised Testimony of Donna H. Mullinax, Attachment DHM-S-1 at 2.



1 **Q. Does Staff agree with the Company’s assertion that any variances in budgeted**  
2 **amounts versus final project costs should be based on the difference between “Revised**  
3 **Estimated Cost” and the “Direct Costs of the Project”?**

4 **A.** No. The Company’s witnesses assert that the appropriate initial project cost, or the  
5 appropriate starting point for calculating budget variances, begins with the “Revised Estimated  
6 Cost” amounts represented in Column F of Attachment ELM-3 at Bates 1268 of Ms. Menard’s  
7 original testimony and comparing those figures against the “Direct Cost of Project” amounts  
8 under column G of Ms. Menard’s Attachment ELM-3.<sup>6</sup> It is important to note that the “Revised  
9 Estimated Cost” amounts include only direct costs and exclude indirect costs as do the amounts  
10 reflected in Column G. This is a deficiency that repeats itself throughout Attachment CPP-  
11 Rebuttal-1. The Commission has recognized that a utility’s management must consider both  
12 direct and indirect costs in evaluating capital investments.<sup>7</sup> By utilizing the totals which contain  
13 only the direct costs, Eversource significantly reduces the impact of the variances and provides  
14 an incomplete picture of the overall capital budget issue. The Company’s calculus is inaccurate  
15 and masks the severity of the budgeting issues uncovered by Staff.  
16 For example, referring to the rebuttal testimony of Menard, Lajoie, and Plante at Bates 63, using  
17 Blaine Street Substation #A16C09 as an illustration, the revised budget estimate of \$3,151,000  
18 (Column F) is referenced as the appropriate starting point resulting in a budget under-run of only  
19 -\$123,416 (Column H) when compared with the actual final direct cost of \$3,027,584 (Column  
20 G). However, in reviewing the Supplement Request Form and the PAF for this project (Staff’s  
21 complete analysis for this project is provided below) the “Current Authorized Amount” (i.e. the  
22 initial budget amount approved by Eversource) for the project is \$2,719,000 including both

<sup>6</sup> Rebuttal Testimony of Menard, Lajoie, Plante at 14-16 (Bates 62-64).

<sup>7</sup> See *Liberty Utilities*, Order No. 26,377 at 9-10 (June 30, 2020)

1 direct and indirect costs.<sup>8</sup> A further review of the Supplement Request Form shows justifications  
2 provided by the project manager for additional funds in the amount of \$1,268,000 resulting in the  
3 revised total request of \$3,987,000 inclusive of both direct and indirect costs. The form also  
4 provides an itemized break-out of the direct and indirect costs and a brief description of why the  
5 authorized budget was exceeded. Thus, by taking the initial authorized budget amount of  
6 \$2,719,000 (both direct and indirect costs) and comparing it with the total cost of the project  
7 \$3,969,115 (Column J) there is actually a sizable cost overrun of \$1,250,115. Based on this  
8 content and similar content in the other Supplement Request Forms reviewed, it is clear that the  
9 intent of the form is to account for and justify any increases in spending over “the original  
10 authorized dollar amount” for the project.<sup>9</sup> Given that the Company’s own project  
11 documentation points to the “Current Authorized Amount” as the appropriate starting point for  
12 project managers/engineers, Staff views Eversource’s position on this issue to be highly suspect.  
13 If the Company’s described approach were accurate, then how would the Company’s project  
14 managers/engineers know when to file a request for additional funding under the Supplement  
15 Request procedure if the original authorized budget amounts do not serve as appropriate  
16 benchmarks for additional funding? Why bother with submitting a Supplement Request at all?  
17 According to the Company’s assertion, the revised estimate amounts which include the amounts  
18 requested for additional funding, comprise the actual starting points for determining budget  
19 variances. Under such a methodology, Eversource would always be within budget and almost  
20 never over-budget. Staff recommends that the Commission dismiss this alternative methodology  
21 because it is inherently flawed and is not a reliable indicator as to whether the Company’s  
22 actions were prudent.

<sup>8</sup> Attachment JED-8.

<sup>9</sup> Also see Menard testimony, Attachment ELM-5 at Bates 1369-1370.

1 In addition, the Company consistently argues that initial budget estimates provided under column  
2 E of Ms. Menard’s Attachment ELM-3 are “iterative” and “conceptual”<sup>10</sup> and therefore cannot  
3 be relied upon since they are constantly changing and evolving based on circumstances on the  
4 ground. Staff realizes that budgets are subject to change based on unforeseen complications,  
5 especially with large complex projects; however, as stated repeatedly in my original testimony  
6 and in the analysis contained below, Staff’s expectations are that the Company’s engineering  
7 staff are experienced, knowledgeable, and intimately familiar with all levels of capital projects  
8 and the specific engineering requirements of those projects. As such, Staff believes that it is not  
9 unreasonable to expect that Eversource’s scoping, design, and budgeting processes be as robust  
10 and accurate as possible to avoid extensive re-engineering of a project as it progresses to  
11 completion. As the Commission has recently held, “Prudent decisions cannot be made if  
12 significant, foreseeable cost elements of a project are overlooked at the outset and meaningful  
13 reexamination of costs does not take place during project execution, as costs increase.”<sup>11</sup> Indeed,  
14 the Company’s own project authorization policy, APS-1, requires that the project evaluation  
15 criteria contained in the PAF should be “in sufficient detail and with explanations so that the  
16 approver is fully informed and can make an educated approval decision.”<sup>12</sup> Nevertheless, in  
17 many of the Supplement Request Forms reviewed by Staff, and as discussed in my project-by-  
18 project analysis, the design, scoping, and budgeting process is criticized by the project managers  
19 themselves for overlooking foreseeable and knowable costs that should have been recognizable  
20 by the project planner and factored into the initial budget. For example, the Supplement Request  
21 Forms reviewed for the Blaine St. Substation #A16C09 (Attachment JED-8), Jackman #A16C10  
22 (Attachment JED-9), and West Rye Substation #A16E06 (Attachment JED-10), all refer to, and

<sup>10</sup> *Id* at 12-16 (Bates 60-64).

<sup>11</sup> *See Liberty Utilities*, Order No. 26,377 at 9 (June 30, 2020).

1 itemize, many cost elements that were overlooked in the original PAF estimate contributing to  
2 the cost overruns for those projects. As outlined in the analysis below, this type of commentary  
3 repeated itself for most of the projects reviewed by Staff. Such internal assessments do not give  
4 Staff confidence that the Company's design, scoping, and budgeting processes are sufficiently  
5 rigorous, efficient, or accurate. Moreover, this only serves to reinforce Staff's original finding  
6 that the Company's budgeting process appears to be nebulous and ad hoc in nature, and deficient  
7 in discipline and exactness.

8 **Q. Are you recommending the disallowance of the variance between original project**  
9 **cost estimates and the final actual costs for certain projects purely because you deem these**  
10 **variances to be unjustified cost overruns and evidence of imprudence?**

11 **A.** No, not at all. Staff recognizes that for any project there may be changed circumstances  
12 and escalation in costs that are not foreseeable. Staff recommended disallowances are based on  
13 record evidence that demonstrates that the Company overlooked significant, foreseeable project  
14 costs at the outset, that the Company failed to conduct a meaningful re-examination of cost  
15 increases during project execution, that management's review and oversight of the project was  
16 severely flawed, that the Company at times did not follow its own procedures and that the  
17 Company has failed to meet its burden of demonstrating that its decision making was prudent.

18 **Q. Your direct testimony indicates that you reviewed a sample of the capital projects**  
19 **undertaken by the Company since its last rate case. Based on your review of that sample,**  
20 **are you recommending that the Commission disallow costs for projects that you did not**  
21 **review?**

22 **A.** No. I reviewed a sample of the projects because it was not practical for me to review all  
23 500 projects undertaken by the Company since its last rate cases. My recommended

<sup>12</sup> Attachment ELM-5 at Bates 1365.

1 disallowances only apply to the projects I reviewed based on record evidence of the Company's  
2 lack of management oversight with respect to project details, cost containment and compliance  
3 with its own written procedures, and the Company's failure to demonstrate that its actions were  
4 prudent.

5 **Q. Your direct testimony discusses deficiencies in the Company's project  
6 documentation and compliance with Eversource's policies and procedures. Were those  
7 concerns addressed in the rebuttal testimony of the Company's witnesses?**

8 **A.** No. Although the rebuttal testimony of Menard, Lajoie, and Plante admit to the lack of  
9 sufficient detail in Eversource's project documentation, they also claim that the same  
10 documentation was in strict compliance with Eversource's capital authorization policy and  
11 procedures.<sup>13</sup> This claim runs contrary to the findings of Staff since during the course of Staff's  
12 review, numerous examples of policy noncompliance were detected primarily involving the  
13 Supplement Request Forms. For example, under the APS-1 Project Authorization Policy, the  
14 project manager is responsible for submitting a Supplement Request Form *as soon as it is likely*  
15 *that the project cost is expected to increase from the original authorized dollar amount.*<sup>14</sup> In  
16 addition the APS-1 requires that: "Prior to spending any additional funds, the Supplemental  
17 Request Form should be routed to and approved by the appropriate approvers in accordance with  
18 the DOA based on the total project cost including the supplement."<sup>15</sup> However, as discussed in  
19 my direct testimony and the project analysis below, Staff found that the supplement requests for  
20 the following projects were filed between one month and up to a year after the projects were  
21 completed:

- 22
- Daniel/Webster Substation

<sup>13</sup> Rebuttal Testimony of Menard, Lajoie, Plante at 7-8 (Bates 55-56).

<sup>14</sup> Testimony of Erica L. Menard, Attachment ELM-5 at Bates 1369.

