

**STATE OF NORTH DAKOTA
PUBLIC SERVICE COMMISSION**

**Otter Tail Power Company
Advance Prudence – Astoria Fuel Inventory System
Application**

**Case No. PU-23-66
OAH No. 20230080**

AFFIDAVIT OF SERVICE BY ELECTRONIC MAIL

**STATE OF NORTH DAKOTA
COUNTY OF BURLEIGH**

Pamela J. Thompson deposes and says that:

she is over the age of 18 years and not a party to this action and, on the **4th day of March 2024**, she sent electronically to the parties listed below, the following:

- **Advocacy Staff’s Post Hearing Brief**
- **Proposed Findings of Fact, Conclusions of Law and Order**

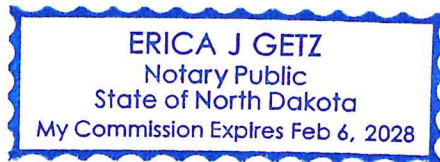
The emails were addressed as follows:

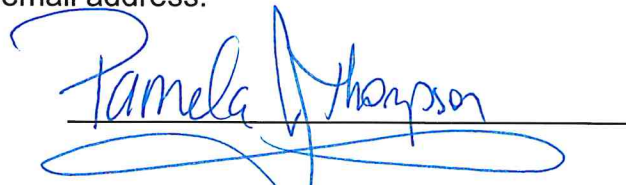
Timothy J. Dawson
Administrative Law Judge
tjdawson@nd.gov

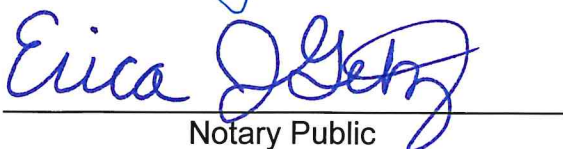
Cary Stephenson
Otter Tail Power Company
cstephenson@otpc.com

To the best of affiant's knowledge each email address shown is the respective addressee's last reasonably ascertainable email address.

Subscribed and sworn to before me
this **4th day of March 2024**.







Notary Public

SEAL

cc: Regulatory Filing Coordinators@otpc.com

68 PU-23-66 Filed 03/04/2024 Pages: 14

Affidavit of Service, Email - Advocacy Staff's Post Hearing Brief and Proposed Findings of Fact, Conclusions of Law and Order
Public Service Commission

STATE OF NORTH DAKOTA
PUBLIC SERVICE COMMISSION

**Otter Tail Power Company
Advance Prudence – Astoria Fuel Inventory System
Application**

Case No. PU-23-66

ADVOCACY STAFF’S POST HEARING BRIEF

INTRODUCTION

Otter Tail Power Company (Otter Tail) filed for an advance determination of prudence seeking to add a liquified natural gas (LNG) storage system at their Astoria Station (Astoria), which is a 250 MW natural gas-fired, frame-style, simple cycle combustion turbine generation facility near Astoria, South Dakota.

The Astoria Station was granted prudence in PU-17-140 and was promoted by Otter Tail to provide capacity, dispatchable energy, and grid support as part of Otter Tail’s two-part plan to reliably meet customers’ electric needs, replace expiring capacity purchase agreements, and prepare for the 2021 retirement of the 1950s-era 140 MW Powder River Basin (PRB) coal-fired Hoot Lake Plant near Fergus Falls, Minnesota. The other component of Otter Tail’s two-part plan was the construction of the 150 MW Merricourt wind generation facility (the Merricourt Project) in North Dakota, which was to provide very competitively priced energy made available by the federal production tax credit (PTC) for wind facilities. Otter Tail’s stated goal was the addition of the Astoria Station and Merricourt Project to meet its customer needs in a least-cost manner.

Otter Tail stated in its original application for the Astoria Station that the simple cycle turbine was a better option compared to the combined cycle turbine because it will

use less natural gas and mitigates the risk of fluctuation in natural gas pricing, with the wind component providing a market and fuel hedge...yet here we are because of risk of fluctuation in natural gas pricing.

Otter Tail stated during the hearing that Astoria continues to be a prudent investment as it is without adding a secondary fuel source. Transcript pg. 22 In 12-19.

