



**STATE OF NEW HAMPSHIRE  
BEFORE THE  
PUBLIC UTILITIES COMMISSION**

Docket No. DE 19-064

Liberty Utilities (Granite State Electric) Corp. d/b/a Liberty Utilities  
Distribution Service Rate Case

**REBUTTAL TESTIMONY**

**OF**

**JOEL RIVERA**

**AND**

**HEATHER M. TEBBETTS**

January 30, 2020

THIS PAGE INTENTIONALLY LEFT BLANK

**TABLE OF CONTENTS**

**I. INTRODUCTION AND BACKGROUND ..... 1**

**II. PURPOSE OF TESTIMONY ..... 2**

**III. SALEM AREA PROJECTS ..... 2**

**IV. ASSET CONDITION SALEM DEPOT AND BARRON AVE..... 19**

**V. LEAST COST INTEGRATED RESOURCE PLAN (LCIRP) ..... 23**

**VI. CONCLUSION ..... 32**

THIS PAGE INTENTIONALLY LEFT BLANK

1 **I. INTRODUCTION AND BACKGROUND**

2 **Q. Mr. Rivera, please introduce yourself.**

3 A. My name is Joel Rivera, my business address is 9 Lowell Road, Salem, New Hampshire,  
4 and I am employed by Liberty Utilities Service Corp. I am the Manager of GIS and  
5 Electric System Planning for Liberty. I am responsible for managing the Company's  
6 electric system capacity, reliability, integrity, interconnections, protection systems,  
7 equipment and system upgrades, prioritization, and associated budget estimates. Please  
8 see the Direct Testimony of Joel Rivera, Anthony Strabone, and Heather M. Tebbetts,  
9 filed April 30, 2019, for a description of my educational background and work  
10 experience.

11 **Q. Ms. Tebbetts, please state your full name, business address, and position.**

12 A. My name is Heather M. Tebbetts, my business address is 15 Buttrick Road, Londonderry,  
13 New Hampshire, and I am employed by Liberty Utilities Service Corp. I am Manager of  
14 Rates and Regulatory Affairs and am responsible for providing rate-related services for  
15 the Company. Please see the Direct Testimony of Joel Rivera, Anthony Strabone, and  
16 Heather M. Tebbetts, filed April 30, 2019, for a description of my educational  
17 background and work experience.

1 **II. PURPOSE OF TESTIMONY**

2 **Q. What is the purpose or your testimony?**

3 A. Our testimony is provided in rebuttal to the Staff witnesses Jay E. Dudley and Kurt  
4 Demmer related to the topics of planning criteria, Least Cost Integrated Resource Plan  
5 (“LCIRP”), and Salem Area Study.

6 **III. SALEM AREA PROJECTS**

7 **Q. What is Staff’s overall recommendation for the Salem Area?**

8 A. Staff believes that Liberty’s planning criteria is too conservative and the proposed loads  
9 at Tuscan Village Development are speculative. This position inappropriately disregards  
10 all forecasted loading and the 37 criteria violations – exceeding normal rating and  
11 exceeding load at risk – identified by Liberty, and downplays the need for major  
12 infrastructure improvements needed at Golden Rock and Rockingham to meet the  
13 growing demand in the town of Salem. A “criteria violation” occurs when the demands  
14 on the system force a particular piece of equipment to operate above the specified limit  
15 for normal or contingency loading which poses heightened risk to a large number of  
16 customers. The loading limits for normal and contingency loading are specified in the  
17 Company’s Distribution Planning Criteria.

18 In addition, Staff believes that the Barron Ave and Salem Depot Substations are adequate  
19 for the electric service they are providing<sup>1</sup> and found no evidence of significant

---

<sup>1</sup> Direct Testimony of Kurt Demmer, Bates Page 26, Lines 11–12.

1 maintenance, repair, or performance issues,<sup>2</sup> even though Staff did not present testimony  
2 of a qualified substation assessor in support of refurbishment.<sup>3</sup>

3 After discrediting all capacity and asset condition issues in the Salem Area, Staff then  
4 recommends serving the Tuscan Village load at 23kV<sup>4</sup> even though it appears Staff lacks  
5 granular feeder information and field condition information<sup>5</sup> to make such a  
6 determination. Further, given the planned load additions in the area, Liberty identified  
7 nine criteria violations for supply line or transformer load at risk for the 23kV system  
8 (Table 2, Lines 14–22), which clearly indicate that the 23kV cannot support the addition  
9 of 17MW project for the Tuscan Village development. Of these nine 23kV supply  
10 violations, six would also be considered in violation using National Grid’s former criteria  
11 (Table 2, Lines 14–17, 21–22).

12 **Q. Staff claims that the load additions for the Tuscan Village Development are**  
13 **speculative. Are the Tuscan Village investments the subject of this case?**

14 **A.** No, at least with respect to the 2018 rate base. However, Tuscan Village investments do  
15 come into play with respect to the Company’s requests for a step adjustment for 2019  
16 capital investments and future step adjustments as part of a Multi-Year Rate Plan.

---

<sup>2</sup> Direct Testimony of Kurt Demmer, Bates Page 26, Lines 6–7.

<sup>3</sup> Response to Liberty Utilities Set 1 Data Request 1–41.

<sup>4</sup> Direct Testimony of Kurt Demmer, Bates Page 28, Lines 3–7.

<sup>5</sup> Response to Liberty Utilities Set 1 Data Request 1–37.

1 **Q. Does the Company agree with the Staff's that the Tuscan Village Development load**  
2 **is speculative?**

3 A. No, we do not. The investment necessary to serve the Tuscan Village Development is far  
4 from speculative. Liberty meets regularly with the developers to discuss electric service  
5 needs and to update loading projections. The loading estimates are determined  
6 consistently for all service requests the Company receives and the loading estimated for  
7 Tuscan Village was no different. Liberty personnel have many years of utility experience  
8 and act in good faith with all customer service requests.

9 Mr. Demmer considers the loading projections to be speculative and not guaranteed to be  
10 in service any time in the near future.<sup>6</sup> Given this position, Staff rejects the load  
11 estimates developed for Tuscan Village and ignores Liberty's forecasted planning criteria  
12 violations given these load additions.<sup>7</sup>

13 **Q. At which point in the process does Staff consider proposed loads to no longer be**  
14 **speculative?**

15 A. Considering Mr. Demmer's testimony and responses to discovery where he repeatedly  
16 referred to the loads at Tuscan Village as speculative, during the technical session held on  
17 January 14, 2020, he was asked to clarify at what point expected load should no longer be  
18 considered speculative. He stated that the load is no longer speculative once foundations  
19 have been poured and distribution transformers have been ordered. This is unrealistic as  
20 applied to the Tuscan development given the long lead time needed to construct the

---

<sup>6</sup> Direct Testimony of Kurt Demmer, Bates page 27, lines 6–7.