- 1 • Garvins Substation
- 2 • Berlin Eastside
- 3 • West Road Overload
- 4 • Reject Pole Replacement (#A07X45
- 5 • Convert Laconia 4kV
- 6 • Reject Pole Replacement (R15RPR)

7 As I state in my direct testimony, the untimely filing of this key document appears to negate the  
8 purpose of the form which is to alert management to any cost overruns and obtain authorization  
9 for those overages, further indicating that cost overruns were not diligently monitored by  
10 management. An additional deficiency was a failure to include “Lessons Learned” sections or  
11 “Actions to prevent recurrence” sections in most of the supplement requests reviewed by Staff  
12 which, when included, provided a valuable look-back and reassessment from the project  
13 engineers/managers’ perspective as to what could have been done differently to keep a project  
14 within budget. In terms of other non-compliant documentation, as detailed above, most of the  
15 PAF’s reviewed were faulted in the Supplement Request Forms for overlooking basic and  
16 fundamental cost elements that should have been considered by the planners and engineers in  
17 developing the initial budget for the project. As the APS-1 requires, project evaluation criteria  
18 contained in the PAF should contain “sufficient detail” to allow the approver to be fully  
19 informed so that an educated approval decision can be made at the outset.

20 **Q. Your direct testimony discusses missing project documentation that was not**  
21 **provided by Eversource in discovery, primarily missing work orders. Did the Company**  
22 **provide Staff with the missing work orders?**

<sup>15</sup> *Id.* at Bates 1370.

1    **A.**     Yes, in part. Copies of work orders for all projects under review were originally  
2 requested by Staff in Staff Data Request No. 12-045 on September 20, 2019, but not provided by  
3 Eversource in its response. Staff inquired again at the Technical Session held on February 12,  
4 2020, but Eversource witnesses stated that they did not know or understand what a work order  
5 was. Eversource later claimed in the rebuttal testimony of Menard, Lajoie, and Plante that they  
6 withheld the documentation because they did not understand what Staff meant by “work order”  
7 and also admitted that they were in possession of the documentation and that it was available for  
8 Staff’s review.<sup>16</sup> Based on this disclosure, Staff issued a second data request in Staff Data  
9 Request No. 16-9 and Eversource responded on March 31, 2020; however, copies of individual  
10 work orders for each project were not provided. Instead Eversource apparently enters all of the  
11 work order information into an Excel spreadsheet and Eversource provided the spreadsheets in  
12 its data response. In addition to the work order numbers and amounts, the spreadsheets also  
13 contained numerous accounting adjustments, coded entries, and many entries lacking a  
14 description, making it difficult for Staff to precisely trace and verify the actual costs assigned to  
15 a project leading up to the variance. Adding to the difficulty is the fact that the entries to the  
16 spreadsheets are not arranged in chronological order but rather are scattered randomly  
17 throughout. As a result, Staff did not find this information useful in that format. If Eversource  
18 had provided this information earlier, it would have given Staff the opportunity to work through  
19 the line items with the Company’s witnesses during the Technical Sessions held in October, and  
20 perhaps obtain copies of the physical work orders. However, given that the requested  
21 information was not provided until March, the period for both discovery and technical sessions  
22 had expired under the procedural schedule precluding any further inquiries by Staff.  
23 Interestingly, Staff later learned upon review of the Final Audit Report, that Eversource had

<sup>16</sup> Rebuttal Testimony of Menard, Lajoie, Plante at 39 (Bates 87).

1 provided Audit with copies of individual work orders for capital projects under Audit’s review  
2 apparently without objection or delay.<sup>17</sup>

3 **Q. In addition to your review of the individual capital projects, are you aware of any**  
4 **other evidence of the Company’s lack of adequate management oversight with respect to**  
5 **capital projects.**

6 A. Yes. On March 25, 2020, the PUC Audit Staff issued its Final Audit Report in this  
7 docket. Audit Issue #3 in that Report addressed Budgeted vs. Actual Project Costs. The Report  
8 notes a number of projects that had variances in excess of 30% between the budgeted and actual  
9 amounts and found that the Company should be better able to track the cost of projects so the  
10 cost variances may be identified and justified.<sup>18</sup> Audit Issue #4 addressed Project/Work Order  
11 Documentation. The Report notes that the Audit reviewed 21 projects and associated work  
12 orders and found instances where the Company was missing supporting information or the  
13 project was not adequately justified. The Audit Report recommended that the Company should  
14 be able to provide and track project information in an adequate manner so that the Company is  
15 better able to track the cost details associated with project and work order expenditures.<sup>19</sup> Audit  
16 Issue #4 also corroborated Staff’s findings in terms of the Company’s inaccurate accounting of  
17 the appropriate starting point for calculating budget variances for capital projects by finding “the  
18 Company must have meaningful benchmarks to determine budgeted vs. actual costs to measure  
19 cost overruns/underruns on projects.”<sup>20</sup>

20 **Q. You note above that you only found the discussion of direct and indirect costs as**  
21 **part of the Company’s capital budgeting in the rebuttal testimony of Menard, Lajoie, and**

<sup>17</sup> Rate Case DE 19-057, FINAL Audit Report at 50-74 (March 25, 2020).

<sup>18</sup> *Id.* at 135.

<sup>19</sup> *Id.* at 137.

<sup>20</sup> *Id.* at 136.



1 **Plante to be useful. What about your review of the additional data responses from**  
2 **Eversource?**

3 A. Aside from the discussion of direct and indirect costs, the rebuttal testimony of Menard,  
4 Lajoie, and Plante was essentially a reiteration of information contained in prior data responses  
5 received from Eversource and contained no new insights. In terms of the additional data  
6 responses I reviewed, specifically series 16 (Attachment JED-19), I found most of them to  
7 largely confirm Staff's prior conclusions as outlined below:

- 8 • Data Response Staff 16-005 and 16-006, Pole Replacements: Demonstrates that the high  
9 number of pole replacements under the Company's pole replacement program was  
10 unnecessary and that the increased deployment by Eversource of steel poles is unneeded  
11 and wasteful (see discussion of projects A07X45 and R15RPR below).
- 12 • Data Response Staff 16-010, 16-011, and 16-012, Viper Reclosers: Confirms that the  
13 defective Viper reclosers could be replaced and redeployed at no additional cost to  
14 Eversource and verifies the complete cooperation of G&W Electric Company in that  
15 project. Also confirms that the Viper failure rate was not significant or critical over the  
16 time period of 2016-2018.
- 17 • Data Response Staff 16-013, Used and Useful: Confirms that plant additions deemed by  
18 Eversource to be used and useful are subject to full prudence review by Staff.
- 19 • Data Response Staff 16-015, Daniel/Webster Substation: Confirms Staff's conclusion  
20 involving load growth in that service area.

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1 **IV. DISCUSSION OF ADDITIONAL CAPITAL PROJECT REVIEW &**  
2 **RECOMMENDATIONS FOR 2015 THROUGH AND 2018**

3  
4 **Q. Do have any additional updates you wish to add to your testimony?**

5 A. Yes. In a data request served on Staff by Eversource on February 12, 2020, Eversource  
6 TS 3-01, the Company requested that I produce my analysis of the remaining capital additions  
7 referenced in my testimony but not specifically detailed. I provided Eversource with that  
8 analysis on February 21, 2020, and include it below.

9 **Q. Please provide a list of those additional projects.**

10 A. A table of the additional projects in question is provided below:

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**Table 3: Additional Projects Reviewed**

Year	Project ID	Project Description	Original Authorized Amount <sup>21</sup>	Total Cost (Actual) <sup>22</sup>	Variance
2018	A16C09	Blaine St. Substation	\$2,718,253	\$3,969,115	(\$1,250,862)
2018	A16C10	Jackman Replace Equip.	\$4,556,810	\$7,132,860	(\$2,576,050)
2018	A16E06	West Rye Substation	\$1,304,000	\$2,698,369	(\$1,394,369)
2018	A18E16	West Road Overload	\$ 746,000	\$1,408,801	(\$ 662,801)
2018	A07X45	Reject Pole Replacement	\$ 850,000	\$1,962,868	(\$1,112,868)
<b>Total</b>			<b>\$10,175,063</b>	<b>\$17,172,013</b>	<b>(\$6,996,950)</b>
2017	A16C01	3271 Line Reconductor	\$1,096,573	\$2,458,566	(\$1,361,993)
2017	NHRMTR17	NH Remote Disconn.	\$918,793	\$2,283,449	(\$1,364,656)
2017	DL9R	Distribution ROW	\$1,644,500	\$2,379,966	(\$735,466)
<b>Total</b>			<b>\$3,659,866</b>	<b>\$7,121,981</b>	<b>(\$3,462,115)</b>
2016	A15N01	Convert Laconia 4kV	\$1,123,000	\$2,465,701	(\$1,342,701)
2016	DL9R	Distribution ROW	\$929,800	\$1,643,132	(\$713,332)
<b>Total</b>			<b>\$2,052,800</b>	<b>\$4,108,833</b>	<b>(\$2,056,033)</b>

<sup>21</sup> Source: Staff 12-045, Project Authorization Forms and/or Supplemental Request Forms

<sup>22</sup> Source: Attachment ELM-3, column J.

2015	R15RPR	Reject Pole Replacement	\$3,001,000	\$8,715,864	(\$5,714,864)
<b>Total</b>			<b>\$3,001,000</b>	<b>\$8,715,864</b>	<b>(\$5,714,864)</b>

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**2018 Capital Projects**

**1. Project #A16C09 Blaine St. Sub Add 34.5-12kV 10MVA Transformer**

**Attachment JED-8**

**Budget: \$2,718,253                      Actual: \$3,969,115**

**Budget v. Actual: \$1,250,862 (46% variance)**

**Recommended Disallowance: \$1,232,862 (see below)**

**Project Authorization Form:**

- This project involved the removal and replacement of the 60 year old substation transformer and metal clad switchgear lineup, with the installation of a new 34.5-12.47 kV 12.5 MVA transformer with 15 kV metal clad switchgear to feed two new 12.47 kV circuits which tie to the upgraded Pinardville and Notre Dame substations as part of a multi-year reliability project on the west side of Manchester.
- Upon initial review, the project summary, justification, scope, and alternatives sections appeared to be sufficient; however, as noted in the Supplement Request Form discussed below, some critical cost elements were overlooked.
- The total authorized budget for the project, including direct and indirect costs, is \$2.7 million. This amount differs from the amounts provided in Attachment ELM-3 at Bates 1268. As the Commission stated in Order No. 26,122, Docket

1 No. DG 17-048 at 23: “Prior to commencing construction, however, the  
2 Commission expects a reasonable utility executive to make certain that projected  
3 costs are accurate and reasonable and have been appropriately evaluated.”

