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July 1, 2020

Mr. Steve Kahl
Director of Administration/Executive Secretary
North Dakota Public Service Commission
State Capitol
600 East Boulevard, Dept. 408
Bismarck, ND 58505-0408

RE: OTTER TAIL POWER COMPANY'S TEN-YEAR PLAN – JUNE 2020

Dear Mr. Kahl:

Enclosed is Otter Tail Power Company's North Dakota Ten-Year Plan in accordance with North Dakota Century Code 49-22-04. A copy of the plan is being filed pursuant to Article 69-06-02-02 of the North Dakota Administrative Code with the County Auditor of each county in which any part of a site or corridor is proposed to be located. Notice of the filing of the plan is being sent to each agency and officer as designated in Article 69-06-01-05.

Should you have any questions, please feel free to contact me at (218) 739-8417 or bhdraxten@otpco.com.

Very truly yours,

/s/ BRIAN DRAXTEN
Brian Draxten
Manager, Resource Planning

kaw
Enclosures
By electronic filing and U.S. mail
c: Cass County Auditor – Michael Montplaisir
Dickey County Auditor – Wanda Sheppard
Mountrail County Auditor – Stephanie Pappa
Pierce County Auditor – Karin Fursather
Sargent County Auditor – Pamela Maloney
Stutsman County Auditor – Nicole Meland

NORTH DAKOTA
TEN-YEAR PLAN

Report RP20
Resource Planning
June 2020
By: Nathan Jensen

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INTRODUCTION

In accordance with the rules and regulations of the North Dakota Public Service Commission (Commission) governing the siting of energy conversion and transmission facilities pursuant to Chapter 49-22 of the North Dakota Century Code, Otter Tail Power Company (Otter Tail or the Company), hereby files this Ten-Year Plan.

Ten copies of this Ten-Year Plan are being filed with the Commission. Notices of the filing of this report have been given to those agencies and officers designated in Article 69-06-01-05 of the Administrative Code. A copy of the plan is being filed pursuant to Article 69-06-02-02 of the North Dakota Administrative Code with the County Auditor of each county in which any part of a site or corridor is proposed to be located.

SECTION A: Existing Energy Conversion Facilities

1. Otter Tail owns 35 percent of the 427 MW rated (Net Dependable Capacity) Coyote power generating station. Otter Tail is the operating agent and provides the filing of the appropriate federal forms. Other co-owners include Northern Municipal Power Agency (Minnkota Power Cooperative (MPC) acts as the agent for Northern Municipal Power Agency), Montana Dakota Utilities (MDU), and Northwestern Energy (NWE). The Coyote facility was commissioned for commercial operation May 1, 1981.

2. Otter Tail owns 100 percent of two combustion turbines located at Jamestown, North Dakota. These combustion turbines have a combined Net Dependable Capacity rating of 42.5 MW. These facilities were commissioned for commercial operation in 1976 and 1978.

3. Otter Tail is contracted to receive energy from a customer owned waste sunflower hull fired cogeneration facility in Enderlin, North Dakota. No energy was received in 2019 from this facility.

4. Otter Tail purchases energy from a number of customer owned wind and solar powered generating facilities in North Dakota. These facilities have a combined capacity rating of approximately 3.3 MW and delivered 4,601 MWh of energy to Otter Tail in 2019.

5. Otter Tail purchases energy from the 21 MW FPL Energy ND Wind II (a wind farm owned by NextEra Energy) that delivered 47,059 MWh to Otter Tail in 2019.

6. Otter Tail purchased the output of 19 MW of wind turbines from Langdon Wind, LLC that delivered 68,534 MWh in 2018.

7. Otter Tail purchases peaking capacity from one customer-owned diesel generator with a nameplate capacity of 2,500 kW.

8. Otter Tail owns 40.5 MW of the Langdon Wind Energy Center located 6-12 miles south of Langdon, North Dakota. The portion owned by Otter Tail began commercial operation in January 2008.

9. Otter Tail owns 48 MW of the Ashtabula Wind Energy Center located in Barnes County. The portion owned by Otter Tail began commercial operation in December 2008.

10. Otter Tail owns 49.5 MW of the Luverne Wind Energy Center located in Steele County. The portion owned by Otter Tail began commercial operation in August 2009.

11. Otter Tail began purchasing energy from the 62 MW Ashtabula Wind III (a wind farm owned by NextEra Energy) in October 2013 that delivered 200,982 MWh to Otter Tail in 2019. Otter Tail has the option to purchase the wind farm from NextEra at the end of 2022.