<sup>7</sup> Direct Testimony of Kurt Demmer, Bates page 27, lines 16–17



1 facilities required to supply a development in the range of 17 MW and to meet customer  
2 expectations and in-service dates while leveraging some projects to resolve multiple  
3 forecasted criteria violations and asset condition of existing equipment. The Company  
4 needs to plan and build ahead in order to remain synchronous with developer schedules.  
5 Staff has been aware of Liberty's plan for the Salem Area and changes to its planning  
6 criteria since 2016.

7 **Q. What are the existing criteria violations in the Salem Area, based on 2019 peak**  
8 **loading conditions?**

9 A. Liberty has identified eight violations to its distribution planning criteria in 2019.

10 Under normal conditions there are five criteria violations due to feeder or transformer  
11 loading levels above 75% of their summer normal rating. Please refer to Table 1 below,  
12 lines 1, 4, 6, 8, and 13. There are no violations due to feeder loading levels above 100%  
13 of summer normal rating. These five existing violations can be resolved with performing  
14 load transfers in the field.

15 Under contingency conditions, there are three criteria violations due to load at risk. The  
16 Pelham 14L1 and 14L2 feeders currently experience load at risk above the 16 MWhr  
17 limit with each having a load at risk of 20 and 16.8 respectively. The supply line to  
18 Spicket River also experiences load at risk above the 1.5MW/36 MWhr limit, having a  
19 load at risk of 11.87MW/160MWhr. The issue with Spicket River load at risk is further  
20 explained in this testimony.

1 It is worth noting that Liberty extended the Pelham 14L4 feeder into the Town of Salem  
2 to allow transferring load from Golden Rock to Pelham. In 2019 these transfers started  
3 taking place, which resulted in approximately 300A or 6.9 MVA of Golden Rock load  
4 transferred to Pelham. Additional transfers from Golden Rock to Pelham are planned for  
5 2020 to create additional capacity on the 13kV and 23kV for Tuscan Village. The  
6 Company installed the 14L4 feeder to reduce the load at risk from Golden Rock and to  
7 provide additional temporary capacity for Tuscan Village until the Rockingham  
8 Substation can be built. Without the Rockingham Substation, the Tuscan Village  
9 Development will not be able to fully expand. The existing and forecasted criteria  
10 violations (presented below) reflect the 6.9 MVA load transfer from Golden Rock to  
11 Pelham.

12 **Q. What are the criteria violations that are forecasted to occur in 2022 given the**  
13 **planned load additions in the Salem Area?**

14 A. There are many criteria violations that are forecasted to occur in 2022 in the Salem Area  
15 given the Company's load forecast, planned load additions from the Tuscan  
16 Development, and other planned expansions. For a summary of criteria violations that  
17 are forecasted to occur in 2022, see the tables below. Table 1 identifies the criteria  
18 violations that result under normal operating conditions. Table 2<sup>8</sup> identifies the criteria  
19 violations that result under contingency (n-1) conditions.

---

<sup>8</sup> Information under lines 18, 19, and 22 has been updated as compared to Attachment Staff 1-31.xls provided as Company's response to Staff Technical Session Data Requests - Set 1, 1-31.

<b>Table 1 - Distribution Feeders and Transformers Projected to be ≥ 75% of Summer Normal Rating by the Summer Peak Period of 2022</b>										
						2019		2022		
	Study Area	Substation Name	ID	Line kV	SN Rating (Amps)	Actual Load (Amps)	%SN	Projected Load (Amps)	%SN	Risk Score
1	Salem	Olde Trolley	18L2	13.2	503	404	80%	471	94%	30
2	Salem	Olde Trolley	18L3	13.2	515	375	73%	436	85%	30
3	Salem	Olde Trolley	18L4	13.2	516	212	41%	731	142%	48
4	Salem	Pelham	14L2	13.2	530	417	79%	486	92%	30
5	Salem	Pelham	14L4	13.2	530	301	57%	533	101%	36
6	Salem	Salem Depot	9L1	13.2	322	271	84%	375	116%	45
7	Salem	Salem Depot	9L2	13.2	322	224	70%	305	95%	30
8	Salem	Spicket River	13L3	13.2	522	442	85%	515	100%	36
9	Salem	Olde Trolley	TB2	23/13.2	542	402	74%	472	87%	30
10	Salem	Golden Rock	TB1	115/23	2106	1280	61%	1913	91%	30
11	Salem	Olde Trolley	TB3	23/13.2	547	376	69%	437	80%	30
12	Salem	Olde Trolley	TB4	23/13.2	547	337	62%	730	134%	48
13	Salem	Salem Depot	TB1	23/13.2	322	271	84%	376	117%	45
14	Salem	Salem Depot	TB2	23/13.2	322	223	69%	306	95%	30
15	Salem	Spicket River	TB3	23/13.2	608	442	73%	516	85%	30

<b>Table 2 - Distribution Feeders Projected to be ≥ 16 MWhr, Transformers Projected</b>								
	<b>Study Area</b>	<b>Substation Name</b>	<b>Feeder ID</b>	<b>Line kV</b>	<b>Available Ties (MVA)</b>	<b>Load at Risk (MVA)</b>	<b>Total MWhr Outage</b>	<b>Risk Score</b>
1	Salem	Olde Trolley	18L2	13.2	7.91	2.85	17.3	30
2	Salem	Olde Trolley	18L3	13.2	0.83	9.14	37.2	45
3	Salem	Olde Trolley	18L4	13.2	2.31	14.41	59.4	48
4	Salem	Pelham	14L1	13.2	1.8	6.8	28.65	41
5	Salem	Pelham	14L2	13.2	5.2	5.7	26.76	41
6	Salem	Pelham	14L3	13.2	2.5	4.7	21	37
7	Salem	Pelham	14L4	13.2	2.5	9.73	40.78	48
8	Salem	Salem Depot	9L1	13.2	4.31	4.27	20.33	36
9	Salem	Salem Depot	9L2	13.2	2.53	4.44	19.65	30
10	Salem	Salem Depot	9L3	13.2	3.64	4.58	21.05	36
11	Salem	Spicket River	13L1	13.2	3.17	5.5	24.38	41
12	Salem	Spicket River	13L3	13.2	7.08	4.69	24.1	41
13	Salem	Spicket River	13L2	13.2	3.27	4.44	20.2	36
14	Salem	Golden Rock	TB1	115	3.2	25.3	612.8	48
15	Salem	Golden Rock	G-133	115	3.2	25.3	612.8	48
16	Salem	Methuen Jnct to Golden Rock	2353	23	3.2	12.54	305.6	48
17	Salem	Methuen Jnct to Golden Rock	2376	23	0	12.8	307.2	48
18	Salem	Olde Trolley Tap to Olde Trolley	2352	23	4.76	5.85	140.28	48
19	Salem	Olde Trolley Tap to Olde Trolley	2393	23	4.76	5.85	140.28	48
20	Salem	Golden Rock to Baron Ave Tap	2393	23	3.16	5.64	140	48
21	Salem	Baron Ave tap to Olde Trolley Tap	2393	23	3.16	14.94	363	48
22	Salem	Spicket River Tap to Spicket River	2376	23	5.9	22.2	275	48