Advance Determination of Prudence Legal Authority

Advanced Determination of Prudence is governed by North Dakota Century Code (N.D.C.C.) 49-15-16 as follows:

49-05-16. Advance determination of prudence.

In this section, unless the context otherwise requires, resource addition means construction, modification, purchase, or lease of an energy conversion facility, renewable energy facility, demand response system, transmission facility, or a contract to acquire energy, capacity, or demand response for the purpose of providing electric service. A public utility that intends to make a resource addition may file an application with the commission for an advance determination of prudence regarding the resource addition. The commission shall pay the expenses associated with investigating the application made by the public utility for prudence of a resource addition from the application fee paid by the public utility in accordance with section 49-02-02.

1. The commission may issue an order approving the prudence of a resource addition if:
 - a. The public utility files with its application a projection of costs to the date of the anticipated commercial operation of the resource addition;
 - b. The public utility files with its application a fee in the amount of one hundred seventy-five thousand dollars. Upon request of the commission and with the approval of the emergency commission, the applicant shall pay such additional fees as are reasonably necessary for completion of the application process by the commission. The commission may waive or reduce the fee.
 - c. The commission provides notice and holds a hearing, if appropriate, in accordance with section 49-02-02; and

d. The commission determines that the resource addition is prudent. For facilities located or to be located in this state the commission, in determining whether the resource addition is prudent, shall consider the benefits of having the resource addition located in this state.

2. The commission order must be rendered no later than seven months after the public utility files its application requesting a prudence determination of a resource addition.

3. A resource addition approved by the commission is subject to reporting requirements until commercial operation of the resource addition. The public utility shall provide periodic reports, as directed by the commission, which must include a description of the status of the resource addition and any changes in material circumstances affecting the resource addition.

4. The commission's order determining prudence of the resource addition is binding for ratemaking purposes.

5. Following an initial commission order, the commission may, upon notice and hearing, if appropriate, in accordance with section 49-02-02 determine that continuation of a resource addition is no longer prudent or that its prior order should be modified.

Expenses incurred in processing the case must be paid from the fee, including any previously made refund thereof, filed with the prudence determination application for the resource addition.

6. The public utility may recover in its rates, and in a timely manner consistent with the public utility's financial obligations, the amounts the public utility reasonably incurred or obligated on a prudent resource addition, including accrued allowance for funds used during construction, even though the resource addition may never be fully operational or used by the public utility to serve its customers. The cost amortization period for a discontinued resource addition may not exceed five years from the date commencement of the recovery is approved by the commission. No return on amounts incurred or obligated by the public utility may be authorized for the period after the resource addition is discontinued. The public utility may request an order from the commission for deferred accounting treatment for costs incurred for a discontinued resource addition.

7. There is a rebuttable presumption that a resource addition located in the state is prudent.

Otter Tail has met the criteria for filing an Advance Determination of Prudence, but that does not grant automatic approval.

OTTER TAIL HAS NOT CLEARLY STATED THE NEED FOR THE RESOURCE ADDITION

Otter Tail in its brief states that the commission regularly grants ADP's where there is a need, and the record reflects that the proposed project will satisfy the need. (Otter Tail brief pg. 8) Otter Tail footnotes the following:

NDAC 69-09-12-03 (requiring utilities identify the resources needed to meet forecasted capacity and energy needs); NDAC 69-09-02-33 (requiring utilities to adhere to the principle of least-cost development); Mont.-Dakota Utils. Co., A Division of MDU Res. Gp., Inc., Case Nos. PU-17-268 & PU-17-269, Order at 2 (Nov. 16, 2017) (granting an ADP to MDU for its Thunder Spirit Wind Expansion when MDU's IRP forecasted annual growth and MDU selected a least-cost proposal to expand its existing Thunder Spirit Wind Facility).

This footnote relates to meeting forecasted capacity and energy needs and cites MDU's Thunder Spirit Wind Facility to meet forecasted annual growth and energy needs. Otter Tail has clearly stated capacity and the capacity reduction resulting from an extreme weather event does not short them on capacity creating a need for additional capacity. (Transcript pg. 44 lines 15-18) There is no need for the addition of LNG to meet forecasted capacity and energy needs.

