

CASE: PCN 2  
WITNESS: NADINE HANHAN

**PUBLIC UTILITY COMMISSION  
OF  
OREGON**

**STAFF EXHIBIT 500**

**Reply Testimony**

**January 16, 2019**

1 **Q. Please state your name, occupation, and business address.**

2 A. My name is Nadine Hanhan. I am a Senior Utility Analyst employed in the  
3 Energy, Resources, and Planning Division of the Public Utility Commission of  
4 Oregon (OPUC or Commission). My business address is 201 High Street SE,  
5 Suite 100, Salem, Oregon 97301.

6 **Q. Have you previously provided testimony in this case?**

7 A. Yes. I provided testimony and exhibits. See Staff/200-206, Hanhan and  
8 Staff/400-413, Hanhan.

9 **Q. What is the purpose of your testimony?**

10 A. The purpose of my testimony is to respond to Tillamook Public Utility District's  
11 (Tillamook PUD) Supplemental Testimony filed on December 17, 2018.

12 **Q. Did you prepare an exhibit for this docket?**

13 A. No.

14 **Q. How is your testimony organized?**

15 A. I do not have any specific issues to discuss in my testimony.

16 **Q. If you do not have any specific issues, why are you filing testimony?**

17 A. On November 1, 2018, the Commission held a public hearing for this docket in  
18 Tillamook County. Following that hearing, the Administrative Law Judge issued  
19 a ruling that additional testimony was needed to augment the record.<sup>1</sup> With that  
20 ruling, the Administrative Law Judge issued a series of bench requests for  
21 Tillamook PUD. Tillamook PUD answered the bench requests in the form of

---

<sup>1</sup> *In the Matter of Tillamook People's Utility District, Petition for Certificate of Public Convenience and Necessity, Docket PCN 2, Ruling at 1 (November 9, 2018).*

1 testimony filed on December 17, 2018. My testimony is reply testimony to  
2 Tillamook PUD's response to the Commission bench requests.<sup>2</sup> In my analysis,  
3 I considered the Company's testimony, exhibits, and conferred with the OPUC  
4 Safety Division.

5 **Q. What was the focus of the bench requests?**

6 A. The focus of the bench requests was Tillamook's capacity need, how the  
7 proposed transmission line is the best option to meet that need, meet future  
8 load growth, and why the transmission line is a better option than the other  
9 alternatives, (particularly Option 3, which included providing redundant feeders  
10 to Netarts and Oceanside), strengthen tie points between the Wilson and Trask  
11 substations, and replacing the Wilson T1 transformer.<sup>3</sup>

12 **Q. What are your overall thoughts on Tillamook PUD's response to the**  
13 **Commission bench requests?**

14 A. It is Staff's view that Tillamook PUD provided sufficient additional details to  
15 augment the record. The Company's last round of testimony was thorough and  
16 addressed the Commission's inquiries adequately. It is Staff's opinion that the  
17 transmission line is the best option for addressing capacity and reliability issues  
18 facing Tillamook PUD.

19 **Q. Is this view consistent with what Staff has previously filed?**

20 A. Yes. In my previous testimony, I recommended that Tillamook PUD had  
21 demonstrated necessity of the line. The additional testimony has provided

---

<sup>2</sup> Exhibits TPUD/400-419, Fagen.

<sup>3</sup> Exhibit TPUD/205, Fagen/52.

1 additional detail that, in Staff's view, bolsters our original recommendation that  
2 the line is necessary.<sup>4</sup>

3 **Q. Please provide additional clarification as to why you believe Tillamook**  
4 **PUD has adequately addressed the necessity of the proposed**  
5 **transmission line?**

6 A. In my previous testimony, I had related that though Option 3 would address the  
7 issue of adding capacity, both the existing and new feeder associated with  
8 Option 3 would stretch 10 to 14<sup>5</sup> miles. From a reliability perspective, this is a  
9 long way to carry roughly 5 MW of load that is primarily at the end of the line,  
10 particularly because all of the load would be located in the last two to three  
11 miles of the feeder.<sup>6</sup>

12 In its most recent testimony filing, Tillamook PUD provided additional support  
13 for this reliability justification. It explained that the majority of loads are in the  
14 Oceanside/Netarts area, more than nine miles from the Wilson substation  
15 which is the primary power source for that area. Reliability issues would still  
16 occur under N-1 conditions (i.e., with one of the distribution feeders out of  
17 service), even with the addition of a second 24.9kV feeder as proposed in  
18 Option 3. The Company reiterated that it would still need to install regulators, or  
19 voltage-boosting equipment, to provide adequate voltage in an N-1 scenario.<sup>7</sup>

20 Staff does not disagree with this analysis. From a reliability perspective, a 115

---

<sup>4</sup> Exhibit Staff/400, Hanhan/20.