1

2

**Q. Which of criteria violations above directly result from the change to Liberty’s previous planning criteria, and what are the Company’s plans to address these violations that resulted from a change to the planning criteria?**

3

4

5

**A.** Under normal conditions, the Company identified 15 violations of its new planning criteria in 2022, identified in Table 1 above. Six are violations due to feeder or transformer loading at or above 100 percent of its rating. Nine are violations due to feeder or transformer loading between 75 and 99 percent of their summer normal rating.

6

7

8

1 These nine would not be considered violations under Liberty's previous criteria and  
2 formerly employed at National Grid. However, from these nine violations, only the  
3 Golden Rock T1 violation (line 10) is a result of the planned load additions at the Tuscan  
4 Development, while the other nine are violations that result from the general area load  
5 growth forecast and can be easily resolved by switching. The violation on the Golden  
6 Rock T1 due to load at risk cannot be easily resolved without major infrastructure  
7 additions at Golden Rock and Rockingham. See Attachment RT-1 for additional details  
8 regarding the criteria violations for the Salem Area in 2022 given the planned load  
9 additions and forecasted load growth.

10 Under contingency conditions, there are 22 violations identified for 2022 in Table 2  
11 above. Three are for load at risk that complies with the allowable amount provided in  
12 National Grid's previous criteria (240MWhr), but out of compliance with Liberty's  
13 updated planning criteria (60MWhr and 36MWhr). See lines 18–20. The remaining 18  
14 violations are out of compliance with both previous and updated planning criteria as they  
15 are above 240MWhr. These violations cannot be easily resolved without major  
16 infrastructure additions at Golden Rock and Rockingham. These high levels of load at  
17 risk are not risks that Liberty is willing to accept given its Corporate vision to continually  
18 improve reliability and become "local and responsive" to the communities we serve. As  
19 such Liberty will address all identified criteria violations in the Salem Area consistent  
20 with its Commission-approved planning criteria and company strategies by expanding the  
21 Golden Rock Substation and installing the new Rockingham Substation.

1 In summary, out of the 37 criteria violations identified in Tables 1 and 2 above for 2022,  
2 nine are due to changes in planning criteria for normal loading (75%), and three are due  
3 to changes in planning criteria for contingency loading.

4 **Q. What is the estimated cost related to the change to Liberty's Planning Criteria as it**  
5 **relates to the Salem Area, and how does this compare to the Company's previous**  
6 **estimate performed in 2016?**

7 A. This is difficult to estimate given that the proposed projects for Golden Rock and  
8 Rockingham address a number of issues as a whole including criteria violations related to  
9 normal loading and contingency loading, asset condition, and service delivery to Tuscan  
10 Village Development. However, it is possible to estimate the impact that the change to  
11 the Planning Criteria will have to the Salem Area by making the following assumptions  
12 and observations regarding the proposed scope of projects and forecasted criteria  
13 violations:

- 14 • Two of three feeders at Golden Rock target to resolve Asset Condition at Baron  
15 Ave. One feeder targets a reduction in Load at Risk at Spicket River.
- 16 • Three of six feeders at Rockingham target to resolve Asset Condition at Salem  
17 Depot. One feeder targets reduction in Load at Risk at Spicket River and two  
18 feeders will be dedicated to supply the Tuscan Village Development.
- 19 • One of seven reported criteria violations for normal loading conditions result from  
20 a change to the planning criteria. Note that eight criteria violations for normal  
21 loading are not considered for purposes of this estimate as these eight violations

1 can be resolved with performing load transfers in the field and will not likely  
2 result in capital additions. Three of twenty-one reported criteria violations for  
3 contingency loading conditions result from a change to the planning criteria.

4 Given these assumptions, Liberty estimates the cost of the change in its planning criteria  
5 to be approximately \$800,000 through the scheduled end of the Rockingham Project in  
6 2023, which is lower than its 2016 estimate of \$4.8 million for the Salem Area.

7 **Q. Please provide a summary of the present load at risk at the Spicket River Substation**  
8 **and the forecasted load at risk in 2022 after the proposed load additions in the**  
9 **Salem Area.**

10 A. At present, loss of the 23 kV sub-transmission supply circuit to the Spicket River No.13  
11 Station would result in approximately 11.87 MVA of load at risk, after restorative  
12 switching occurs. Liberty relies on the transmission provider, National Grid, to expedite  
13 repairs should an outage-related problem occur anywhere along the 4.2 miles of National  
14 Grid-owned 2376 sub-transmission line downstream of the 2376/2353 tie. This could  
15 cause Liberty to have up to 160 MWHrs of load at risk, for an assumed repair time of 12  
16 hours, which violates Liberty's planning criteria.

17 In 2022, after planned load additions in the Salem area, loss of the 23 kV sub-  
18 transmission supply circuit to the Spicket River No.13 Station would result in  
19 approximately 22.2 MVA of load at risk, after restorative switching occurs. This could  
20 cause Liberty to have up to 275 MWHrs of load at risk, for an assumed repair time of 12

1 hours, which violates both Liberty's current planning criteria and National Grid's  
2 planning criteria.

3 **Q. What is Staff's position regarding the present load at risk at Spicket River**  
4 **Substation?**

5 A. Staff believes that Liberty's approved planning criteria is too conservative as compared to  
6 their preferred 30MW/720MWhr criteria employed at other utilities.<sup>9</sup> Liberty believes  
7 that the former planning criteria utilized by National Grid (which was used by Liberty  
8 until the Commission approved the current planning criteria in 2017) and the criteria used  
9 by Eversource and Unitil are not appropriate for a system the size of Liberty's.  
10 According to the former criteria utilized by National Grid, the transmission provider is  
11 required to return the failed sub-transmission line to service within 12 hours and is  
12 allowed 240 MWHrs of load at risk. A more conservative approach should be taken in  
13 Liberty's case since the 23 kV supply line feeding Spicket River Station is a sole source  
14 circuit without any contingency sub-transmission backup within Liberty's operating  
15 territory. This will eliminate reliance on the transmission provider and allow Liberty to  
16 significantly reduce load at risk.