12. No unit retirements of Otter Tail facilities in North Dakota are planned within the next ten years.

SECTION B: Energy Conversion Facilities Under Construction

Otter Tail currently has two energy conversion facilities under construction.

1. 150 MW wind facility located near Merricourt, ND, with a scheduled completion date of October, 2020.

2. 248 MW natural gas combustion turbine located near Astoria, SD, with a scheduled completion date of December, 2020.

SECTION C: Proposed Energy Conversion Facilities on Which Construction Is Intended Within the Ensuing Five Years

Otter Tail is actively pursuing a utility scale solar project in the 30 to 50 MW range with a possible start date sometime in 2021.

SECTION D: Proposed Energy Conversion Facilities during the Next Ten-Year Time Period

There are currently no additional proposed energy conversion facilities during the next ten-year time period.

SECTION E: Existing Transmission Facilities (Electric)

In-service dates for existing transmission facilities, located entirely within or partially in North Dakota, and owned (or jointly owned) by Otter Tail and operated above 115 kV include:

Transmission Line	In-Service Date
Wahpeton – Fergus Falls 230 kV	1967
Hankinson – Wahpeton 230 kV	1967
Forman – Hankinson 230 kV	1967
Ellendale – Oakes – Forman 230 kV	1967
West Fargo (Sheyenne) – Audubon 230 kV	1969
Drayton – Grand Forks (Prairie) 230 kV	1970
Big Stone – Browns Valley – Hankinson 230 kV	1974
Center – Jamestown 345 kV	1980
Underwood – Harvey 230 kV	1986
Harvey – Balta – Rugby 230 kV	2002
Luverne – Pillsbury 230 kV	2009
Alexandria – Bison 345 kV	2015
Big Stone South – Ellendale 345 kV	2019

No transmission facilities rated above 115 kV are scheduled for retirement within the next ten years.

SECTION F: Existing Transmission Facilities (Pipeline)

None.

SECTION G: Proposed Transmission Facilities on Which Construction Is Intended Within the Ensuing Five Years

Generation Interconnection Projects

Due to generation interconnection activity through the Midcontinent Independent System Operator, Inc. (MISO) interconnection process, Otter Tail is undertaking upgrades to existing transmission lines in North Dakota to allow for the reliable interconnection of new generation projects.

During 2020 and 2021, Otter Tail plans to reconductor and replace numerous structures along 24.06 miles of 230 kV line between Ellendale – Oakes, as well as along 23.25 miles of 230 kV line between Oakes – Forman. Likewise, Otter Tail is also planning to perform certain structure replacements during 2020 along the Forman – Hankinson 230 kV line to increase clearances of the line to allow for higher capacity. These upgrades are needed in order to achieve a higher capacity to accommodate the wind generation being developed in the region.

Otter Tail is finding that generation projects are being completed prior to the completion of their required system upgrades in order to leverage the federal production tax credits. Therefore, operating guides and/or Remedial Action Schemes are being considered as short-term interim solutions until identified upgrades are energized.

Beyond the currently identified generator interconnection related upgrades, additional wind and solar projects are currently being evaluated as part of MISO's interconnection process. If these projects are developed, it is likely that additional transmission projects will be required. Upgrades to existing transmission lines or new projects required for new generation interconnections become part of MISO's regional plan and are coordinated with the local utilities. Future transmission projects identified through MISO's interconnection process will be included in future biennial reports.

Load Expansions/New Load

Otter Tail is regularly contacted by customers that have an interest in adding new load to its transmission system. Most load requests are usually related to commercial load expansions at existing sites, ag processing facilities, pipelines or data mining facilities. These load additions are evaluated carefully by Otter Tail and oftentimes identify that the existing transmission system needs to be reinforced in order to continue providing reliable service with the new load addition. To date, several new load additions have not come to fruition, but in the event that a future load addition does proceed and requires a new transmission project, Otter Tail will coordinate the new project through MISO's regional plan and include it in future biennial reports.

Age/Condition Upgrades to Existing Facilities

Otter Tail tracks the reliability performance of its transmission system on an on-going basis. As part of its annual capital budgeting process, Otter Tail targets line improvements to specific line segments each year that are aimed at improving the on-going reliability performance of its system. Otter Tail prioritizes line improvements across its system each year by comparing the relative performance of each line segment in terms of both momentary and sustained interruptions. As such, Otter Tail undertakes certain line improvement projects each year on line segments that have been determined as 'worst performers' on its transmission system. In addition, Otter Tail reviews overall line condition, accessibility, and other risks that may impact future reliability performance and develops projects accordingly. Upgrades to improve the performance of existing line segments may vary from adding lightning arrestors or updating line insulators, to the most robust upgrade of rebuilding existing lines with new structures, conductor and shield wire.