4 Supplement Request Form:

- 5 • This request is for \$1.3 million in additional funding (including direct and indirect  
6 costs).
- 7 • The justifications included additional costs for services “overlooked” in the  
8 original estimate including soil testing, soil removal, substation security, fencing  
9 and landscaping, easement acquisition, permitting, property taxes, and sound  
10 testing. Cost increases were also experienced for additional engineering related to  
11 design modifications resulting from a site walk-down conducted by the contractor  
12 engineer and for defective switchgear from the manufacturer.
- 13 • The section on “Actions to prevent recurrence” emphasized the need for project  
14 managers to closely monitor project expenditures in comparison with the  
15 authorized budget and to work more closely with project cost analysts to impede  
16 cost escalation. This section also states that “A proactive approach in controlling  
17 project costs is...imperative.” indicating that cost control measures were not a  
18 consideration in implementing this project. The Company personnel also  
19 recommended greater involvement by project managers in formulating initial  
20 budgets and scope of work was an additional recommendation.

21 Work Orders:

- 22 • Eversource did not provide the work orders for this project in response to Staff  
23 12-045. Eversource apparently enters all of the work order information into an

1 Excel spreadsheet and Eversource provided that spreadsheet in response to Staff  
2 16-9, Attachment Staff 16-009K containing a spreadsheet summary of all work  
3 orders.

- 4 • As noted above, in addition to the work order identification numbers and the  
5 amounts, the spreadsheet also contained accounting adjustments, coded entries,  
6 and nondescript entries making it difficult for Staff to precisely trace and verify  
7 the actual costs assigned to the project leading up to the variance.
- 8 • Upon review the spreadsheet shows the final project cost to be \$4,009,770 which  
9 conflicts with Attachment ELM-3 Column J which shows the total cost to be  
10 \$3,969,115.

11 Project Reviews Performed by Eversource Enterprise Risk Management Group:

- 12 • This project was not subject to the review of this committee.

13 Project Reviews Performed by the Financial Planning and Analysis Group:

- 14 • The reviews were not provided as requested in Staff 12-045.

15 Project Reviews & Approvals by the Project Authorization Committee:

- 16 • The meeting minutes provided by Eversource indicate that the Committee was  
17 aware of the cost overruns but does not mention any concerns or corrective  
18 actions other than recommending the attachment of a “Lessons learned that  
19 details what was learned to prevent recurrence.”

20 **Staff’s Conclusions & Recommendations:**

21 Staff found the initial justification for the project reasonable in terms of known obsolescence  
22 involving the asset condition of the some of the components of the substation and the need for  
23 related upgrades. In addition, Staff agrees that the defective manufacturing involving the  
24

1 switchgear was unknowable and unforeseen by Eversource at the time the Company estimated  
2 the project. However, after reviewing all of the essential cost components that were missed  
3 during the initial engineering and estimating phase of the project (as detailed in the Supplement  
4 Request Form), and the resultant cost escalations totaling \$1.25 million, Staff finds this to be  
5 additional evidence of a flawed scoping and planning process at Eversource. Again, Staff  
6 presumes that Eversource engineers possess a high level of expertise and experience in  
7 performing project cost estimates and that those estimates should be reasonably accurate;  
8 however, like most of the other projects included in Staff’s review, many cost elements were  
9 missed during the original scoping stage of the project. As the Commission has recently held  
10 “Prudent decisions cannot be made if significant, foreseeable cost elements of a project are over  
11 looked at the outset and meaningful re-examination of costs does not take place during project  
12 execution, as costs increase.”<sup>23</sup>  
13 In addition, it appears that no attempts at cost containment were implemented during the  
14 construction phase as indicated by the recommendations contained in the Supplement Request  
15 Form. In response to Staff TS 2-053, Eversource claims the project was monitored monthly  
16 during the Distribution Capital Review meetings, however, “cost controls” resulting from those  
17 meetings did not appear to involve anything beyond budget forecasts, cost reviews, and updates  
18 to project financials. Staff believes a judicious project manager would have been more diligent  
19 and forward-looking in considering the various cost components and possible alternatives that  
20 could impact the project, and that the site walk-downs should have informed that process, thus  
21 producing a scope document and cost estimate that would have been more comprehensive and  
22 complete. Instead, as the documentation indicates, Eversource’s contract engineers had to

<sup>23</sup> See *Liberty Utilities*, Order No. 26,377 at 9 (June 30, 2020)

1 devote much of their time to re-engineering the project during the construction phase thus adding  
2 to the costs. Because the evidence demonstrates that the Company overlooked significant,  
3 foreseeable project costs at the outset, that management's review and oversight of the project  
4 was severely flawed, and that the Company has failed to meet its burden of demonstrating that its  
5 decision making was prudent, Staff recommends that the Commission disallow all of the costs  
6 over and above the original estimate of \$2.7 million, except for unforeseen costs associated with  
7 the defective switchgear totaling \$18,000 (see Staff TS 2-053 b), resulting in a total disallowance  
8 of \$1.23 million.

9

10 **2. Project #A16C10 Jackman – Replace Obsolete Equipment**

11 **Attachment JED-9**

12 **Budget: \$4,556,810 Actual: \$7,132,860**

13

14 **Budget v. Actual: \$2,576,050 (56% variance)**

15 **Recommended Disallowance: \$2,491,663 (see below)**

16 Project Authorization Form:

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- This project involved the removal and replacement of obsolete oil circuit breakers as part of an obsolete equipment replacement program. The project also included removal of distribution equipment from a generation control house, replacement of electromechanical relays, reconfiguration of substation bus work, and construction of a new distribution control house.
- Upon initial review, the project summary, justification, scope, and alternatives sections appeared to be sufficient; however, as noted in the Supplement Request Form discussed below, many critical cost elements were overlooked.

- 1           • The total authorized cost of the project, including direct and indirect costs, was  
2           \$4.56 million. This amount differs from the amount provided in Attachment  
3           ELM-3, column F., at Bates 1268 by \$1.3 million. As the Commission stated in  
4           Order No. 26,122, Docket No. DG 17-048 at 23: “Prior to commencing  
5           construction, however, the Commission expects a reasonable utility executive to  
6           make certain that projected costs are accurate and reasonable and have been  
7           appropriately evaluated.”

8           Supplement Request Form:

- 9           • There were three Supplement Request Forms submitted for this project, the first  
10          dated January 31, 2017, the second dated February 9, 2017, and the third dated  
11          February 8, 2018. Both of the 2017 requests outline an additional amount of  
12          \$843,154 and the 2018 request is for an additional amount of \$1.775 million  
13          (including direct and indirect costs).
- 14          • The justifications provided in 2017 involved many cost elements that were  
15          overlooked in the original PAF estimate. Those elements included lack of  
16          available drawings, re-design of equipment, buried equipment not shown on  
17          drawings, “issued for construction” (IFC) drawings resulting in additional  
18          materials costs, contracting of a lead commissioning engineer, contaminated soil  
19          removal, contracting of an Owner’s Engineer, mobile substation costs, site  
20          security, station lighting, and lightning protection.
- 21          • No “Lessons Learned” section nor an “Actions to prevent recurrence” section was  
22          included in the 2017 form.



- 1           • The justifications provided in 2018 involved costs associated with the hiring (and  
2           replacement) of an engineering contractor (Altran) that lacked sufficient  
3           experience, additional and substantial on-site engineering, property taxes, and  
4           substantial under-estimation of indirect costs and AFUDC.
- 5           • Like the 2017 forms, no “Lessons Learned” section nor an “Actions to prevent  
6           recurrence” section was included in the 2018 form.

7           Work Orders:

- 8           • Eversource did not provide the individual work orders for this project in response  
9           to Staff 12-045 despite the fact that the PAF states “A total of ten (10) substation  
10          project work orders have been written under this project.” Later, in response to  
11          Staff 16-9, the Company provided Attachment Staff 16-009L containing a  
12          spreadsheet summary of all work orders.
- 13          • As noted above, in addition to the work order identification numbers and the  
14          amounts, the spreadsheet also contained accounting adjustments, coded entries,  
15          and nondescript entries making it difficult for Staff to precisely trace and verify  
16          the actual costs assigned to the project leading up to the variance.
- 17          • The spreadsheet shows the final project cost to be \$7,132,860 which conflicts  
18          with Attachment ELM-3 Column J which shows the total cost to be \$7,151,858

19          Project Reviews Performed by Eversource Enterprise Risk Management Group:

- 20          • This project was not subject to the review of this committee.

21          Project Reviews Performed by the Financial Planning and Analysis Group:

- 22          • The reviews were not provided as requested in Staff 12-045.

23

1           Project Reviews & Approvals by the Project Authorization Committee:

- 2           • The meeting minutes and documented approvals by the Committee were not  
3           provided by Eversource as requested in Staff 12-045.