17 In addition, Staff argues that 13kV distribution ties between Liberty and National Grid  
18 should be used in calculation of load at risk,<sup>10</sup> even though these ties are located outside  
19 of Liberty's service territory, are of limited capacity (2.5 MVA), and are not guaranteed

---

<sup>9</sup> Direct Testimony of Kurt Demmer, Bates Page 23, lines 13–18.

<sup>10</sup> Direct Testimony of Kurt Demmer, Bates Page 23, Lines 1–5



1 during a large scale event. Liberty disagrees with this position, but for the sake of  
2 discussion offers the following regarding this additional capacity.

3 At present, loss of the 23 kV sub-transmission supply circuit to the Spicket River No.13  
4 Station would result in approximately 9.1 MVA of load at risk, after restorative switching  
5 occurs including transfers to National Grid. This could cause Liberty to have up to 131  
6 MWHrs of load at risk, for an assumed repair time of 12 hours, which still violates  
7 Liberty's planning criteria.

8 **Q. Have there been any recent outages along the 4.2 miles of National Grid's**  
9 **transmission owned 2376 line that supplies Spicket River?**

10 A. Yes. During Winter Storm Quinn (March 7–11, 2018), National Grid's transmission line  
11 that supplies Spicket River lost power, resulting in delays to restoring power to the  
12 customers. Following this major event the Public Utilities Commission stated the  
13 following:

14 The Commission also notes that Liberty's restoration efforts were 25%  
15 longer in duration than those of other utilities, and that the Town of Salem  
16 was the only community in New Hampshire that needed to open a shelter  
17 during the event due to the cold temperatures experienced during the  
18 extended power outage. In order to improve the Company's future  
19 restoration efforts, the Commission has determined that the completion of a  
20 self-assessment would be useful to the Commission as well as the Company.

21 See Attachment RT-2, *Winter Storm Quinn – March 2018 After Action Report for Liberty*  
22 *Utilities*. Some of the relevant issues presented by the Commission were as follows:

- 1           • Liberty’s attempt to facilitate restoration with National Grid of the 23kV supply  
2           line originating at Pie Hill in Methuen and providing power to the Spicket River  
3           Substation.
- 4           • The Commission’s understanding is that the restoration of that substation feed  
5           would significantly restore the affected circuits out of the Spicket River substation  
6           and shorten outage durations in the North Main Street and Main Street areas  
7           accordingly.
- 8           • Restoration efforts coordinated with National Grid, including switching attempts  
9           employed by Liberty to restore power within Liberty’s distribution system in lieu  
10          of National Grid’s prolonged restoration efforts.

11          This is the same contingency scenario that Liberty is attempting to mitigate at Spicket  
12          River. After Quinn, it was clear to Liberty that the Commission was not pleased with the  
13          prolonged restoration times due to lack of feeder ties, delays in returning National Grid’s  
14          line back to service, and the difficulties in communicating with National Grid during this  
15          major event. It is unclear why Staff now believes that the present load at risk condition at  
16          Spicket River is no longer an issue because our planning criteria for load at risk is too  
17          conservative.

1 **Q. What is Staff's estimate for the Tuscan Village Development ultimate loading?**

2 A. Staff estimates the ultimate load at Tuscan Village to be approximately 12 MW<sup>11</sup>,  
3 although that is speculative given that the estimate is based on the South side of the  
4 development having approximately 3-4 times the buildings that the North side contains.<sup>12</sup>

5 Liberty disagrees with this assumption but, for purposes of comparison, offers the  
6 following. Assuming a peak load of 12MW for Tuscan Village, nearly all of the planning  
7 violations discussed above under a peak load of 17MW will still occur. Tables 1 and 2  
8 above have been modified to include a comparison between 17MW and 12MW load  
9 projection for Tuscan Village. See Tables 3 and 4, respectively.

---

<sup>11</sup> Response to Liberty Utilities Set 1 Data Request 1–43

<sup>12</sup> Direct Testimony of Kurt Demmer, Bates Page 27, lines 1–2

<b>Table 3 - Distribution Feeders and Transformers Projected to be ≥ 75% of Summer Normal Rating by the Summer Peak Period of 2022</b>											
	Study Area	Substation Name	ID	Line kV	2019			2022 - 17 MW		2022 - 12 MW	
					SN Rating	Actual Load	%SN	Projected Load	%SN	Projected Load	%SN
					(Amps)	(Amps)		(Amps)		(Amps)	
1	Salem	Olde Trolley	18L2	13.2	503	404	80%	471	94%	471	94%
2	Salem	Olde Trolley	18L3	13.2	515	375	73%	436	85%	436	85%
3	Salem	Olde Trolley	18L4	13.2	516	212	41%	731	142%	556	108%
4	Salem	Pelham	14L2	13.2	530	417	79%	486	92%	486	92%
5	Salem	Pelham	14L4	13.2	530	301	57%	533	101%	533	101%
6	Salem	Salem Depot	9L1	13.2	322	271	84%	375	116%	375	116%
7	Salem	Salem Depot	9L2	13.2	322	224	70%	305	95%	305	95%
8	Salem	Spicket River	13L3	13.2	522	442	85%	515	100%	515	100%
9	Salem	Olde Trolley	TB2	23/13.2	542	402	74%	472	87%	472	87%
10	Salem	Golden Rock	TB1	115/23	2106	1280	61%	1913	91%	1812	86%
11	Salem	Olde Trolley	TB3	23/13.2	547	376	69%	437	80%	437	80%
12	Salem	Olde Trolley	TB4	23/13.2	547	337	62%	730	134%	556	102%
13	Salem	Salem Depot	TB1	23/13.2	322	271	84%	376	117%	376	117%
14	Salem	Salem Depot	TB2	23/13.2	322	223	69%	306	95%	306	95%
15	Salem	Spicket River	TB3	23/13.2	608	442	73%	516	85%	516	85%