At the current time, Otter Tail has identified the following 41.6 kV line improvement projects in ND over the next 1 – 3 years:

- Finley – McVille 41.6 kV Line
- Sanborn – Pickert 41.6 kV Line
- Rugby – Granville 41.6 kV Line
- Turtle Lake – Mercer 41.6 kV Line

As Otter Tail's transmission system continues to age, Otter Tail expects more of these types of upgrades/replacements to occur for existing lines in the future. Going forward, Otter Tail will plan to identify future age/condition type projects that are being done to improve the reliability performance of its transmission system in future biennial reports.

Reducing Expenses from MISO/SPP Pancaked Transmission Rates

Central Power Electric Cooperative became a transmission-owning member of Southwest Power Pool (SPP) in 2016. This has exposed Otter Tail to higher transmission service expenses due to now having to pay for SPP transmission service.[1] Otter Tail is currently investigating various options, including potential transmission projects, to help reduce the impact of higher expenses caused by pancaked transmission rates between MISO and SPP.

SECTION H: Proposed Transmission Facilities on Which Construction Is Intended Within the Ensuing Five Years (Pipeline)

None.

[1] Prior to Central Power Electric Cooperative (CPEC) joining SPP, Otter Tail only paid for MISO transmission service and had an Integrated Transmission Agreement (ITA) with CPEC to govern the use of CPEC facilities to serve Otter Tail load.

SECTION I: Proposed Transmission Facilities during the Next Ten-Year Time Period (Electric and Pipeline)

Otter Tail continues to be actively engaged in regional transmission planning efforts. Through these transmission planning activities, it is hard to predict what future transmission projects will be identified and built in the next 10 years. However, as the transmission system approaches its full capability, and with the numerous proposed generation projects within North Dakota, it is inevitable that additional transmission, as well as upgrades to the existing system, will be required to meet the needs of the system. Otter Tail continues to participate in transmission studies looking at the adequacy of the transmission system throughout North Dakota.

SECTION J: Regional Coordination

Otter Tail conducts transmission planning in a coordinated environment, involving neighboring utilities, load serving entities, state regulatory commissions and members of the public.

There are several different efforts underway within the region that are investigating the feasibility of expanding the capability of the transmission grid. Otter Tail continues to actively participate in these efforts to ensure that a reliable and economic transmission system is built across the region in a coordinated manner.

Regional Coordination through the MISO Process

As a transmission-owning member of the MISO, Otter Tail actively participates in various transmission planning efforts, the most significant of which is the annual MISO Transmission Expansion Planning ("MTEP") process. The MTEP process involves a variety of planning analyses to determine the performance of the transmission system for a wide variety of conditions. Through the MTEP process, MISO, with input from various stakeholders, evaluates the system for both reliability and economic needs. The MTEP process is designed to ensure the most efficient and cost-effective or "best fit" transmission expansion plan is developed, considering input from all stakeholders.

Local planning of the Otter Tail facilities is primarily coordinated on a sub-regional level. Otter Tail's locally planned projects are then reviewed by MISO and become part of the MTEP process. Regional coordination through MTEP of local transmission plans results in study efficiencies by keeping a broader group of utilities, states, and stakeholders informed through the transmission planning process to identify the "best fit" transmission plan.

Regional Coordination with non-MISO Transmission Owners

Non-MISO coordination is necessary because the Otter Tail transmission system is highly interconnected with neighboring non-MISO transmission owners. The Otter Tail transmission system is nearly the farthest, most western border of the MISO footprint; therefore, it is interconnected with several transmission-owning utilities that are not members of MISO. This high level of integration requires utilities to jointly plan and coordinate new facilities required for the common service area.

Otter Tail currently has Integrated Transmission Agreements (ITAs) with Minnkota Power Cooperative and Great River Energy. Otter Tail had ITAs with Missouri River Energy Services, East River Electric Power Cooperative and Central Power Electric Cooperative that have since expired and have transitioned to taking transmission service from the regional transmission organizations (MISO and/or SPP). Otter Tail also has other coordination agreements with others such as Xcel Energy, Montana-Dakota Utilities, Manitoba Hydro, NorthWestern Energy and Western Area Power Administration. Regardless of the types of agreements, or status of agreements that exist between utilities, Otter Tail closely coordinates transmission planning activities with its neighboring utilities to identify the least cost transmission plans that are needed to maintain reliability.