4           Staff's Conclusions & Recommendations:

5           Like many of the projects reviewed in Staff's sample, Staff found the initial justification for the  
6           project reasonable in terms of known obsolescence involving asset condition and the fact that  
7           many of the upgrades and additions were driven by Eversource's subsequent divestiture of its  
8           generation assets. However, after reviewing all of the essential cost components that were missed  
9           during the initial engineering and estimating phase of the project, despite several site visits  
10          conducted by Eversource engineers (see Data Response TS 2-054a included in Attachment JED-  
11          9), and the resultant cost escalations totaling \$2.6 million, Staff finds this to be additional  
12          evidence of a flawed scoping and planning process at Eversource. Staff understands that much  
13          of the additional costs experienced in 2018 were the result of hiring a new engineering  
14          contractor, Altran, with which Eversource had little previous working experience. However,  
15          Staff presumes that a large utility like Eversource utilizes a rigorous vetting and monitoring  
16          process that would reasonably mitigate and prevent this type of risk, especially involving large  
17          and complex projects such as Jackman. Nevertheless, as the project documents show, project  
18          designs created by Altran did not meet Eversource's standards and Altran's inability to complete  
19          the project according specifications was not discovered by the Company until the project was  
20          nearly complete in 2018 (see Data Response TS 2-054 a and b included in Attachment JED-9).  
21          Again, Staff presumes that Eversource engineers possess a high level of expertise and experience  
22          in performing project cost estimates and project management; however, like most of the other  
23          projects reviewed in Staff's sample, many cost elements were missed during the original scoping

1 phase of the project and diligent management during construction appeared to be absent.  
2 Prudent decisions cannot be made where significant, foreseeable cost elements are overlooked at  
3 the outset of a project and are not subject to meaningful re-examination during project execution.  
4 In addition, although the Supplement Request Form outlines the primary cost drivers for the  
5 project, there is no discussion involving any attempts at cost containment by the Company. In  
6 response to Staff TS 2-054, Eversource claims the project was monitored monthly during the  
7 Distribution Capital Review meetings, however, “cost controls” resulting from those meetings  
8 did not appear to involve anything beyond budget forecasts, cost reviews, and updates to project  
9 financials. Staff believes a judicious project manager would have been more diligent and  
10 forward-looking in considering the various cost components and possible scenarios that could  
11 impact the project, thus producing a more accurate cost estimate and employing a more effective  
12 monitoring process once the project was underway. Instead, as the documentation indicates,  
13 Eversource’s engineering contractors had to devote much of their time to re-engineering the  
14 project during the construction phase substantially adding to the costs. Because the evidence  
15 shows that the Company overlooked significant, foreseeable project costs at the outset, that  
16 management’s review and oversight of the project was severely flawed, and that the Company  
17 has failed to meet its burden of demonstrating that its decision making was prudent, Staff  
18 recommends that the Commission disallow all of the costs over and above the original estimate  
19 of \$4.56 million, except for costs associated with unforeseen delays in scheduling outages for  
20 testing (estimated at \$84,387), resulting in a total disallowance of \$2.49 million.

21

22 **3. Project #A16E06 West Rye Substation Rebuild Attachment JED-10**

23

24 **Budget: \$1,304,000 Actual: \$2,698,369**

1                   **Budget v. Actual: \$1,394,369 (107% variance)**

2                   **Recommended Disallowance: \$1,394,369**

3                   Project Authorization Form:

- 4                   • This project involved the removal and replacement of two 1.5 MVA transformers  
5                   and related switchgear that have exceeded their life expectancy (1950's) for  
6                   which replacement parts are no longer available. The obsolete transformers and  
7                   switchgear were to be replaced by a new 10 MVA transformer, three new  
8                   reclosers, and distribution automation converting the substation to a 34.5kV –  
9                   12kV substation.
- 10                  • Upon initial review, the project summary, justification, scope, and alternatives  
11                  sections appeared to be sufficient; however, as noted in the Supplement Request  
12                  Form discussed below, many critical cost elements were overlooked.
- 13                  • The original authorized budget for the project, including direct and indirect costs,  
14                  was estimated at \$1.3 million. The total direct costs were \$1.04 million.

15                  Supplement Request Form:

- 16                  • There were three Supplement Request Forms submitted for this project, the first  
17                  dated July 3, 2017, the second dated November 28, 2017, and the third dated  
18                  April 10, 2018. The June 3 request indicates an increase of \$286,000 and the  
19                  November 28 request shows an increase of \$712,385. The April 10 request  
20                  provides an increase of \$364,000 for total combined increase in project costs of  
21                  \$1.36 million (including direct and indirect costs).
- 22                  • The justifications provided in July 3, 2017 form involved many cost elements that  
23                  were overlooked in the original PAF estimate. Those elements included hiring an

1 engineering contractor, undertaking several revisions to the site design, and  
2 failure to consider station service, site expansion, fencing, grounding, and stoning  
3 in the original estimate.

- 4 • The justifications provided in the November 28, 2017 form involved “significant  
5 oversight” in estimating construction costs in the July 3 request which did not  
6 consider costs for testing and commissioning, ROW clearing, environmental  
7 monitoring, and additional materials. Eversource attributes this oversight to the  
8 fact that the July 3 request was “apparently” written by someone who was not the  
9 project manager and the oversight went undetected during the monthly meetings.
- 10 • No “Lessons Learned” section nor an “Actions to prevent recurrence” section was  
11 included in the 2017 forms.
- 12 • The justifications provided in 2018 involved costs associated with “engineering  
13 deficiencies (both internal and external),” poor fit of structural steel and other  
14 materials due to multiple design changes, addition of animal protection, and  
15 wiring discrepancies.
- 16 • The 2018 form included an “Actions to prevent recurrence” section which  
17 highlighted the importance of the project manager “being more involved in the  
18 estimates created by Engineering as well as scope of work for projects,” and “the  
19 importance of monitoring the status of planned project spend and comparing  
20 against the authorized budget..”

21 Work Orders:

- 22 • Eversource did not provide the work orders for this project in response to Staff  
23 12-045. Eversource apparently enters all of the work order information into an

1 Excel spreadsheet and Eversource provided that spreadsheet in response to Staff  
2 16-9, Attachment Staff 16-009M containing a spreadsheet summary of all work  
3 orders.

- 4 • As noted above, in addition to the work order identification numbers and the  
5 amounts, the spreadsheet also contained numerous accounting adjustments, coded  
6 entries, and nondescript entries making it difficult for Staff to precisely trace and  
7 verify the actual costs assigned to the project leading up to the variance.
- 8 • Upon review the spreadsheet shows the final project cost to be \$3,190,715 which  
9 conflicts with Attachment ELM-3 Column J which shows the total cost to be  
10 \$2,698,369.

11 Project Reviews Performed by Eversource Enterprise Risk Management Group:

- 12 • This project was not subject to the review of this committee.

13 Project Reviews Performed by the Financial Planning and Analysis Group:

- 14 • The reviews were not provided as requested in Staff 12-045.

15 Project Reviews & Approvals by the Project Authorization Committee:

- 16 • The meeting minutes and documented approvals by the Committee were not  
17 provided by Eversource as requested in Staff 12-045.

18 **Staff's Conclusions & Recommendations:**

19 Again, like many of the projects reviewed by Staff, the initial justification for the project  
20 reasonable in terms of known obsolescence involving asset condition. However, after reviewing  
21 all of the essential cost components that were missed during the initial engineering and  
22 estimating phase of the project (as detailed in the Supplement Request Forms), and the resultant  
23 cost escalations totaling \$1.4 million, Staff finds this to be additional evidence of a flawed

1 scoping and planning process at Eversource. Staff presumes that Eversource engineers possess a  
2 high level of expertise and experience in performing project cost estimates and project  
3 management; however, like most of the other projects reviewed by Staff, many cost elements  
4 were overlooked during the original scoping phase of this project, and during a subsequent  
5 review (2017). In addition, diligent management during the construction phase appeared to be  
6 absent. Although the Supplement Request Forms outline the primary cost drivers for the project,  
7 there is no discussion involving cost containment by the Company until the filing of the form on  
8 November 28 when the project was near completion (estimated completion was April 1, 2018).  
9 Staff believes a judicious project manager would have been more diligent and forward-looking in  
10 considering the various cost components and possible scenarios that could impact the project,  
11 thus producing a more accurate cost estimate and employing a more effective monitoring process  
12 once the project was underway. Instead, as the documentation indicates, Eversource's engineers  
13 and engineering contractors had to devote much of their time to re-engineering the project during  
14 the construction phase substantially adding to the costs. Because the evidence demonstrates that  
15 the Company overlooked significant, foreseeable project costs at the outset, that management's  
16 oversight and review of the project was severely flawed, and that the Company has failed to meet  
17 its burden of demonstrating that its decision making was prudent, Staff recommends that the  
18 Commission disallow all of the costs over and above the original estimate of \$1.304 million,  
19 resulting in a total disallowance of \$1.4 million.

20 **4. Project #A18E16 West Road Overload Attachment JED-11**

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22 **Budget: \$746,000 Actual: \$1,408,801**

23 **Budget v. Actual: \$662,801 (88% variance)**

24 **Recommended Disallowance: \$662,801**

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Project Authorization Form:

- This project involved the elimination of a set of overloaded 500kV stepdown transformers by converting the radially fed area from 12.47kV to 34.5kV. In addition, two new 34.5kV circuit ties were to be installed to bypass 12 sections that are located in tidal saltmarshes that are inaccessible by truck.
- Upon initial review, the project summary, justification, scope, and alternatives sections appeared to be sufficient; however, as noted in the Supplement Request Form discussed below, many critical cost elements were overlooked.
- The total cost of the project, including direct and indirect costs, was estimated at \$746,000. The total direct costs were \$536,000.

Supplement Request Form:

- This request for supplemental funding is in the amount of \$682,000 (including direct and indirect costs) essentially doubling the original authorized budget of the project from \$746,000 to \$1.428 million.
- The form was dated January 26, 2019, approximately six months after the projected in-service date of June 2018. This delay in filing is contrary to the requirement for timely submission and approval as provided in the APS-1. Based on Staff’s review of Eversource’s project authorization policy, the apparent intent of the form as described is to alert management to cost overruns during the course of the project either before or at the time the changes occur. This after-the-fact notification undermines the purpose of the form.



- 1           • The justifications provided in the form involved significant underestimation of the  
2           man-hours needed to complete the job. Eversource's work management system  
3           had initially estimated 1,900 hours of labor whereas the project contractors  
4           estimated 4,500 hours. This increase was apparently overlooked since the work  
5           management system was never updated to re-estimate the job. In addition, costs  
6           for materials and overheads were substantially underestimated and permitting and  
7           traffic conditions within the City of Portsmouth contributed to the added costs.
- 8           • No "Lessons Learned" section nor an "Actions to prevent recurrence" section was  
9           included in the form.

10           Work Orders:

- 11           • Eversource did not provide the work orders for this project in response to Staff  
12           12-045. Eversource apparently enters all of the work order information into an  
13           Excel spreadsheet and Eversource provided that spreadsheet in response to Staff  
14           16-9, Attachment Staff 16-009N containing a spreadsheet summary of all work  
15           orders.
- 16           • As noted above, in addition to the work order identification numbers and the  
17           amounts, the spreadsheet also contained numerous accounting adjustments, coded  
18           entries, and nondescript entries making it difficult for Staff to precisely trace and  
19           verify the actual costs assigned to the project leading up to the variance.
- 20           • Upon review the spreadsheet shows the final project cost to be \$1,430,363 which  
21           conflicts with Attachment ELM-3 Column J which shows the total cost to be  
22           \$1,408,801.