<b>Table 4 - Distribution Feeders Projected to be ≥ 16 MWhr, Transformers Projected to be ≥ 60 MWhr, Supply Lines Projected to be ≥ 36 MWhr of Load at Risk by the Summer Peak Period of 2022</b>										
				<b>2022 - 17 MW</b>			<b>2022 - 12 MW</b>			
	<b>Study Area</b>	<b>Substation Name</b>	<b>Feeder ID</b>	<b>Line kV</b>	<b>Available Ties (MVA)</b>	<b>Load at Risk (MVA)</b>	<b>Total MWhr Outage</b>	<b>Available Ties (MVA)</b>	<b>Load at Risk (MVA)</b>	<b>Total MWhr Outage</b>
1	Salem	Olde Trolley	18L2	13.2	7.91	2.85	17.3	7.91	2.85	17.3
2	Salem	Olde Trolley	18L3	13.2	0.83	9.14	37.2	2.8	7.1	30.7
3	Salem	Olde Trolley	18L4	13.2	2.31	14.41	59.4	2.3	10.4	43.3
4	Salem	Pelham	14L1	13.2	1.8	6.8	28.65	1.8	6.8	28.65
5	Salem	Pelham	14L2	13.2	5.2	5.7	26.76	5.2	5.7	26.76
6	Salem	Pelham	14L3	13.2	2.5	4.7	21	2.5	4.7	21
7	Salem	Pelham	14L4	13.2	2.5	9.73	40.78	5.46	6.73	31
8	Salem	Salem Depot	9L1	13.2	4.31	4.27	20.33	4.31	4.27	20.33
9	Salem	Salem Depot	9L2	13.2	2.53	4.44	19.65	2.53	4.44	19.65
10	Salem	Salem Depot	9L3	13.2	3.64	4.58	21.05	3.64	4.58	21.05
11	Salem	Spicket River	13L1	13.2	3.17	5.5	24.38	3.17	5.5	24.38
12	Salem	Spicket River	13L3	13.2	7.08	4.69	24.1	7.08	4.69	24.1
13	Salem	Spicket River	13L2	13.2	3.27	4.44	20.2	3.27	4.44	20.2
14	Salem	Golden Rock	TB1	115	3.2	25.3	612.8	3.2	21.2	514
15	Salem	Golden Rock	G-133	115	3.2	25.3	612.8	3.2	21.2	514
16	Salem	Methuen Jnct to Golden Rock	2353	23	3.2	12.54	305.6	3.2	12.54	305.6
17	Salem	Methuen Jnct to Golden Rock	2376	23	0	12.8	307.2	0	8.7	208.8
18	Salem	Olde Trolley Tap to Olde Trolley	2352	23	4.76	5.85	140.28	4.76	1.85	51.27
19	Salem	Olde Trolley Tap to Olde Trolley	2393	23	4.76	5.85	140.28	4.76	1.85	51.27
20	Salem	Golden Rock to Baron Ave Tap	2393	23	3.16	5.64	140	3.16	1.64	43.9
21	Salem	Baron Ave tap to Olde Trolley Tap	2393	23	3.16	14.94	363	3.16	10.94	267
22	Salem	Spicket River Tap to Spicket River	2376	23	5.9	22.2	275	5.9	22.2	275

1

2

3

4

5

6

7

8

Under normal operating conditions seen in Table 3 above, violations under lines 3, 10, and 12 improve but are still in violation of Liberty’s planning criteria. Feeders that were previously forecasted to be loaded above 100% of their normal rating are still forecasted to be above 100% (Table 3 - Lines 3 and 12). Feeders that were previously forecasted to be loaded to above 75% are still above 75% (Table 3 – Line 10). Out of 15 violations when one assumes a 17MW load, *all* remain in violation of Liberty’s Planning Criteria when the Tuscan load estimate is reduced to 12MW.

1 Under Contingency conditions seen in Table 4 above, there are improvements to the  
2 violations listed under lines 2, 3, 7, 14, 15, and 17 through 21, but they are still in  
3 violation of Liberty's planning criteria. Feeders that were previously forecasted to have  
4 over 16 MWhr of load at risk (Table 4, Lines 1–13), still are forecasted to be over 16  
5 MWhr. The Golden Rock Transformer (Table 4, Line 14) is still forecasted to have load  
6 at risk in excess of Liberty's and National Grid's planning criteria. The supply lines  
7 (Table 4, Line 15–22) are also still forecasted to have load at risk in excess of Liberty's  
8 planning criteria for supply lines (36 MWhr). As mentioned, the forecasted supply line  
9 contingency violations on Table 4, lines 18–20, are within National Grid's criteria. The  
10 major benefit to a 12MW load projection for Tuscan Village is for violations listed on  
11 Table 4, lines 18–20. These results are very close to Liberty's criteria of 36 MWhr for  
12 supply lines. Out of 22 violations, *all* remain in violation of Liberty's Planning Criteria.

13 The results above indicate that a load projection comparison between 12MW and 17MW  
14 for Tuscan Village ultimately has little effect on the overall impact to the distribution  
15 system. This comparison also indicates that the distribution system is nearly at the  
16 tipping point where major infrastructures are needed to support future load growth and  
17 customer expansions in the area and that, even with a 12MW load forecast for Tuscan,  
18 the project needs and drivers remain the same given minimal improvement to the  
19 violations.

1 **IV. ASSET CONDITION SALEM DEPOT AND BARRON AVE**

2 **Q. Please summarize the asset conditions that exist at Salem Depot and Barron Ave**  
3 **Substations.**

4 A. As discussed with Staff during the 2016 rate case proceedings, the existing substation  
5 assets at Barron Avenue and Salem Depot have exceeded both their useful operating lives  
6 and their useful economic lives.<sup>13</sup> The Company has conducted an asset review at each  
7 location, and determined those assets are in need of replacement in the near future, which  
8 is the case regardless of future load growth. Those assets are continuing to deteriorate.  
9 The piece-out replacement of individual components at these locations does not make  
10 good economic sense for a number of reasons, including the limited size and location of  
11 the substations; the limited capacity of the equipment; their reliance on sub-transmission  
12 supply; the condition of electrical equipment; clearance requirements; access and abutter  
13 concerns; vintage control, data, and protection equipment; contingency sparing, and  
14 response. Expansion at these locations is not considered a viable option.

15 In Docket No. DE 16-383, in its response to Staff 4-51, the Company provided the  
16 following: Barron Avenue was initially constructed in the early 1960s. There are a  
17 substantial number of asset condition and operability issues of concern at Barron Avenue.  
18 Its capacity is limited by modular transformers supplied via a 23kV sub-transmission  
19 system. The Salem Depot substation is somewhat older, initially constructed in the mid-  
20 1950s, with similar or worse asset condition concerns, and with similar transformation

---

<sup>13</sup> DE 16-383, Company's response to Staff 4-37.

1 and supply constraints. To varying degrees, there are asset condition, maintenance, and  
2 operating issues with most groupings of equipment at both Barron Avenue and Salem  
3 Depot. Simply replacing discrete pieces or groupings of equipment would not be feasible  
4 due to the multiple equipment deficiencies at the substations. Maintaining, repairing, or  
5 replacing the assets in their existing location and configuration, while possible, are  
6 typically costly and would not be expected to yield a significant improvement in the  
7 overall reliability or operability of the substation. Due to the design and overall condition  
8 of the steel, foundations, bus, switches, and control houses, both substations would  
9 require significant rebuild in situ. Prior experience retrofitting vintage modular or box  
10 structure substations supports the notion that retrofit costs can quickly escalate.

