

**STATE OF NORTH DAKOTA
BEFORE THE
PUBLIC SERVICE COMMISSION**

Otter Tail Power Company
Advance Prudence – Astoria Gas
Application

Case No. PU-17-

DIRECT TESTIMONY
OF
RANDY SYNSTELIEN
ON BEHALF OF
OTTER TAIL POWER COMPANY

Economic Analysis Testimony

April 10, 2017

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1 **I. INTRODUCTION AND QUALIFICATIONS**

2
3 Q. PLEASE STATE YOUR NAME AND TITLE

4 A. My name is Randy Synstelien. I am the Principal Resource Planner for Otter Tail Power
5 Company (Otter Tail or the Company).

6
7 Q. PLEASE DESCRIBE YOUR QUALIFICATIONS AND EXPERIENCE.

8 A. I have a Bachelor of Arts degree in accounting from Moorhead State University. I have
9 worked for Otter Tail Power Company since 1991. My current job responsibilities as the
10 Principal Resource Planner include ensuring that Otter Tail has sufficient capacity and
11 energy resources to reliably and affordably meet customer needs.

12
13 Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

14 A. The purpose of my testimony is to support the Company's application for an Advance
15 Determination of Prudence (ADP) in connection with Otter Tail's proposed
16 approximately 250 MW simple cycle gas generation development (Astoria Station or the
17 Project). In particular, I discuss the analyses performed by Otter Tail through its
18 Integrated Resource Plan (IRP) process. I also address the impact of adding the Project to
19 the Company's integrated system.

20
21 **II. PROJECT DESCRIPTION**

22
23 Q. PLEASE DESCRIBE OTTER TAIL'S PROPOSED RESOURCE ADDITION.

24 A. Otter Tail is proposing to develop and construct an approximately 250 MW natural gas-
25 fired simple cycle electric generator near the town of Astoria, South Dakota. The
26 Company has purchased a site for the Project at the intersection of the Northern Border
27 Pipeline and the Big Stone South-Brookings County 345 kilovolt transmission line. As
28 discussed by Mr. Swanson, Otter Tail currently estimates the Project to have capital costs
29 of approximately \$165 million.

1 **III. INTEGRATED RESOURCE PLANNING**

2
3 Q. PLEASE DESCRIBE OTTER TAIL’S RESOURCE PLANNING APPROACH?

4 A. The Company’s integrated resource planning (IRP) process utilizes generic demand-side
5 and supply-side resources (e.g., energy efficiency/conservation and generation from
6 wind, solar, natural gas, or coal) that are identified as potential components of the
7 Company’s preferred resource plan. Once a resource is identified as a part of the
8 preferred plan in the IRP process, Otter Tail then seeks to identify the most cost-effective
9 individual components for the preferred plan.

10
11 Q. HOW DOES OTTER TAIL UNDERTAKE ITS IRP PROCESS?

12 A. Otter Tail uses resource planning software called Strategist to aid in the resource
13 planning process. The goal of the resource planning process is to develop a single
14 preferred plan, on an integrated system basis, which reliably and economically meets the
15 capacity and energy needs of customers in the three states we serve, while complying
16 with all legal and regulatory obligations and adequately addressing risk. Otter Tail
17 provides service in three states on an integrated system basis, which affords significant
18 benefits to customers due to the economies of scale achieved from planning and
19 integrating generation assets on a larger scale. The resource planning process
20 incorporates the full complement of the Company’s existing fleet of generation, bilateral
21 transactions, and demand-side management (DSM) programs, as well as evaluating new
22 resource alternatives to meet customer demand, expiring bilateral transactions, and the
23 anticipated retirement of existing generation resources. The preferred plan is considered
24 under numerous scenarios relating to forecasted fuel prices (i.e., coal and natural gas),
25 market energy prices, market capacity prices, load growth, and resource costs (including
26 both capital and O&M).

27
28 Q. IS THE PROPOSED PROJECT A RESULT OF OTTER TAIL’S IRP PROCESS?

29 A. Yes. In both our 2013 and 2016 IRP processes, we analyzed the impact of simple cycle
30 generation to meet Otter Tail’s anticipated energy needs.