Otter Tail's stated need for the addition of LNG addresses pipeline disruptions in delivered natural gas during severe weather events, and the misalignment of natural gas and energy markets and the cost to Otter Tail customers, not capacity. (Otter Tail Brief pg. 8-9) Mr. Jensen's testimony further shows this is a resource addition to address the derating of capacity. Mr. Jensen stated regarding reliability "onsite fuel storage at Astoria Station will increase the likelihood of Astoria being available during extreme weather events, which will have a direct impact to the amount of capacity credit Astoria will receive to the benefit of our customer." (Transcript pg. 139 lines 18-23) Is the need to save Otter

Tail customers from high costs due to natural gas pricing issues related to extreme weather events or its derating of 50 megawatts?

THE RESOURCE ADDITION IS NOT PRUDENT

The question remains: has Otter Tail shown that the investment into LNG storage is a prudent investment at this point? Advocacy Staff believes that LNG storage is not prudent at this time.

The North Dakota Public Service Commission (PSC) must determine if the costs are reasonable at this time given the circumstances that are known or knowable at this time¹.

Otter Tail has failed to show that building the LNG storage is the least cost option, that the resource addition is necessary at this time, and will be used and useful. LNG storage is an option and solution that, if necessary, may be acceptable. However at this time, it does not appear to be necessary, and the least cost option may be doing nothing. Otter Tail bases its need on extreme weather events and states they will be occurring more frequently. That is pure speculation, and no scientific evidence was introduced into the record to show that extreme weather events are occurring more frequently.

No evidence was introduced that future extreme weather events will produce scenarios where Astoria will not be able to run, only that they have potential to occur.

¹ Rose, Kenneth (2004). *Electric Power: Traditional Monopoly Franchise Regulation and Rate Making*. Oxford: Elsevier Science & Technology.

Testimony showed that extreme weather events must occur at the same time or be the cause of reductions of natural gas available when Astoria will be called upon to run. If there is wind during an extreme weather event, the inability to get gas is not an issue. In nine years, there have only been three weather events that would have potentially impacted Astoria's ability to run: A polar vortex event in 2014 prior to Astoria being built and Winter Storms Uri and Elliott. (Transcript pg. 19 lines 2-8) Astoria was still in testing during Storm Uri and was not operated. (Transcript pg. 19 lines 9-14). Astoria was not able to run during Winter Storm Elliot due to Otter Tail being unable to secure natural gas from the pipeline. (Transcript pg. 20 lines 7-14) Otter Tail was not aware of gas volatility prices when they built Astoria. (Transcript pg. 29 lines 20-25) Otter Tail stated that Astoria gets very reliable natural gas service a vast majority of the time. (Transcript pg. 42 lines 10-14)

The issue raised during the hearing that seems to be driving this resource addition appears to be the derating of capacity. (Transcript pg. 19-20 lines 22-4) Otter Tail's winter accreditation will be reduced by 50 megawatts due to being unable to run during winter storm Elliot. (Transcript pg. 24-25 lines 18-2) This reduction in capacity only reduces the amount of power that Otter Tail has available to sell into the market as excess. (Transcript pg. 26 lines 3-17) Otter Tail is still able to sell the excess energy it can produce up to the full nameplate capacity if it is available. (Transcript pg. 48 lines 4-8) Otter Tail stated it is not short on capacity even with the capacity reduction. (Transcript pg. 44 lines 15-18) Otter Tail does not need to buy additional capacity with a 50 megawatt reduction. (Transcript pg. 48 lines 21-24)

Otter Tail stated in testimony that the difference in price from natural gas and LNG is fairly substantial, and “it is conceivable that natural gas could go above the cost of what we procure, LNG fuel costs. Yeah. I don’t believe it has since we’ve had Astoria, but it’s possible. But by far the largest concern is during the extreme weather events.” (Transcript pg 81 lines 1-5) Otter Tail admits there is very limited times where the price difference in natural gas and LNG makes it a viable option. (Transcript pg. 86 lines 10-18)