11 Typically, such projects do not result in improved reliability or additional capacity due to  
12 the supply system and/or space constraints. In the case of Barron Avenue, the substation  
13 is located in a residential neighborhood and Granite State has dealt with abutter concerns  
14 for decades. Salem Depot is located in a dense commercial/residential area, making  
15 maintenance access and equipment replacement a significant challenge. Significant  
16 expansion from Tuscan Village further complicates the approach to asset condition,  
17 reliability, and capacity solutions at both sites.

18 The most apparent solution is to replace, over time, the functionality of both the Barron  
19 Avenue and Salem Depot assets with modern distribution facilities from a transmission  
20 system supplied substation, as close to the Salem load center as possible. The Company  
21 has evaluated additional capacity from the existing Golden Rock substation and a future



1 Rockingham substation as the preferred phased alternative to rebuilding the Barron  
2 Avenue and Salem Depot substations.

3 Both the Barron Avenue and Salem Depot substations are modular design substations,  
4 built in the 1950s and 1960s in dense residential/small commercial locations.<sup>14</sup> Prior  
5 experience with substations of this design and vintage has revealed that rebuilding the  
6 facilities with new feeder positions, including a transformer, can approach \$1M. The  
7 investment is often constrained by supply system limitations stemming from conductor  
8 thermal limitations, voltage, and reliability performance. Further, overall substation  
9 capacity is typically capped, again limited by upstream supply limitations. Construction  
10 and outage coordination also become challenging and costly. The preferred path,  
11 wherever possible, is to provide new capacity from a modern design, 115/13kV  
12 substation. Feeder positions typically cost less than \$500k and can usually take  
13 advantage of supply and transformer capacity exceeding 60 MVA or more. They further  
14 offer notable reliability and operating improvements over modular designs. Therefore,  
15 given the age and condition of the Barron Avenue and Salem Depot facilities, their  
16 locations, and the phased approach to utilizing 115/13kV substation capacity at Golden  
17 Rock and eventually a new substation at Rockingham, we did not pursue rebuilds of the  
18 Barron Avenue and Salem Depot substations beyond the preliminary discussions of  
19 possible options.

---

<sup>14</sup> DE 16-383, Company's response to Staff 8-84.

1 See Attachment RT-3 for a summary of equipment concerns at the Barron Ave and Salem  
2 Depot substations.

3 There are a large number of equipment condition concerns at the Barron Avenue Station.  
4 The 10L1 equipment ranges from 57 years in service to 31 years in service. The  
5 transformer is 57 years old (as of 2006, 2 of 31 transformers of this type have failed at  
6 National Grid). The 13.2 kV recloser is 45 years old; this model is known to have a  
7 higher than normal failure rate. The three individual regulators are 31 years old with tap  
8 change counters over 127,400, 270,000 and 197,100. Each component on this feeder is  
9 approaching its end of life.

10 The 10L2 equipment ranges from 19 years in service to 16 years in service.

11 The 10L4 equipment ranges from 50 years in service to 38 years in service. The  
12 transformer is 48 years old (as of 2006 - 5 of 28 transformers of this type have failed at  
13 National Grid). The 13.2 kV recloser is 50 years old and is no longer supported by the  
14 manufacturer, and this model is known to have a higher than normal failure rate. The  
15 three individual regulators are 38 years old with tap change counters over 421,200,  
16 542,500 and 559,700. Each component on this feeder is approaching its end of life.

17 There are also a large number of equipment condition concerns at the Salem Depot  
18 Station. The 9L1 equipment ranges from 68 years in service to 10 years in service. The  
19 transformer is 51 years old. The 13.2 kV oil circuit breaker (OCB) is 68 years old. OCBs  
20 of this vintage require an above average maintenance interval. The three individual

1 regulators are 10 years old with tap change counters over 202,200, 104,900, and 107,900.

2 The transformer and OCB on this feeder are approaching their end of life.

3 The 9L2 equipment ranges from 65 years in service to 16 years in service. The 13.2 kV  
4 recloser is 43 years old. The three individual regulators are 38 years old with tap change  
5 counters over 98,000, 142,800 and 121,600 (this unit requires untanking to repair a failed  
6 internal motor capacitor). The transformer and recloser are approaching their end of life.

7 The 9L3 equipment ranges from 47 years in service to 13 years in service. The  
8 transformer is 30 years old. The H3 bushing needs replacement due to poor power factor  
9 testing results. The 13.2 kV recloser is 13 years old. The individual regulators are 47  
10 years old and 32 years old with tap change counters over 187,500, 217,100, and 196,800.

11 The regulators on this feeder are approaching their end of life.

12 **V. LEAST COST INTEGRATED RESOURCE PLAN (LCIRP)**

13 **Q. Does Staff address LCIRP issues being adjudicated in Docket No. DE 19-120 in its**  
14 **testimony?**

15 A. Yes. The Company is unsure why Staff's testimony addresses issues in the LCIRP as  
16 they are not the subject of this rate case. As Staff felt it necessary to address these issues,  
17 we provide this responsive testimony.

18 **Q. What are the specific deliverables contained in Commission Order No. 26,261?**

19 A. There are two main deliverables contained in Commission Order No. 26,261 (June 4,  
20 2019), which "grant[ed] Liberty Utilities a partial waiver of its 2019 Least Cost  
21 Integrated Resource Plan filing requirement" in light of the "Staff Recommendation on

1 Grid Modernization ...in which Commission Staff (Staff) recommended that electric  
2 distribution utilities file an ‘integrated distribution plan’ (IDP) that would be more  
3 comprehensive and transparent than an LCIRP,” and which “direct[ed] the Company to  
4 file a more limited document.” The first deliverable requires confirmation that the utility  
5 is currently following the process of system planning using established procedures,  
6 criteria, and policies outlined in its 2016 LCIRP, and achieving the objectives included its  
7 2016 LCIRP. The second deliverable requires copies of adopted standard operating  
8 procedures for employees and managers integrating day-to-day and long-term planning  
9 consistent with the Company's objectives of Least Cost Planning.