1 Q. WHAT WERE THE RESULTS OF THE 2013 IRP PROCESS?

2 A. Our 2013 IRP process indicated that adding simple cycle gas generation would meet the
3 capacity needs Otter Tail anticipated in the 2021 time frame. Mr. Draxten discusses these
4 needs further in his Testimony.

5
6 The Company's 2013 IRP process sought to determine the optimal capacity resource to
7 meet Otter Tail's future needs. To do so, several different generic resource additions
8 were provided to Strategist for selection. These included three different size simple cycle
9 generators; a small combined cycle generator; and repowering of Hoot Lake Plant with
10 natural gas. A simple cycle generator was selected in 76 of the 78 scenarios analyzed,
11 indicating that the selection of a simple cycle generator was likely to be the most
12 economic capacity addition.

13
14 The 2013 IRP process also analyzed the potential addition of wind resources to meet
15 Otter Tail's energy needs. At the then-prevailing wind pricing, which predated the
16 extension of the federal production tax credit (PTC), Strategist did not select wind as a
17 least cost addition. However, our analysis indicated that if wind prices were at or below
18 \$30/MWh, acquiring wind was least-cost and prudent.

19
20 Q. WHAT WERE THE RESULTS OF THE 2016 IRP PROCESS?

21 A. Our 2016 IRP process confirmed the results of the 2013 IRP analyses. Strategist
22 continued to select approximately 250 MW of simple cycle gas generation. Importantly,
23 since the 2013 IRP process had identified simple cycle generation as the most cost
24 effective way to meet Otter Tail's needs, the Company had been working toward
25 developing a simple cycle plant. Consequently, we included a simple cycle option for
26 Strategist to select with the costs and operating characteristics of Astoria Station, in
27 addition to a different generic simple cycle plant, combined cycle plants, and other
28 options. The simple cycle generator with Astoria Station's characteristics was selected in
29 every scenario analyzed. This confirmed the prudence of moving forward with the
30 Project.

31

1 Q. ARE THERE OTHER RELEVANT RESULTS OF THE 2016 IRP PROCESS?

2 A. Yes. Our 2016 IRP process also indicated that it would be economic to meet Otter Tail's
3 energy needs with wind generation if it was priced at or below \$30/MWh, confirming the
4 results of the 2013 IRP process.

5

6 **IV. ECONOMIC IMPACT OF THE RESOURCE ADDITION**

7

8 Q. HAS OTTER TAIL ANALYZED THE IMPACT OF THE PROJECT?

9 A. Yes. We analyzed the addition of Astoria Station as compared to the base case, and also
10 analyzed the addition of Astoria Station and the Merricourt Project as compared to the
11 base case.

12

13 Q. WHAT WERE THE RESULTS OF OTTER TAIL'S ANALYSIS?

14 A. The addition of Astoria Station, both alone and with the Merricourt Project, lowered
15 overall system costs when compared to the base case.

16

17 Q. HOW WAS THE BASE CASE ESTABLISHED?

18 A. To assess impacts, Otter Tail established a baseline that assumes the retirement of Hoot
19 Lake Plant in 2021, the expiration of bilateral capacity and energy purchases that the
20 Company currently utilizes, and the addition of no new resources. The resulting plan has
21 a considerable amount of energy and capacity purchased at forecasted market prices.