1           Project Reviews Performed by Eversource Enterprise Risk Management Group:

- 2           • This project was not subject to the review of this committee.

3           Project Reviews Performed by the Financial Planning and Analysis Group:

- 4           • The reviews were not provided as requested in Staff 12-045.

5           Project Reviews & Approvals by the Project Authorization Committee:

- 6           • The meeting minutes and documented approvals by the Committee were not  
7           provided by Eversource as requested in Staff 12-045.

8           **Staff's Conclusions & Recommendations:**

9           Staff found the initial justification for the project reasonable in terms of asset condition, potential  
10          overloading, and planned road widening by the City of Portsmouth. However, after reviewing  
11          all of the essential cost components that were missed during the initial engineering and  
12          estimating phase of the project (as detailed in the Supplement Request Form), and the resultant  
13          cost escalations totaling \$682,000 (\$662,801 final), Staff finds this to be additional evidence of a  
14          flawed scoping and planning process at Eversource. Staff presumes that Eversource engineers  
15          possess a high level of expertise and experience in performing project cost estimates and project  
16          management; however, like most of the other projects reviewed by Staff, many cost elements  
17          were overlooked during the original scoping phase of this project. Staff finds that most of these  
18          cost elements were foreseeable during this phase, in particular the cost escalations associated  
19          with labor costs and the potential complications involved with conducting a project in the City of  
20          Portsmouth. In addition, although the Supplement Request Form outlines the primary cost  
21          drivers for the project, there is no discussion involving cost containment and, contrary to the  
22          Company's own procedures, the request for approval of increased costs was submitted after  
23          completion of the project, precluding any meaningful re-examination of the cost increases. Staff

1 believes a judicious project manager would have been more diligent and forward-looking in  
2 considering the various cost components and possible scenarios that could impact the project,  
3 thus producing a more accurate cost estimate and employing a more effective monitoring process  
4 once the project was underway. Instead, as the documentation indicates, Eversource engineers  
5 and project managers dealt with these added costs as they arose during the construction phase.  
6 Because the evidence demonstrates that the Company overlooked significant, foreseeable project  
7 costs at the outset, that management's oversight and review of the project was severely flawed,  
8 and that the Company has failed to meet its burden of demonstrating that its decision making was  
9 prudent, Staff recommends that the Commission disallow all of the costs over and above the  
10 original estimate of \$746,000, resulting in a total disallowance of \$662,801.

11

12 **5. Project #A07X45 Reject Pole Replacement Attachment JED-12**

13 **Budget: \$850,000 Actual: \$1,962,868**

14 **Budget v. Actual: \$1,112,868 (131% variance)**

15 **Recommended Disallowance: \$1,112,868**

16 Project Authorization Form:

- 17
- 18 • This project involves the annual inspection of wood poles in Eversource's  
19 maintenance territory and the replacement of poles deemed to be "rejects." As a  
20 result of the 2016 pole inspection program, 1,386 poles were identified as  
21 deficient based on Eversource's pole inspection criteria. Eversource utilizes a 10-  
22 year inspection cycle.
  - 23 • The annual inspection typically identifies between 300 and 500 poles that require  
replacement, however, the "dramatic increase is the result of a business decision

1 to replace poles that would have previously been braced or restored until the next  
2 inspection occurred 10 years later.”

- 3 • Upon initial review, the project summary, justification, scope, and alternatives  
4 sections appeared to be sufficient; however, no explanation was provided as to  
5 why Eversource decided to ignore its own pole inspection criteria in this instance.
- 6 • The total cost of the project, including direct and indirect costs, was estimated at  
7 \$850,000. The total direct costs are \$634,000.

8 Supplement Request Form:

- 9 • This request for supplemental funding is in the amount of \$1.113 million  
10 (including direct and indirect costs) more than doubling the cost estimate of the  
11 project from \$850,000 to \$1.963 million.
- 12 • The form was dated January 25, 2019, approximately one month after the  
13 completion date of December 2018. This delay in filing is contrary to the  
14 requirement for timely submission and approval as provided in the APS-1. Based  
15 on Staff’s review of Eversource’s project authorization policy, the apparent intent  
16 of the form as described is to alert management to cost overruns during the course  
17 of the project either before or at the time the changes occur. This after-the-fact  
18 notification undermines the purpose of the form.
- 19 • The justifications provided in the form were identical to those outlined in the  
20 PAF, i.e. the failure rate from the inspection (4 percent) was much higher than the  
21 average (1.5 to 2 percent) resulting in the rejection of 1,386 poles. Although the  
22 number of reject poles remained the same as included in the original PAF  
23 estimate, no specifics or details were provided to explain the significant escalation

1 in costs of \$1.113 million or why the factors driving the increase were overlooked  
2 in the initial estimate.

- 3 • No “Lessons Learned” section nor an “Actions to prevent recurrence” section was  
4 included in the form.

5 Work Orders:

- 6 • Eversource did not provide the individual work orders for this project in response  
7 to Staff 12-045. Eversource apparently enters all of the work order information  
8 into an Excel spreadsheet and Eversource provided that spreadsheet in response to  
9 Staff 16-9, Attachment Staff 16-009A containing a spreadsheet summary of all  
10 work orders. Note: Attachment Staff 16-009A and Attachment Staff 16-009C are  
11 duplicate filings.
- 12 • As noted above, in addition to the work order identification numbers and the  
13 amounts, the spreadsheet also contained accounting adjustments, coded entries,  
14 and nondescript entries making it difficult for Staff to precisely trace and verify  
15 the actual costs assigned to the project leading up to the variance.
- 16 • Upon review the spreadsheet shows the final project cost to be \$2,423,396 which  
17 conflicts with Attachment ELM-3 Column J which shows the total cost to be  
18 \$1,962,868.

19 Project Reviews Performed by Eversource Enterprise Risk Management Group:

- 20 • This project was not subject to the review of this committee.

21 Project Reviews Performed by the Financial Planning and Analysis Group:

- 22 • The reviews were not provided as requested in Staff 12-045.

23 Project Reviews & Approvals by the Project Authorization Committee:

- 1           • The meeting minutes and documented approvals by the Committee were not  
2           provided by Eversource as requested in Staff 12-045, even though the  
3           Supplement Request Form states that “Additional investment in reject pole  
4           replacement was monitored and approved by the capital budget review  
5           committee during monthly project meetings.”

6           **Staff’s Conclusions & Recommendations:**

7           Staff found the initial justification for the project reasonable in terms of the asset condition of  
8           some of the poles discovered during the annual inspection, and because this is part of standard  
9           business practices at Eversource and other electric utilities. However, Staff is troubled by the  
10          fact that the “dramatic increase” in reject poles apparently resulted from a “business decision” to  
11          deviate from Eversource’s policy and procedure involving reject pole replacement. According to  
12          the Eversource Maintenance Program, Document 6.61A Rev. 3, Wood Pole Restoration,  
13          Guidelines for Reject Pole Replacement, reject poles are first categorized as “Priority Reject” or  
14          “Normal Reject.” Priority reject poles are poles that are hollowing or are in imminent danger of  
15          falling. Normal reject poles are poles that have experienced a reduced circumference at 67  
16          percent of original circumference but are not deteriorated enough to be classified as Priority.  
17          Under the guidelines, a Normal reject pole must be evaluated for the potential of extending its  
18          useful life until the next inspection cycle. If a Normal reject pole is deemed salvageable, it must  
19          be restored or braced according to several methods outlined in the “Pole Restoration” section.  
20          According the PAF referenced above, Eversource chose to sidestep its own restoration guidelines  
21          for these types of poles resulting in a significant cost increase for this project. Again, no  
22          justification was provided by Eversource to support this deviation from its policy or explain why  
23          restoration efforts were not appropriate or economic in this instance. Moreover, the Supplement

1 Request Form was submitted after completion of the project, preventing any meaningful re-  
2 examination and approval of the cost increases. Because the evidence demonstrates that the  
3 Company failed to follow its own internal process for pole replacements, that management's  
4 oversight and review of the project was severely flawed, and that the Company has failed to meet  
5 its burden of demonstrating that its decision making was prudent, Staff recommends that the  
6 Commission disallow all of the costs over and above the original estimate of \$850,000, resulting  
7 in a total disallowance of \$1.1 million.

8

9 **2017 Capital Projects**

10

11 **1. Project #A16C01 3271 Line Re-conductor Attachment JED-13**

12 **Budget: \$1,096,573 Actual: \$2,458,566**

13 **Budget v. Actual: \$1,361,993 (124% variance)**

14 **Recommended Disallowance: \$1,361,993**

15 **Project Authorization Form:**

16 • This project involved the re-conductoring and upgrade of a 2.66 mile section of  
17 the 3271 line between Weare Substation and Greggs Substation to help support  
18 load in the Rimmon area of Manchester, allow removal of obsolete equipment at  
19 Greggs Substation, and develop a major tie between the two substations.

20 • Upon initial review, the project summary, justification, scope, and alternatives  
21 sections appeared to be sufficient; however, as noted in the Supplement Request  
22 Form discussed below, many critical cost elements were overlooked.

23 • The total cost of the project, including direct and indirect costs, was estimated at  
24 \$1.1 million. The total direct costs are \$771,000.

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Supplement Request Form:

- This request for supplemental funding is in the amount of \$1.4 million (including direct and indirect costs) essentially more than doubling the original authorized budget for the project from \$1.1 million to \$2.5 million.
- The justifications provided in the form involved significant underestimation of certain cost elements of the project including changing the design from open wire to bundled Hendrix tree wire (\$352,000) and contracting outside services for wetland permitting, mitigation plans, line construction, wetland matting, and tree clearing (\$960,000). Commitments to abutting property owners for an access easement and failure to consider hazardous trees and compliance with DES and Army Corps of Engineers requirements also added to the cost escalations (\$168,000).
- No “Lessons Learned” section nor an “Actions to prevent recurrence” section was included in the form.

Work Orders:

- Eversource did not provide the individual work orders for this project in response to Staff 12-045. Eversource apparently enters all of the work order information into an Excel spreadsheet and Eversource provided that spreadsheet in response to Staff 16-9, Attachment Staff 16-009J containing a spreadsheet summary of all work orders.