10 **Q. Is the Company currently following the process of system planning using established**  
11 **procedures, criteria and policies outlined in its 2016 LCIRP?**

12 A. Yes. The process of system planning as described in Section 4.4 of Liberty’s 2016  
13 LCIRP, which includes changes to its previous criteria, are being followed. In summary  
14 they include the following tasks:

- 15 • Forecast peak demand using an econometric model, which includes projected  
16 customer and demand growth;
- 17 • Review and evaluate system performance using Company’s criteria and policies,  
18 which includes: (a) capacity loadings for forecasted peak loads vs. ratings; (b)  
19 reliability; (c) asset condition; and (d) power quality and voltage performance;
- 20 • Implement strategies for Planning Criteria, Area Strategy, and Asset Strategy;

- 1           • Identify and prioritize system deficiencies that need addressing which includes
- 2           consideration of system flexibility in response to various contingency scenarios;
- 3           • Identify wires and non-wires solutions, reflecting the guidelines for non-wires
- 4           solutions and perform evaluation of solutions;
- 5           • Decide on solutions that best meet distribution planning goals; and
- 6           • Develop proposals for system enhancement projects

7           Throughout this rate case proceeding and the ongoing LCIRP proceeding, Docket No. DE  
8           19-120, Liberty has provided confirmation to Staff on the above tasks. To argue the  
9           contrary, Mr. Demmer claims the Company has not satisfied the requirements of  
10          Commission Order No. 26,261 due to a change in its distribution transformer rating  
11          criteria,<sup>15</sup> although the short term capital budget impact due to this change is relatively  
12          minor as compared to the subtransmission line, substation transformer, and distribution  
13          circuit planning criteria that were lowered in the 2016 LCIRP.<sup>16</sup> Even though the  
14          Company disagrees with this claim, Liberty has provided corrected ratings to its  
15          distribution transformers as part of the LCIRP proceedings. In response to Liberty's Data  
16          Request 1-27, Mr. Demmer noted the following: "In Liberty's response to Staff data  
17          request 3-4 in Docket No. DE 19-120, filed on 12/19/19 (after Staff's testimony was filed  
18          in Docket No. DE 19-064), the Company has corrected the distribution transformer  
19          capacity criteria for three-phase padmounted transformers which would allow for a  
20          higher capacity rating of the unit reducing the overall cost impact for three-phase

---

<sup>15</sup> Direct Testimony of Kurt Demmer, Bates Page 11, Lines 1-4.

<sup>16</sup> Direct Testimony of Kurt Demmer, Bates Page 10, Lines 7-9.

1 padmounts as testified in Bates 10 lines 9 through 12.” Liberty considers this issue  
2 resolved and thus in compliance with the first deliverable of the LCIRP.

3 **Q. Regarding the second deliverable, has the Company provided copies of adopted**  
4 **standard operating procedures for employees and managers integrating day-to-day**  
5 **and long-term planning?**

6 A. Yes. As part of the 2019 filing, the Company provided construction standards,  
7 distribution planning criteria, electric operating procedures, and strategy documents used  
8 by employees integrating day to day and long term planning. In his testimony, Mr.  
9 Demmer claims that the Company has not fulfilled this requirement as it has not provided  
10 substation maintenance procedures and standards that would be necessary to evaluate  
11 whether the Company has adopted standard operating procedures for employees and  
12 managers<sup>17</sup>integrating day to day and long term planning. The Company explained to  
13 Staff that these polices are in the process of being updated and once completed, will be  
14 provided.

15 **Q. Please summarize the changes that were made to the planning criteria in 2016 and**  
16 **explain the reasons for those changes.**

17 A. The 2016 changes to the planning criteria were presented to Staff in Docket No. DE 16-  
18 097 and later approved by the Commission in Order No. 26,039 (July 10, 2017). They  
19 were also described in the Rebuttal Testimony of Christian Brouillard, Director of  
20 Engineering, in Docket No. DE 16-383, the Company’s last rate case.

---

<sup>17</sup> Direct Testimony of Kurt Demmer, Bates Page 11, Lines 10-14.

1 As explained in the 2016 LCIRP proceeding, and in Mr. Brouillard's testimony in the  
2 prior rate case, when Liberty Utilities acquired the Company in 2012, Liberty made a  
3 commitment to its customers, communities, and the Commission to be a locally managed  
4 company, responsive to the needs of our customers and to the communities in which we  
5 operate. The Company also committed to invest in delivery system projects in a manner  
6 consistent with this strategy. In the short run, this meant initiating and completing the  
7 projects that National Grid identified, but never started. In the longer term, this  
8 commitment meant developing a system design criteria that would appropriately manage  
9 the day-to-day, contingency, and storm operating risks for a stand-alone utility of our  
10 geographical makeup and resource base. Unlike National Grid or one of the other  
11 neighboring utilities, Liberty has a limited number of crews available for response to  
12 system outages and contingencies. In contrast, National Grid had an extensive resource  
13 base extending from Western New York to Eastern Massachusetts, and locally,  
14 significant line and substation resources available from nearby Massachusetts. Also,  
15 National Grid had spare substation and overhead/underground line equipment available to  
16 New Hampshire within a matter of hours. Without a significant increase to its non-in-  
17 service inventory, Liberty no longer has such access to spare equipment.

18 Therefore, to meet its commitments, Liberty chose to change its system design criteria to  
19 better manage its forward operating risks, and to allow for improved response and  
20 flexibility to contingencies as well as to customer growth and load increases. Comparing  
21 Liberty's planning criteria to that of National Grid or another nearby large utility is thus  
22 unwise and inappropriate. Requiring Liberty to evaluate its system investments using

1 National Grid's planning criteria is also unreasonable and inefficient. As an example,  
2 using National Grid's planning criteria, a 24-hour outage to approximately 2,000  
3 customers resulting from a 23kV/13kV transformer failure would be acceptable. A sub  
4 transmission (23kV) line outage impacting 4,000 customers and lasting 12 hours would  
5 also be acceptable. Such planning and operating constraints are not acceptable to  
6 Liberty, nor are they consistent with our aforementioned customer strategy. Although a  
7 utility the size and scope of National Grid has the robust response capabilities to be able  
8 to respond to such large outages, a utility of Liberty's limited size and scope simply  
9 cannot respond in the same timeframe to these contingencies.

10 One can better appreciate Liberty's operating constraints and need for revised design  
11 criteria by thinking of the Company as two utilities, one in the Salem area and one in  
12 Lebanon. Like a smaller utility, with limited labor and material resources, Liberty's  
13 reliability focus has shifted to prevention through the installation of spacer cable, and our  
14 system contingency planning has shifted to one placing a greater emphasis on  
15 redundancy. That is, given Liberty's reduced response capability and spare parts  
16 inventory compared to what it enjoyed as a member of the National Grid family, the  
17 prudent course is to focus on prevention and redundancy.