22

23 Q. PLEASE SUMMARIZE THE RESULTS OF THE COMPANY'S ANALYSIS.

24 A. The table below identifies the PVRR impacts of the scenarios analyzed.

25

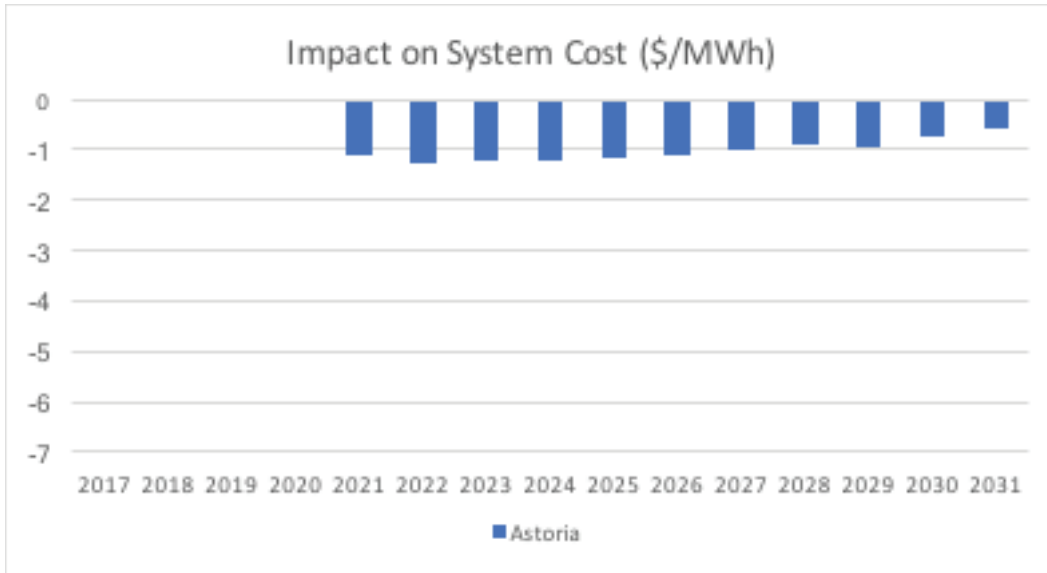
Scenario	Present Value Utility Costs (000)	Difference from Base
Base Case (Market energy and capacity purchases)	2,375,341.80	
Base plus Astoria	2,338,913.80	-36,428.00
Base plus Astoria and Merricourt	2,238,187.50	-137,154.30

26

27

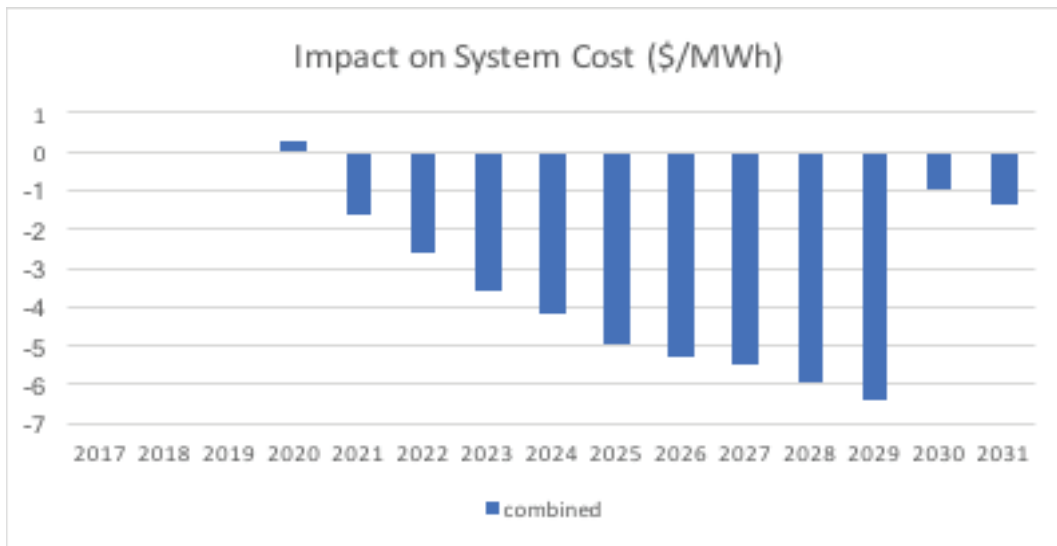
28 Q. DO THE IMPACTS OF THE PROJECT CHANGE OVER TIME?

1 A. Yes. The nature of Company ownership of Astoria Station means that the impact to
 2 customers will vary over time. However, Astoria Station is expected to produce cost
 3 savings compared to the base case upon commencement of commercial operation. The
 4 chart below demonstrates the annual cost impact of the Astoria Project.
 5