- 1 • As noted above, in addition to the work order identification numbers and the  
2 amounts, the spreadsheet also contained accounting adjustments, coded entries,  
3 and nondescript entries making it difficult for Staff to precisely trace and verify  
4 the actual costs assigned to the project leading up to the variance.
- 5 • The spreadsheet shows the final project cost to be \$2,427,609 which conflicts  
6 with Attachment ELM-3 Column J which shows the total cost to be \$2,458,566.

7 Project Reviews Performed by Eversource Enterprise Risk Management Group:

- 8 • This project was not subject to the review of this committee.

9 Project Reviews Performed by the Financial Planning and Analysis Group:

- 10 • The reviews were not provided as requested in Staff 12-045.

11 Project Reviews & Approvals by the Project Authorization Committee:

- 12 • The meeting minutes and documented approvals by the Committee were not  
13 provided by Eversource as requested in Staff 12-045.

14 **Staff's Conclusions & Recommendations:**

15 Staff found the initial justification for the project reasonable in terms of asset condition and  
16 potential overloading. However, after reviewing all of the essential cost components that were  
17 missed during the initial engineering and estimating phase of the project (as detailed in the  
18 Supplement Request Form), and the resultant cost escalations totaling \$1.36 million, Staff finds  
19 this to be additional evidence of a flawed scoping and planning process at Eversource. Staff  
20 presumes that Eversource engineers possess a high level of expertise and experience in  
21 performing project cost estimates and project management; however, like most of the other  
22 projects reviewed by Staff, many cost elements were overlooked during the original scoping  
23 phase of this project. Staff believes that most of these cost elements were foreseeable during this

1 phase, in particular the cost escalations associated with Hendrix tree wire and the need of  
2 additional outside services. It is unknown whether or not Eversource engineers conducted a site  
3 visit during the initial design and scoping phase of the project and Eversource provided no  
4 justification for the necessity of the design changes noted in the Supplement Request Form. In  
5 addition, although the Supplement Request Form outlines the primary cost drivers for the  
6 project, there is no discussion involving cost containment or whether or not the increased costs  
7 were a concern. Staff believes a judicious project manager would have been more diligent and  
8 forward-looking in considering the various cost components and possible scenarios that could  
9 impact the project, thus producing a more accurate cost estimate and employing a more effective  
10 monitoring process once the project was underway. Instead, as the documentation appears to  
11 indicate, Eversource engineers and project managers devoted much of their time to project re-  
12 design and acquisition of additional resources during the construction phase. Because the  
13 evidence demonstrates that the Company overlooked significant, foreseeable project costs at the  
14 outset, that management's oversight and review of the project was severely flawed, and that the  
15 Company has failed to meet its burden of demonstrating that its decision making was prudent,  
16 Staff recommends that the Commission disallow all of the costs over and above the original  
17 estimate of \$1.1 million, resulting in a total disallowance of \$1.36 million.

18  
19

**2. Project #NHRMTR17 NH Remote Disconnect 2017-2018**

20

**Attachment JED-14**

21

**Budget: \$918,793                      Actual: \$2,283,449**

22

**Budget v. Actual: \$1,364,656 (149% variance)**

23

**Recommended Disallowance: \$1,364,656**

24

1        Project Authorization Form:

- 2            • This project involved a corporate shared services project undertaken by  
3            Eversource electric utilities located in New Hampshire, Massachusetts and  
4            Connecticut to replace manually probed interval meters in NH, and  
5            electromechanical meters in MA and CT, with remote disconnect meters. A  
6            specific PAF for NH operations was not provided in the data response even  
7            though the Supplement Request Form indicates that one was created.
- 8            • Upon initial review, the project summary, justification, scope, and alternatives  
9            sections appeared to be sufficient.
- 10           • The project was originally scheduled as a two-year project to take place in 2017  
11           and 2018. The total cost of the project for 2017 was estimated at \$918,793 and  
12           \$316,825 in 2018, for a total overall cost of \$1.26 million.

13        Supplement Request Form:

- 14           • This request for supplemental funding is in the amount of \$1.06 million  
15           (including direct and indirect costs) essentially doubling the cost of the 2017  
16           project from \$918,793 to \$1.98 million.
- 17           • The justifications provided in the form involved a decision by Meter Operations  
18           to accelerate the project for completion in 2017 due to the availability of  
19           additional resources (meters, materials, and labor). Significant underestimation of  
20           the total costs to complete (\$1.26 million) appears to have resulted since the  
21           request exceeds the amount budgeted for 2018 (\$316,825) by \$750,000. Aside  
22           from Eversource's expressed desire to complete the project ahead of schedule, no  
23           details or additional support was provided for the cost increase of \$1.06 million.

- 1           • No “Lessons Learned” section nor an “Actions to prevent recurrence” section was  
2           included in the form.

3           Work Orders:

- 4           • Eversource did not provide the work orders for this project in response to Staff  
5           12-045. Eversource apparently enters all of the work order information into an  
6           Excel spreadsheet and Eversource provided that spreadsheet in response to Staff  
7           16-9, Attachment Staff 16-009R containing a spreadsheet summary of all work  
8           orders.
- 9           • As noted above, in addition to the work order identification numbers and the  
10          amounts, the spreadsheet also contained accounting adjustments, coded entries,  
11          and nondescript entries making it difficult for Staff to precisely trace and verify  
12          the actual costs assigned to the project leading up to the variance.
- 13          • Upon review the spreadsheet shows the final project cost to be \$2,283,449 which  
14          matches the total cost shown on Attachment ELM-3 Column J.

15          Project Reviews Performed by Eversource Enterprise Risk Management Group:

- 16          • This project was not subject to the review of this committee.

17          Project Reviews Performed by the Financial Planning and Analysis Group:

- 18          • The reviews were not provided as requested in Staff 12-045.

19          Project Reviews & Approvals by the Project Authorization Committee:

- 20          • The meeting minutes and documented approvals by the Committee were not  
21          provided by Eversource as requested in Staff 12-045.

22

23

1 **Staff's Conclusions & Recommendations:**

2 Staff found the initial justification for the project reasonable in terms of asset condition and  
3 potential cost savings in O&M resulting from replacement of the manually probed meters.  
4 However, because of the lack of details in the Supplement Request Form, no insight was  
5 provided on the necessity of the cost overrun of \$1.06 million or why acceleration of the project  
6 in 2017 was a determining factor. Staff finds this to be additional evidence of a flawed scoping  
7 and planning process at Eversource. As a result, because the evidence does not provide a  
8 justification for the additional cost increases and Eversource failed to provide documentary  
9 evidence supporting the prudence of the significant cost increase, Staff recommends that the  
10 Commission disallow all of the costs over and above the original estimate of \$918,793, resulting  
11 in a total disallowance of \$1.365 million.

12  
13 **3. Project #DL9R Distribution ROW Annual Attachment JED-15**  
14 **Budget: \$1,644,500 Actual: \$2,379,966**  
15 **Budget v. Actual: \$735,466 (48% variance)**  
16 **Recommended Disallowance: \$735,466**

17 **Project Authorization Form:**

- 18
- 19 • This project involves an annual Eversource program that covers planned  
20 replacement of equipment in distribution right of ways. Two separate PAF's  
21 were provided by Eversource: a standard PAF and a Technical Authorization  
22 Form.
  - 23 • Upon initial review, the project summary, justification, scope, and alternatives  
24 sections appeared to be sufficient in terms of this project constituting an annual  
ongoing program.

- 1           • The total cost of the project was estimated at \$1.644 million in both PAF forms.  
2           Annual expenditure estimates for this project are based on historical spending and  
3           known spending levels.

4           Supplement Request Form:

- 5           • This request for supplemental funding is in the amount of \$711,600 (including  
6           direct and indirect costs) increasing the authorized budget amount of the project  
7           from \$1.644 million to \$2.36 million.
- 8           • The justifications provided in the form involved “more work being performed on  
9           the system than anticipated” related to 115 pole replacements and 32 cross arm or  
10          brace repairs, and repairs to insulators and overhead lines. Aside from  
11          Eversource’s expressed desire to improve reliability, no details or additional  
12          support was provided for the requested cost increase of \$711,600.
- 13          • No “Lessons Learned” section nor an “Actions to prevent recurrence” section was  
14          included in the form.

15          Work Orders:

- 16          • Eversource did not provide the work orders for this project in response to Staff  
17          12-045. Eversource apparently enters all of the work order information into an  
18          Excel spreadsheet and Eversource provided that spreadsheet in response to Staff  
19          16-9, Attachment Staff 16-009Q containing a spreadsheet summary of all work  
20          orders.
- 21          • As noted above, in addition to the work order identification numbers and the  
22          amounts, the spreadsheet also contained accounting adjustments, coded entries,

1 and nondescript entries making it difficult for Staff to precisely trace and verify  
2 the actual costs assigned to the project leading up to the variance.

- 3 • Upon review the spreadsheet shows the final project cost to be \$2,380,580 which  
4 conflicts with Attachment ELM-3 Column J which shows the total cost to be  
5 \$2,379,966.

6 Project Reviews Performed by Eversource Enterprise Risk Management Group:

- 7 • This project was not subject to the review of this committee.

8 Project Reviews Performed by the Financial Planning and Analysis Group:

- 9 • The reviews were not provided as requested in Staff 12-045.

10 Project Reviews & Approvals by the Project Authorization Committee:

- 11 • The meeting minutes and documented approvals by the Committee were provided  
12 by Eversource but contained no additional details related to the project.

13 **Staff's Conclusions & Recommendations:**

14 Staff found the initial justification for the project reasonable in terms of continuing and ongoing  
15 efforts to address asset condition in the distribution right of way as part of an annual program.  
16 However, the lack of details in the Supplement Request Form provided no explanation of the  
17 need for the requested cost increase of \$711,600 or why the increase was out of trend given that  
18 the annual cost estimates are based on historical spending. In addition, no commentary was  
19 provided to account for or support the additional expenditure of \$23,866 leading to the final total  
20 cost amount of \$2.4 million. Vague generalizations such as costs were higher than originally  
21 budgeted does not serve as an adequate analysis and justification for a significant cost increase.  
22 Because Eversource did not provide any documentary evidence supporting the cost increase and  
23 failed to demonstrate that the additional expenditures were prudent, Staff recommends that the

1 Commission disallow all of the costs over and above the original estimate of \$1.644 million,  
2 resulting in a total disallowance of \$735,466.