The limited times where the LNG addition would save Otter Tail customers was also highlighted by James Heidell. (Transcript pg.186 lines 1-16) Mr. Heidell’s assessment of the cost of the project vs. risk to customers at this time is the so called “self insurance” which is the cost of high fuel charges passed onto customers. At this time is the self insurance is the better choice. (Transcript pg 187 lines 21-22)

The Federal Energy Regulatory Commission (FERC) recently released an Order approving Extreme Cold Weather Reliability Standards Docket No. RD24-1.² These new cold weather reliability standards require balancing authorities, transmission operators, and load shedding entities to account for critical natural gas infrastructure loads in the demand response and the emergency load shedding programs they oversee. This helps to ensure that these programs, when deployed during extreme cold weather conditions, will not further negatively impact natural gas fuel supply issues which could constrain generation unit capacity and threaten reliability. FERC’s order goes on to state the new Reliability Standard EOP-01104 employs a flexible approach, but may require coordination and communication between electric and natural gas entities pertaining to extreme cold weather beyond what has historically occurred. This further demonstrates

² <https://www.ferc.gov/news-events/news/decisions-notice/02152024-02152024>

that the resource addition at this time is not prudent as elements causing issues during extreme weather events are being addressed at many different levels, which may further reduce the need for the addition of the LNG onsite fuel storage.

CONCLUSION

The addition of LNG is not a prudent investment at this time. Extreme weather events are unpredictable and no scientific evidence of them increasing has been presented. Further, an extreme weather event must be widespread and occur with little or no wind before fuel issues become a problem. Adding in the price difference of LNG and natural gas creates a further divide for when this resource addition will be cost effective and useful. The costs are not reasonable at this time given the circumstances that are known or knowable at this time. Advocacy Staff recommends that the Commission deny the resource addition.



Brian Johnson
Special Assistant Attorney General Bar ID 07937
North Dakota Public Service Commission
600 East Boulevard Avenue Dept. 408
Bismarck ND, 58505
701-328-2407

STATE OF NORTH DAKOTA
PUBLIC SERVICE COMMISSION

**Otter Tail Power Company
Advanced Prudence – Astoria Fuel Inventory System
Application**

Case No. PU-23-066

PROPOSED FINDINGS OF FACT, CONCLUSIONS OF LAW AND ORDER

February 29, 2024

Appearances

Commissioners Randy Christmann, Sheri Haugen-Hoffart, Julie Fedorchak

Cary Stephenson, Associate General Counsel, Otter Tail Power Company, 215 S. Cascade Street, Fergus Falls, MN, on behalf of Otter Tail Power Company.

Brian L. Johnson, Special Assistant Attorney General, 122 East Broadway Avenue, Bismarck, North Dakota 58501, on behalf of Public Service Commission Advocacy Staff.

John M. Shuh, General Counsel, Public Service Commission, State Capitol, 600 East Boulevard Avenue, Bismarck, North Dakota 58505, on behalf of the Public Service Commission Advisory Staff.

Timothy J. Dawson, Administrative Law Judge, P.O. Box 1695, 316 North 5th Street, Bismarck, ND 58502-1695.

Preliminary Statement

On February 8, 2023, Otter Tail Power Company (Otter Tail) filed an application with the North Dakota Public Service Commission (Commission) seeking an advance determination of prudence (ADP) under North Dakota Century Code Section 49-05-16 for a liquified natural gas storage (LNG) system to be constructed at Astoria Station (Astoria), Otter Tail's 250 MW natural gas-fired, frame-style, simple cycle combustion turbine generation facility near Astoria, South Dakota.

On October 11, 2023, the Commission issued a Notice of Public Hearing, scheduling a public hearing for December 12, 2023, at 8:30 a.m. in the Commission Hearing room, 12th Floor, State Capitol, 600 East Boulevard Avenue, Bismarck, North Dakota 58505. The Notice specified that the issue to be considered was whether Otter

Tail should be granted an advanced determination that its proposed resource addition is prudent.

On December 12, 2023, the public hearing was held as noticed.