18 In the 2016 rate case proceedings, the Company validated the changes to its planning  
19 criteria and the reasoning behind the changes. The criteria are entirely appropriate for a  
20 utility of Liberty's size, scope, and customer commitments; reverting back to National  
21 Grid's criteria is not appropriate. Nor is it appropriate or efficient to require dual



1 analyses of the projects against both National Grid and Liberty criteria as part of a cost-  
2 recovery filing. After a through discussion of these issues during the hearing on the 2016  
3 LCIRP, the Commission agreed with the Company and approved the new planning  
4 criteria in Order No. 26,039 as part of its overall approval of the LCIRP.

5 For a summary of changes to the planning criteria, refer to the table below:

New Criteria	Previous Criteria	Reason for Change
<b>During normal operation, all distribution feeders to remain within 75% of normal ratings.</b>	During normal operation, all distribution feeders to remain within 100% of normal ratings.	Allows for adequate capacity on adjacent lines to restore load post-contingency and reflects Liberty's strategy to proactively plan for sufficient capacity to meet changes in demand.
<b>During normal operation, all sub-transmission lines to remain within 90% of normal ratings.</b>	During normal operation, all sub-transmission lines to remain within 100% of normal ratings.	Allows for adequate capacity on adjacent lines to restore load post-contingency and reflects Liberty's strategy to proactively plan for sufficient capacity to meet changes in demand.
<b>During normal operation, all transformers to remain within 75% of normal ratings.</b>	During normal operation, all transformers to remain within 100% of normal ratings.	Reflects Liberty's strategy to proactively plan for sufficient capacity to meet changes in demand.
<b>For the loss of a distribution feeder, if more than 16MWhrs of load at risk results for a single feeder fault evaluate alternatives to mitigate.</b>	No Change.	Existing targets are adequate given size of a typical Liberty distribution feeder.
<b>For the loss of a sub-transmission supply line, the quantity of load at risk of being out of service following post contingency switching should be limited to 1.5MW combined. If more than 36MWhrs of load at risk results for a single line fault evaluate alternatives to mitigate.</b>	For the loss of a sub-transmission supply line, the quantity of load at risk of being out of service following post contingency switching should be limited to 20MW combined. If more than 240MWhrs of load at risk results for a single line fault evaluate alternatives to mitigate.	Reflects Liberty's strategy and scale of facilities.
<b>For the loss of a transformer, the quantity of load at risk of being out of service following post contingency switching should be limited to 2.5MW combined. If more than 60MWhrs of load at risk results for a single line fault evaluate alternatives to mitigate.</b>	For the loss of a transformer, the quantity of load at risk of being out of service following post contingency switching should be limited to 10MW combined. If more than 240MWhrs of load at risk results for a single line fault evaluate alternatives to mitigate.	Reflects Liberty's strategy and scale of facilities.
<b>Every effort must be made to return the failed sub-transmission line to service within 12 hours.</b>	Every effort must be made to return the failed sub-transmission line to service within 24 hours.	Establishes a new limit for repairing feeder faults on Liberty's distribution feeders.
N/A	Every effort must be made to return the failed distribution feeder to service within 24 hours.	Establishes a new limit for repairing feeder faults on Liberty's distribution feeders.
<b>In general, and whenever practical, each feeder should have three feeder ties to neighboring feeders.</b>	N/A	Reflects Liberty's strategy to increase operating flexibility and support improved reliability performance due to faster service restoration times and future implementation of distribution automation.
<b>Distribution feeders should be limited to 2,500 customers and sectionalized such that the number of customers does not exceed 500 or 2,000kVA of load between disconnecting devices.</b>	N/A	Reflects Liberty's strategy to increase operating flexibility and support improved reliability performance due to faster service restoration times and future implementation of distribution automation.

1 **Q. Have the changes to Liberty’s Distribution Planning Criteria received regulatory**  
2 **approval?**

3 A. Yes. As mentioned above, the Commission approved changes to Liberty’s Distribution  
4 Planning Criteria in 2016 as part of Docket No. DE 16-097, Least Cost Integrated  
5 Resource Plan. Order No. 26,039 (July 10, 2017).

6 **Q. Since the approval of the changes to Liberty’s Planning Criteria as part of its Least**  
7 **Cost Integrated Resource Plan in 2016, how much has Liberty spent to date**  
8 **addressing issues that can be directly attributed to a change in the planning**  
9 **criteria?**

10 A. Liberty has not undertaken any projects to resolve a criteria violation that resulted from a  
11 change to its planning criteria. Thus, it is irrelevant to the costs to be recovered in this  
12 case whether the planning criteria should remain as approved by the Commission in 2017  
13 or modified going forward. Specifically, no costs in this case were incurred to comply  
14 with the heightened planning criteria approved in 2017.

15 **Q. What is Staff’s view on load at risk as it relates to transformers and supply lines?**

16 A. During the technical session held on January 14, 2020, Staff indicated that they envision  
17 Unitil, Eversource, and Liberty to all have the same planning criteria and reliability  
18 targets. Mr. Demmer’s testimony compared the planning criteria for the three utilities<sup>18</sup>  
19 and noted that the load at risk for Unitil and Eversource is 30MW for up to 24 hours,  
20 which could result in 720 MWhr of load at risk. However, Mr. Demmer did not compare

---

<sup>18</sup> Direct Testimony of Kurt Demmer, Bates 13, line 1.

1 sizes of transformers that each utility typically employs in their distribution system or the  
2 amount of customers served for each utility. While a criteria of 30MW/720MWhr might  
3 be adequate for a utility that employs larger sized transformers and of larger scale  
4 resources, it is not appropriate for Liberty's system given that all Liberty-owned  
5 transformers are between 7.5MVA and 9.375MVA and supply fewer customers as  
6 compared to the other utilities in New Hampshire. To understand the impact to Liberty,  
7 consider a hypothetical loss of supply to the Spicket River Substation for 24 hours. The  
8 Spicket River Substation roughly represents the magnitude of load at risk that Staff  
9 envisions for Liberty (30 MW/720 MWhr).<sup>19</sup> Spicket River Substation is loaded to about  
10 24MW and serves 6,855 Customers. The hypothetical loss of this substation would result  
11 in a loss of power to 15% of Liberty's customers and a SAIDI of 219 minutes, which is  
12 more than the Company's SAIDI performance for 2018 and 2019 combined (192  
13 minutes). Liberty's approved Distribution Criteria was intentionally refined from that of  
14 National Grid, the former owner, to reflect the operating parameters of Liberty's smaller  
15 distribution footprint and resource base. It is unlikely that the expansions of the Mount  
16 Support and Pelham substations, completed by the Company within this rate period,  
17 would be justifiable given a criteria that allows 30 MW of load at risk for 24 hours.

18 **VI. CONCLUSION**

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

20 **A. Yes.**

---

<sup>19</sup> Direct Testimony of Kurt Demmer, Bates page 19, lines 8–9.