3

4 **2016 Capital Projects**

5 **1. Project #A15N01 Convert Laconia 4kV to 12.47kV Attachment JED-16**

6 **Budget: \$1,123,000 Actual: \$2,465,701**

7 **Budget v. Actual: \$1,342,701 (84% variance)**

8 **Recommended Disallowance: \$1,342,701**

9 **Project Authorization Form:**

- 10
- 11 • This project involved the final phase of converting the Laconia area from 4kV to  
12 12kV to retire old equipment and create an interconnected 12kV system with  
13 other circuits and substations pursuant to the findings of the Laconia Area  
14 Distribution System Study. This project converted the two remaining 4kV  
15 circuits (38H1 and 38H3) to 12kV allowing for the retirement of the existing 4kV  
16 substation equipment at the Messer Street Substation.
  - 17 • Upon initial review, the project summary, justification, scope, and alternatives  
18 sections appeared to be sufficient; however, as noted in the Supplement Request  
19 Form discussed below, problems with project management and oversight  
20 contributed to substantial cost increases.
  - 21 • The total authorized cost of the project, including direct and indirect costs, was  
22 estimated to be \$1.123 million.
- 23



1           Supplement Request Form:

- 2           • The Supplement Request Form requests an additional amount of \$1.336 million  
3           (including direct and indirect costs) nearly doubling the original cost estimate of  
4           \$1.123 million.
- 5           • The form was dated October 29, 2018, approximately one year after the  
6           completion of the project in 2017. This excessive delay in filing is contrary to the  
7           requirement for timely submission and approval as provided in the APS-1. Based  
8           on Staff’s review of Eversource’s project authorization policy, the apparent intent  
9           of the form as described is to alert management to cost overruns during the course  
10          of the project either before or at the time the changes occur. This after-the-fact  
11          notification undermines the purpose of the form.
- 12          • The justification involved “higher than anticipated contracted outside service  
13          costs” primarily driven by a decision of Eversource’s Construction Rep to replace  
14          many of the existing poles during the course of the project by upgrading the poles  
15          from Class 3 to Class 2 resulting in delays and additional costs totaling  
16          approximately \$1.1 million. These pole replacements were not contemplated in  
17          the original estimate. Staff’s understanding of this occurrence, based on  
18          information provided by Eversource at the October 29, 2019 technical session and  
19          in response to Staff TS 2-063, was that the Construction Rep acted unilaterally in  
20          response to recommendations made by the contractor involving the pole  
21          condition. Eversource represented that the Construction Rep was later terminated  
22          prior to completion of the project.

- 1           • No “Lessons Learned” section nor an “Actions to prevent recurrence” section was  
2 included in the form; however, the “Justification” section states: “Project controls  
3 have been put in place to monitor funding at monthly T&D capital project  
4 meetings. This will provide the necessary controls to address the need for  
5 supplements in a timely manner.”

6           Work Orders:

- 7           • Eversource did not provide the individual work orders for this project in response  
8 to Staff 12-045. Eversource apparently enters all of the work order information  
9 into an Excel spreadsheet and Eversource provided that spreadsheet in response to  
10 Staff 16-9, Attachment Staff 16-009G containing a spreadsheet summary of all  
11 work orders.
- 12           • As noted above, in addition to the work order identification numbers and the  
13 amounts, the spreadsheet also contained accounting adjustments, coded entries,  
14 and nondescript entries making it difficult for Staff to precisely trace and verify  
15 the actual costs assigned to the project leading up to the variance.
- 16           • The spreadsheet shows the final project cost to be \$2,643,839 which conflicts  
17 with Attachment ELM-3 Column J which shows the total cost to be \$2,465,701.

18           Project Reviews Performed by Eversource Enterprise Risk Management Group:

- 19           • This project was not subject to the review of this committee.

20           Project Reviews Performed by the Financial Planning and Analysis Group:

- 21           • The reviews were not provided as requested in Staff 12-045.

22           Project Reviews & Approvals by the Project Authorization Committee:

- 1 • The meeting minutes and documented approvals by the Committee were not  
2 provided by Eversource as requested in Staff 12-045.

3  
4 **Staff's Conclusions & Recommendations:**

5 Like many of the projects reviewed in Staff's sample, Staff found the initial justification for the  
6 project reasonable in terms of known obsolescence involving asset condition and the need for  
7 circuit and substation upgrades. However, after reviewing all of the essential cost components  
8 that were missed during the initial engineering and estimating phase, i.e. the potential for pole  
9 replacements (as detailed in the Supplement Request Form), and the resultant cost escalations  
10 totaling \$1.336 million, Staff finds this to be additional evidence of a flawed scoping, planning,  
11 and management process at Eversource. Staff understands that much of the additional costs  
12 experienced during the course of this project were the result of the unilateral decision making by  
13 Eversource's Construction Rep involving pole replacements. However, Staff presumes that a  
14 large utility like Eversource utilizes a rigorous vetting and monitoring process that would prevent  
15 or mitigate the risk of such occurrences. Nevertheless, as the Supplement Request Form  
16 indicates, and as represented by Eversource at the October 29 Technical Session (also see Staff  
17 TS 2-063b), although the decisions made by the Construction Rep were not approved in advance  
18 by Eversource, it does not appear that Eversource conducted appropriate oversight or  
19 management of the project. Again, Staff presumes that Eversource engineers possess a high  
20 level of expertise and experience in performing project cost estimates and project management;  
21 however, like most of the other projects reviewed in Staff's sample, critical cost elements were  
22 missed during the original scoping phase of the project and diligent management during  
23 construction, especially oversight of contractors, appeared to be absent. In addition, although the

1 Supplement Request Form references apparent “project controls” that have been put into place,  
2 this appears to be an after the fact response given that the form was dated a year after project  
3 completion (also see Staff TS 2-063a). Staff believes a judicious project manager would have  
4 been more diligent and forward-looking in considering the various cost components and possible  
5 scenarios that could impact the project, thus producing a more accurate cost estimate and  
6 employing a more effective monitoring process once the project was underway. Instead, there is  
7 no evidence that Eversource sufficiently monitored its contractor conducting the pole  
8 replacements and the associated costs, resulting in significant cost overruns. Because the  
9 evidence demonstrates that the Company overlooked significant, foreseeable project costs at the  
10 outset, that management’s oversight and review of the project was severely flawed, and that the  
11 Company has failed to meet its burden of demonstrating that its decision making was prudent,  
12 Staff recommends that the Commission disallow all of the costs over and above the original  
13 authorized budget amount of \$1.123 million resulting in a total disallowance of \$1.3 million.

14 **2. Project #DL9R Distribution ROW Annual Attachment JED-17**

15 **Budget: \$929,800 Actual: \$1,643,132**

16 **Budget v. Actual: \$713,332 (77% variance)**

17 **Recommended Disallowance: \$713,332**

18 Project Authorization Form:

- 19 • Unlike the Distribution ROW project for 2017 discussed above, the PAF  
20 submitted by Eversource for the 2016 project is very general in content and  
21 covers all annual distribution reliability projects. As a result, the initial budget  
22 amounts for this project were not provided except for the gross amount of \$2.7  
23 million that funds all replacements involving steel towers, oil filled switchgear,

1 degraded vault tops, poles, URD cables, etc. (The initial budget estimate of  
2 \$929,800 is provided in the Supplement Request Form referenced below.)

- 3 • Upon initial review, the project summary, justification, and scope sections  
4 appeared to be sufficient in terms of projects constituting an annual ongoing  
5 program, but at a very high level. No specific discussion or description of this  
6 ROW project was included.

7 Supplement Request Form:

- 8 • This request for supplemental funding is in the amount of \$713,300 (including  
9 direct and indirect costs) increasing the authorized budget amount of the project  
10 from \$929,800 to \$1.64 million.
- 11 • The justifications provided in the form involved “Higher than normal equipment  
12 failure and the majority of work completed by outside contractors...” No other  
13 details or additional support was provided for the cost increase of \$713,300.
- 14 • No “Lessons Learned” section nor an “Actions to prevent recurrence” section was  
15 included in the form.

16 Work Orders:

- 17 • Eversource did not provide the work orders for this project in response to Staff  
18 12-045. Eversource apparently enters all of the work order information into an  
19 Excel spreadsheet and Eversource provided that spreadsheet in response to Staff  
20 16-9, Attachment Staff 16-009P containing a spreadsheet summary of all work  
21 orders.
- 22 • As noted above, in addition to the work order identification numbers and the  
23 amounts, the spreadsheet also contained accounting adjustments, coded entries,

1 and nondescript entries making it difficult for Staff to precisely trace and verify  
2 the actual costs assigned to the project leading up to the variance.

- 3 • Upon review the spreadsheet shows the final project cost to be \$1,643,536 which  
4 conflicts with Attachment ELM-3 Column J which shows the total cost to be  
5 \$1,643,132.

6 Project Reviews Performed by Eversource Enterprise Risk Management Group:

- 7 • This project was not subject to the review of this committee.

8 Project Reviews Performed by the Financial Planning and Analysis Group:

- 9 • The reviews were not provided as requested in Staff 12-045.

10 Project Reviews & Approvals by the Project Authorization Committee:

- 11 • The meeting minutes and documented approvals by the Committee were not  
12 provided by Eversource as requested in Staff 12-04.

13 **Staff's Conclusions & Recommendations:**

14 Staff found the initial justification for the project reasonable in terms of continuing and ongoing  
15 efforts to address asset condition in the distribution right of way as part of a standard annual  
16 program. However, the lack of details in the Supplement Request Form provided no justification  
17 for the cost increase of \$713,300 or why equipment failure was higher than normal in 2016.  
18 Likewise, the Company's response to Staff TS 2-064 did not provide any information  
19 demonstrating the prudence of the Company's actions. Vague generalizations such as costs were  
20 higher than originally budgeted does not provide an adequate analysis for a significant cost  
21 increase. Because the evidence demonstrate that the Company failed to conduct a meaningful re-  
22 examination of the cost increases during the project execution and failed to provide  
23 documentation or evidence to prove its actions were prudent, Staff recommends that the

1 Commission disallow all of the costs over and above the original authorized amount of \$929,800,  
2 resulting in a total disallowance of \$713,332.