Having allowed all interested persons an opportunity to be heard and having heard and considered all testimony and evidence presented, the Commission makes the following:

Findings of Fact

1. Otter Tail is an investor-owned electric utility headquartered in Fergus Falls, Minnesota, authorized to provide public utility service in North Dakota under the regulatory jurisdiction of the Commission.
2. Astoria is Otter Tail's 250 MW natural gas-fired, frame-style, simple cycle combustion turbine generation facility located near Astoria, South Dakota. Otter Tail placed Astoria Station into service in 2021 following the Commission's issuance of an Order finding Astoria Station prudent in Case No. PU-17-140.
3. As this proposed resource is located outside of the state of North Dakota, there is no presumption of prudence.
4. Otter Tail selected the Astoria location in part because it was in close proximity to Norther Border Pipeline, which was deemed to be a very reliable gas transportation provider.
5. When Astoria was constructed, Otter Tail was only aware of one weather event that may have affected the gas supply at Astoria. That was the Polar Vortex of 2014. Otter Tail made no reference to the potential impact that the Polar Vortex of 2014 might have had upon Astoria.
6. Otter Tail did not build Astoria with onsite fuel but designed it to allow for it to potentially be added in the future.
7. Otter Tail is a member of the Midcontinent Independent System Operator (MISO).
8. Otter Tail has testified that winter weather events have occurred in three of the last ten years. These are the reference Polar Vortex in 2014, Winter Storm Uri in February 2021 and Winter Storm Elliot in December 2022.
9. Astoria was not in service when Storm Uri occurred in December of 2022. Otter Tail has noted that, during Storm Uri, there were not any natural gas supply interruptions at the Astoria delivery point. However, the natural gas prices were highly volatile and had Astoria been in operation, the lack of synchronization of the gas and electric prices would have exposed their customers to large fuel costs charges.

10. Otter Tail testified that the MISO has adopted accreditation to be based 80% upon tier 2 hours (hours where the excess generation is limited) and that fuel unavailability will result in a seasonal reduction in capacity credit for a period of three years.
11. More recently Winter Storm Elliot (December 22-26, 2022) affected Astoria, causing fuel supply interruptions resulting in a forced outage, which is likely to result in MISO derating the facility by an estimated 50 MW of the 285 MW capacity for the winter season for a three-year period.
12. Otter Tail's Post-Filing Brief identifies two significant risks related to these extreme weather events. First, the disruption in pipeline delivered natural gas to the facility. Second, is the misalignment of natural gas and energy markets (intraday price risk).
13. The ramifications of the disruption in pipeline delivered natural gas to the facility is the inability to dispatch power into the MISO market and the potential for disruption of power to Otter Tail customers as well as the possibility of getting derated by MISO.
14. Otter Tail is required by MISO to maintain a winter planning reserve margin (PRM) of 25.5%. At a high level, the PRM is a measure of capacity in excess of Otter Tail's peak demand. Otter Tail's current actual accredited winter PRM is approximately 35% and the potential 50MW derate of Astoria, as a result of Storm Elliot, reduces that by approximately ½ or 5% to approximately 30%. Thus, Otter Tail's present actual winter PRM capacity exceeds the MISO required winter PRM.
15. The financial impact of a facility derate is an inability to sell excess capacity into the MISO market if the PRM exceeds the required reserve margin or conversely the need to acquire excess seasonal capacity if the actual PRM is below the required reserve margins.
16. Otter Tail has not attempted to quantify the potential value of the surplus capacity.
17. Otter Tail testified that intraday pricing risk is driven by the fact that Otter Tail must buy day ahead natural gas for Astoria Station and offer Astoria Station's output to MISO in advance of MISO clearing Otter Tail's offer. Depending on how MISO clears the Company's offer, the Company may need to secure additional natural gas at then prevailing market rates or sell back unused gas. Otter Tail testified that this risk is compounded when considering MISO only guarantees make-whole payments based on offer costs, not actual fuel procurement costs.
18. Fuel procurement costs are a pass-through cost to Otter Tail customers recovered through the fuel clause.
19. Otter Tail has identified that addition of liquified natural gas (LNG) storage as the most effective means to address supply events associated with extreme events and natural gas market volatility. It further states that fuel storage has significant potential financial benefit to Otter Tail customers based upon the ability to sell into the market at a higher price and use lower price stored fuel for generation purposes.