<sup>5</sup> For a total of 19.2 miles. Exhibit Staff/400, Hanhan/16 See also Exhibit TPUD/400, Fagen/20.

<sup>6</sup> Exhibit Staff/400, Hanhan/17.

<sup>7</sup> Exhibit TPUD/400, Fagen/13.

1 kV transmission line, being at a higher voltage, is better suited to covering such  
2 a distance.

3 It is important to note that since Tillamook PUD's original filing, the Company  
4 has already implemented a component of Option 3 due to an ancillary  
5 equipment failure at the old Wilson T1 transformer during the 2017-2018 winter  
6 season: Tillamook PUD has replaced the Wilson T1 transformer.<sup>8</sup> One of the  
7 Commission bench requests addressed this topic by asking the Company to  
8 re-evaluate the need for Option 4 in light of this upgrade.<sup>9</sup>

9 Tillamook PUD concluded that its system would likely only be able to  
10 accommodate 8-17 years of additional load growth from today before running  
11 into reliability issues.<sup>10</sup> The Company indicated, based on its load growth  
12 analysis, that the eight-year bookend is more likely. In contrast, the estimated  
13 longevity of option 4 is between 38 and 48 years.<sup>11</sup>

14 Given that it may take between 3 to 4 years before the transmission line can  
15 be constructed and energized, it is possible that the Company may only result  
16 in having a four-year cushion of reliable operation. .<sup>12</sup> Even without the  
17 construction of the transmission line, the Company would need to address  
18 reliability concerns before the eight-year bookend period comes to a close.

19 Staff agrees with Tillamook PUD that from a longevity and economic

---

<sup>8</sup> Exhibit TPUD/400, Fagen/3.

<sup>9</sup> , Docket PCN 2, Ruling at 1 (November 9, 2018).

<sup>10</sup> For example, one issue would be no longer being able to serve loads under an N-1 scenario.

<sup>11</sup> Exhibit TPUD/400, Fagen/32.

<sup>12</sup> Exhibit TPUD/400, Fagen/32.

1           standpoint, major system upgrades with a useful life of less than 10 years is  
2           not a best practice.<sup>13</sup>

3           **Q. Were you satisfied with Tillamook PUD's load growth analysis?**

4           **A.** Yes. In my previous testimony, I pointed to the fact that Tillamook PUD has  
5           indicated that it used its 2009 peak, without assuming additional growth, for  
6           planning purposes. Further, I noted that utilizing a peak number is  
7           consistent with utility best practices of planning for peak usage rather than  
8           average demand.<sup>14</sup>

9           In Tillamook PUD's response to Commission inquiries regarding load growth,  
10          the Company clarified that the 17-year bookend mentioned above assumed  
11          zero peak load growth from the Company peak in 2009<sup>15</sup> adjusted for electric  
12          system conditions as they were in 2016.<sup>16</sup> I agree with the Company that  
13          expecting the upgrades to suffice for 17 years is unlikely. In its most recent  
14          filing, the Company analyzed future peak demand by applying a newly  
15          calculated 0.9259% growth rate based on average energy growth. The  
16          Company applied this growth rate to its 2009 peak.<sup>17</sup> It is this analysis that  
17          informed the eight-year bookend. This is not an unreasonable approach. While  
18          the eight-year bookend is not an absolute certainty, I agree that 17 years is  
19          likely too long, and the Company will need to address its reliability issues

---

<sup>13</sup> Exhibit TPUD/400, Fagen/14.

<sup>14</sup> Exhibit Staff/400, Hanhan/9.

<sup>15</sup> Exhibit TPUD/400, Fagen/4.

<sup>16</sup> Exhibit TPUD/400, Fagen/15-16.

<sup>17</sup> Exhibit TPUD/400, Fagen/12.

1           before then. As Staff has stated in the past, from a reliability perspective, a 115  
2           kV transmission line is best suited to meet this need.

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

4           A. Yes.