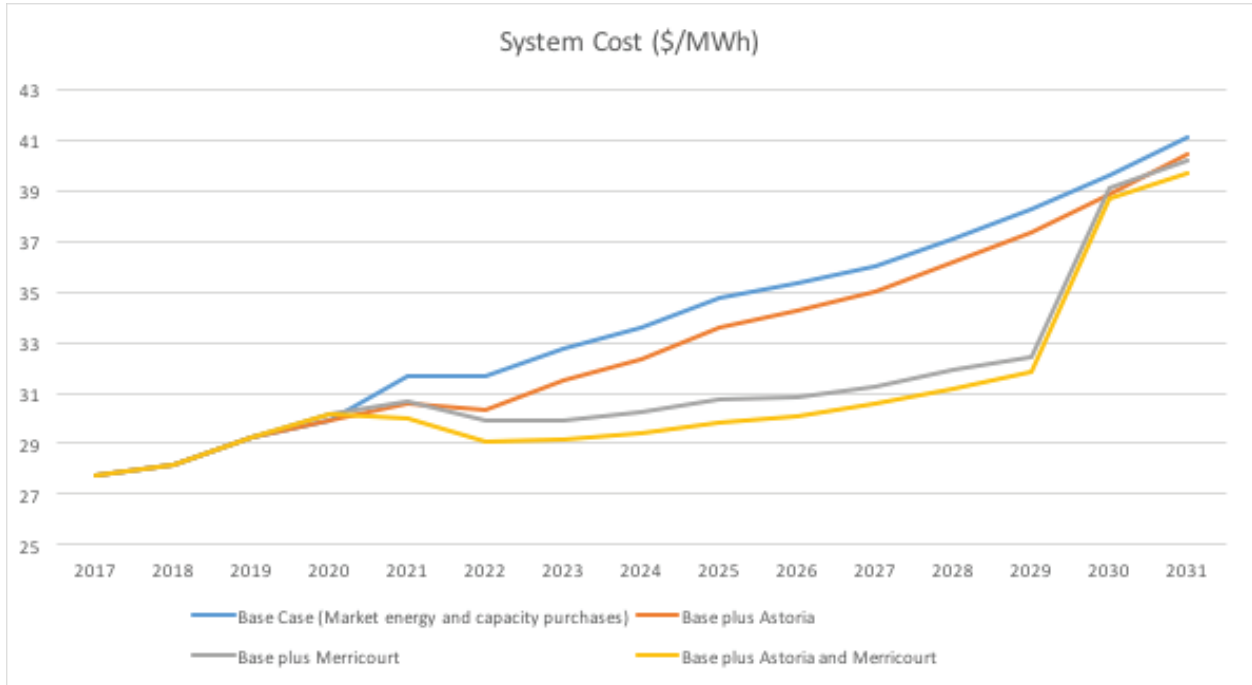
6
 7
 8 Q. HAS OTTER TAIL ANALYZED THE ANNUAL COST IMPACT FOR ITS TWO-
 9 PART PLAN?

10 A. Yes. The chart below shows the cost savings on an annual basis for the combined
 11 addition of Astoria Station and the Merricourt Project when compared to the base case.
 12



1 The chart below illustrates the cost impact of each scenario analyzed on an annual basis
2 when compared to the base case.

3



4
5

6 Q. WHAT DO YOU CONCLUDE BASED ON THESE ANALYSES?

7 A. I conclude that Astoria Station on its own – and as part of the Company’s two-part plan –
8 is least-cost in all scenarios analyzed.

9

10 V. CONCLUSION

11

12 Q. DOES THIS CONCLUDE YOUR TESTIMONY?

13 A. Yes, it does.

14

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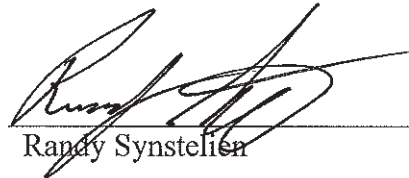
Case No. PU-17-___

VERIFICATION

STATE OF MINNESOTA)
) ss.
COUNTY OF OTTER TAIL)


Randy Synstelien, being first duly sworn on oath, deposes and says that he is the Principal Resource Planner for Applicant Otter Tail Power Company; that the testimony and schedules submitted in the above-captioned matter under his name were prepared under his direction; and that he knows and verifies the contents thereof, and that the same is true and correct to the best of his knowledge and belief.

Dated this 10th day of April, 2017



Randy Synstelien

Subscribed and sworn to before
me on this 10 day of April, 2017.



Notary Public
My Commission expires 1-31-22