20. On-site fuel storage is one of the possible solutions suggested by MISO, FERC and NERC for generation owners to take action to ensure reliability during extreme events.
21. Advocacy staff noted that MISO does not require, nor would it compensate Otter Tail for fuel storage at Astoria, but rather incentivizes reliable fuel delivery by enforcing capacity reserve margins.
22. Otter Tail testified that its current actual winter PRM is 100 MW or 10% in excess of the level required by MISO and that the potential derate of Astoria related to Storm Elliot would reduce that by an estimated 50MW or 5% as the interrupted. Further, as the MISO winter accreditation policy utilizes three years of history, Storm Elliot will 'fall off' the calculation of accreditation in the Winter of 26-27. Based upon the impact of Storm Elliot, Otter Tail could experience two similar storms in a three-year period and still have adequate capacity.
23. Otter Tail has also asserted that interruptions to deliver natural gas may pose a risk to reliability. During Storm Uri in February 2021, Otter Tail admitted that gas would not have been interrupted at the Astoria site. During Storm Elliot in December 2022, while gas was interrupted for a period of time at Astoria, Otter Tail had sufficient wind generation to offset the loss of Astoria Station. Further, even if Otter Tail not had sufficient wind generation during Storm Elliot, it still had the ability to purchase wind from MISO and is in proximity to the SPP system, which facilitates the transfer of energy between systems. Thus, there is little apparent risk of power interruption to Otter Tail customers at this point.
24. Otter Tail discussed that LNG Fuel Storage would help mitigate the risk of intraday pricing risk and also provides an opportunity for profit from utilizing stored LNG when the gas prices were lower than the market price.
25. Intraday pricing risk is a well-known issue related to Gas-fired power plants. FERC issued Order No. 809 to help 'harmonize' these markets. Additionally, National Association of Regulatory Utility Commissioners (NARUC), has launched the GEAR (Gas—Electric Alignment for Reliability) initiative to address the gas-electric alignment issues. Currently in development there are a number of tools that RTOs can be developing such as multi-day commitments, reliability commitments, and others which would mitigate the intraday pricing risk that is currently borne by the customers.
26. Otter Tail testified that the cost-differential between gas and stored LNG would be in excess of \$10. Thus, the opportunity to sell the stored LNG would likely only be utilized during extreme weather events. Advocacy Staff analysis showed that there were only 24 days since 2014 where this has occurred and would likely not exceed \$50,000 per year outside of the extreme weather events.

27. The uncertainty about the location, frequency, and magnitude of future extreme weather events and whether future developments such as better coordination among gas and electric industries will mitigate fuel supply risks makes it difficult to assess whether LNG fuel storage is justified.
28. The record in this proceeding has illustrated that the cost of LNG Fuel Storage to 'insure' Otter Tail customers is very high as compared to the theoretical financial impact of gas price volatility and potential loss of capacity accreditation.
29. The perceived need for this investment is based upon a small number of recent weather events and the presumption that they will recur with regularity and extremity, that other responsible entities will not succeed in their stated intention to address these same issues and that the cost to customers of taking no action would exceed the cost of this very expensive investment. None of these things is evident based upon the testimony.
30. After considering all of the testimony and other evidence, the Commission finds Otter Tail has not established that the construction of LNG Fuel Storage at Astoria is prudent.

Conclusions of Law

1. The Commission has jurisdiction in this matter.
2. Otter Tail has complied with the provision of N.D.C.C. section 49-05-16.
3. Otter Tail has not shown that the LNG fuel storage at Astoria Station as proposed is a prudent addition at this time.

From the foregoing Findings of Fact and Conclusions of Law, the Commission issues its:

Order

Otter Tail's application for an advanced determination of prudence for the LNG fuel storage at Astoria Station is DENIED without prejudice.

PUBLIC SERVICE COMMISSION

Sheri Haugen-Hoffart
Commissioner

Randy Christmann
Chair

Julie Fedorchak
Commissioner