3 **2015 Capital Projects**

4 **1. Project #R15RPR Reject Poles Replacement Attachment JED-18**

5 **Budget: \$3,001,000 Actual: \$8,715,864**

6 **Budget v. Actual: \$5,714,864 (52% variance)**

7 **Recommended Disallowance: \$5,714,864**

8 **Project Authorization Form:**

- 9
- 10 • This project involves the annual inspection of wood poles in Eversource's  
11 maintenance territory and the replacement of poles deemed to be "rejects." As  
12 part of the 2015-2016 pole inspection program, approximately 120 poles were  
13 expected to be replaced based on Eversource's pole inspection criteria.  
14 Eversource utilizes a 10-year inspection cycle.
  - 15 • This project was part of the 2015-2017 Reliability Enhancement Program (REP 3)  
16 approved by the Commission as part of the global settlement agreement related to  
17 the Eversource Generation divestiture.
  - 18 • Upon initial review, the project summary, justification, scope, and alternatives  
19 sections appeared to be sufficient; however, as noted in the Supplement Request  
20 Form discussed below, a subsequent business decision was made by Eversource  
21 to transition from Class 4 to Class 2 poles dramatically increasing the costs.
  - 22 • The total authorized amount for the project, including direct and indirect costs,  
23 was estimated at \$3.0 million; however, Form E-22 filed by Eversource on March  
2, 2015, shows an initial estimate of \$1.095 million.

1           Supplement Request Form:

- 2           • This request for supplemental funding is in the amount of \$5.7 million (including  
3           direct and indirect costs) nearly tripling the cost of the project from \$3 million to  
4           \$8.7 million.
- 5           • The form was dated February 13, 2019, approximately three years after project  
6           completion in December 2015. This excessive delay in filing is contrary to the  
7           requirement for timely submission and approval as provided in the APS-1. Based  
8           on Staff's review of Eversource's project authorization policy, the apparent intent  
9           of the form as described is to alert management to cost overruns during the course  
10          of the project either before or at the time the changes occur. This after-the-fact  
11          notification undermines the purpose of the form.
- 12          • The justification provided in the form centered on a business decision made by  
13          Eversource to replace older Class 2 poles with Class 4 poles instead of preserving  
14          the older poles that could be salvaged. Although the failure rate of 1.7 percent  
15          remained within Eversource's average range of 1.5 to 2 percent, no additional  
16          details were provided to support the increase of \$5.7 million or why the transition  
17          to Class 2 poles was necessary.
- 18          • No "Lessons Learned" section nor an "Actions to prevent recurrence" section was  
19          included in the form.

20          Work Orders:

- 21          • Eversource did not provide the work orders for this project in response to Staff  
22          12-045. Eversource apparently enters all of the work order information into an  
23          Excel spreadsheet and Eversource provided that spreadsheet in response to Staff



1 16-9, Attachment Staff 16-009S containing a spreadsheet summary of all work  
2 orders.

3 • As noted above, in addition to the work order identification numbers and the  
4 amounts, the spreadsheet also contained accounting adjustments, coded entries,  
5 and nondescript entries making it difficult for Staff to precisely trace and verify  
6 the actual costs assigned to the project leading up to the variance.

7 • Upon review it was noticed that Attachment Staff 16-009S does not contain work  
8 order entries for project year 2015 and only covers the years 2016 through 2018.  
9 Therefore, the spreadsheet was of no use for the purposes of reviewing this  
10 project.

11 Project Reviews Performed by Eversource Enterprise Risk Management Group:

12 • This project was not subject to the review of this committee.

13 Project Reviews Performed by the Financial Planning and Analysis Group:

14 • The reviews were not provided as requested in Staff 12-045.

15 Project Reviews & Approvals by the Project Authorization Committee:

16 • The meeting minutes and documented approvals by the Committee were not  
17 provided by Eversource as requested in Staff 12-045.

18 **Staff's Conclusions & Recommendations:**

19 Staff found the initial justification for the project reasonable in terms of the asset condition of  
20 some of the poles discovered during the annual inspection process, and because this is part of a  
21 standard annual program undertaken by Eversource. However, Staff is troubled by the fact that  
22 the dramatic increase in project costs apparently relates back to a business decision made by  
23 Eversource to replace all Class 4 poles with Class 2 poles regardless of asset condition. Staff can

1 only conclude that the results of this decision led to the replacement of poles that may have been  
2 in acceptable condition or salvageable under Eversource's policy and procedure involving reject  
3 pole replacement. As noted above in the 2018 Reject Pole Replacement project, according to the  
4 Eversource Maintenance Program, Document 6.61A Rev. 3, Wood Pole Restoration, Guidelines  
5 for Reject Pole Replacement, "Normal" reject poles must be evaluated for the potential of  
6 extending useful life until the next inspection cycle, and if deemed salvageable, must be restored  
7 or braced according to several methods outlined in the "Pole Restoration" section. According  
8 the Supplement Request Form, rather than restoring or treating the existing poles to extend their  
9 service life, Eversource apparently disregarded its own guidelines resulting in a significant cost  
10 increase for this project. Again, no justification was provided by Eversource to support this  
11 deviation from its policy or explain why restoration efforts were not appropriate or economic in  
12 this instance. In response to Staff TS 2-070, Eversource's only explanation was its desire to  
13 "harden the distribution system." Although the Commission previously approved this project as  
14 part of the global settlement agreement related to the Eversource Generation divestiture, the  
15 Company's deviation from its own pole replacement policy and the additional costs that  
16 exceeded the original budget amount were not approved by the Commission. Because the  
17 evidence demonstrates that the Company failed to follow its own procedures for approving the  
18 project cost increase and for pole replacements, that management's oversight and review of the  
19 project was severely flawed, and that the Company has failed to meet its burden of  
20 demonstrating that its decision making was prudent, Staff recommends that the Commission  
21 disallow all of the costs over and above the original estimate of \$3.0 million resulting in a total  
22 disallowance of \$5.7 million.

23

1 **Q. Are there any other updates to your direct testimony and your project review that**  
2 **you would like to make at this time?**

3 **A.** Yes. At Bates pages 32 to 33 of my direct testimony I discussed the cost overruns  
4 associated with the Central, Eastern, Northern, and Southern DA projects, but did not  
5 include as attachments the PAF's and Supplement Request Forms related to those  
6 projects. I have attached to my updated testimony as Attachment JED-20 the project  
7 documentation for the Central, East, and North DA projects. The documentation for the  
8 Southern DA project was not provided by Eversource.

9

10 **V. CONCLUSIONS AND RECOMMENDATIONS**

11 **Q. Based on your review of the additional information filed by Eversource in this**  
12 **docket since the date of your direct testimony, do you have reason to revise any of**  
13 **your initial conclusions or recommendations about the Company's capital planning,**  
14 **budgeting, and project management?**

15 **A.** No. Other than adjusting the initial budget amounts to incorporate both direct and  
16 indirect costs, I found no persuasive evidence in the rebuttal testimony or the series 16  
17 data responses to cause me to change my original conclusions involving the  
18 recommended disallowances. Indeed, my analysis of the remaining projects in Staff's  
19 sample, in response to Eversource Data Request TS 3-01, only worked to reinforce my  
20 prior conclusions:

- 21
  - Cost estimates contained in the PAF's were consistently under-estimated, in some
- 22 cases by two or three times the initial amount, indicating that little effort was
- 23 made to ensure that projected costs were accurate, reasonable, and appropriately

1 evaluated. Many of the PAF's reviewed did not provide sufficient details and  
2 analysis for "Alternatives Considered" or "Overall Justification."

- 3 • Many of the Supplement Request forms reviewed were submitted after the project  
4 completion dates. This practice runs contrary to the apparent intent of the form as  
5 described in the APS-1 Project Authorization Policy since engagement of  
6 management for approval, and alerting management to cost overruns, presumably  
7 should be sought during the course of the project at the time the changes occurred.  
8 An additional deficiency was that many forms failed to include "Lessons  
9 Learned" sections or "Actions to prevent recurrence" sections which, when  
10 included, provided a valuable look-back and reassessment from the project  
11 engineers/managers' perspective as to what could have been done differently to  
12 keep a project within budget. Those forms that did provide this information were  
13 often critical of project planners and engineers who failed to include basic and  
14 fundamental cost elements in their estimates. As the Commission has recently  
15 held the Liberty Utilities rate case (Order No. 26,377 at 9, dated June 30, 2020):  
16 "Prudent decisions cannot be made if significant, foreseeable cost elements of a  
17 project are over looked at the outset and meaningful re-examination of costs does  
18 not take place during project execution, as costs increase."

- 19 • Individual work orders for projects were not provided to Staff for review. Instead  
20 Eversource provided the work order information in the form of a spreadsheet that  
21 served as a summary of all work orders under a given project number. Staff did  
22 not find those spreadsheets helpful in that they contained accounting adjustments,  
23 coded entries, and nondescript entries that made it difficult to precisely trace and

1 verify the actual costs assigned to the project leading up to the variance. As noted  
2 above, the Audit Division did obtain individual work orders from Eversource for  
3 the purposes of its audit of the Company's books and records.

- 4 • Project reviews performed by the Project Approval Committees and the Financial  
5 Planning Group that were either not provided or did not include discussion or  
6 reference to significant cost overruns for most projects, indicating a lack of  
7 diligent oversight and engagement on the part of management.

8 As I covered in great detail in my direct testimony and in the analysis provided above, the  
9 evidence shows that for all of the projects reviewed the Company overlooked significant,  
10 foreseeable project costs at the outset, that management's review and oversight of  
11 projects was severely flawed, and that the Company has failed to meet its burden of  
12 demonstrating that its decision making was prudent. Therefore, the disallowances to rate  
13 base that I outline and recommend above should be adopted by the Commission.

14  
15 **Q. Have your original conclusions and recommendations related to Eversource's**  
16 **proposals for step adjustments and the proposed GTEP program changed based on**  
17 **your review of the additional information filed by Eversource?**

18 **A.** No. My conclusions and recommendations involving those issues remain unchanged.

19 **Q. Does that conclude your testimony?**

20 **A.** Yes, it does.

21

22