Otter Tail also participates in the CapX2020 effort, which is a joint initiative of transmission-owning electric utilities in Minnesota and the surrounding region (including cooperatives, municipal utilities and investor-owned utilities). The CapX 2020 utilities recently released the CapX2050 Transmission Vision Report, which highlights the challenges transmission planners and operators may face to maintain a safe and reliable system as energy production in the region evolves to include more non-dispatchable resources.[2] This collaborative process and the planning studies performed as part of this effort are coordinated with MISO.

As discussed throughout Section J, Otter Tail coordinates extensively with its neighboring utilities to share system plans and identify system enhancements through MISO, and through participation in other coordinated transmission planning efforts. Otter Tail's participation in the MISO study process provides coordinated planning for the entire MISO footprint. Participation in various working groups and committees provides for coordinated planning on a sub-regional basis including both utilities that are MISO members and utilities that are not MISO members.

SECTION K: Environmental Information

Otter Tail employees are involved with other groups in a variety of organizations to keep informed on various environmental issues. The Edison Electric Institute (EEI) and the Lignite Energy Council provide information exchange on environmental issues.

Otter Tail generating plants are subject to stringent federal and state standards and regulations regarding, among other things, air, water and solid waste pollution. Otter Tail estimates that operation and maintenance expenditures related to environmental items at Coyote Station in 2019 were $1,921,282. In addition, there was $6,509,534 in capital expenditures relating to environmental items at Coyote Station in 2019.

Otter Tail has complied in the past and will continue to comply with all requirements of the Commission in siting, operating and maintaining all proposed energy conversion and transmission facilities located in North Dakota.

[2] http://capx2020.com/documents/CapX2050_TransmissionVisionReport_FINAL.pdf

Air Quality

Pursuant to the Federal Clean Air Act (CAA), the United States Environmental Protection Agency (EPA) has promulgated national primary and secondary national ambient air quality standards for criteria air pollutants. The Coyote Station was originally constructed with a spray dryer, followed by a fabric filter, to control sulfur dioxide (SO_2) and particulate matter.

On December 16, 2011, the EPA signed a final rule to reduce mercury and other air toxic emissions from power plants (the MATS rule). Most plants had until April 16, 2015 to comply. Coyote Station meets the requirements by using activated carbon injection for mercury control. Emissions monitoring equipment and stack testing is utilized to verify compliance with the standards.

On March 14, 2011, the North Dakota Department of Environmental Quality (NDDEQ) issued a construction permit to Coyote Station requiring installation of control equipment to limit its nitrogen oxide (NO_X) emissions to 0.50 pounds per million Btu as calculated on a 30-day rolling average basis. The permit was issued under the North Dakota Regional Haze Implementation Plan for the first planning period, and compliance with the limit was required by July 1, 2018. This NO_X control equipment was installed during a spring 2016 outage.

The NDDEQ is working on the second planning period for Regional Haze focusing on making continued reasonable progress towards a national visibility goal. Per NDDEQ's request, on January 31, 2019, Coyote Station submitted a reasonable progress analysis that evaluated SO_2 and NO_X controls. NDDEQ continues to evaluate information for the second planning period, and is required to submit a State Implementation Plan to EPA by July 31, 2021.

Greenhouse Gases

In August 2015 EPA announced final existing source guidelines under Section 111(d) of the Act, known as the Clean Power Plan (CPP). In February 2016 the United States Supreme Court granted emergency applications seeking a stay of the rule. On October 16, 2017 the EPA published a proposed rule to repeal the rule, and on June 19, 2019, the EPA issued the final Affordable Clean Energy (ACE) Rule, replacing the CPP. The ACE Rule proposes several candidate technologies for Heat Rate Improvement measures. The specific impact to Coyote Station is still being reviewed by Otter Tail as the ACE Rule is implemented, and as the NDDEQ develops a state plan.

Water Quality

The Federal Water Pollution Control Act Amendments of 1972 and amendments thereto, provide for, among other things, the imposition of effluent limitations to regulate discharges of pollutants, including thermal discharges, into the waters of the United States. The EPA has established effluent guidelines for the steam electric power generating industry. Discharges must also comply with state water quality standards. A water discharge permit for the Coyote Station was renewed on April 1, 2018 for a five-year term.

Solid Waste

The EPA has promulgated various solid and hazardous waste regulations and guidelines. These provide for the comprehensive control of various solid and hazardous wastes from generation to

final disposal. The NDDEQ issued Coyote Station permits for disposal of ash and other solid wastes.

On December 19, 2014, EPA announced a final rule to further regulate coal combustion residuals (CCRs) under the Subtitle D nonhazardous provisions of the Resource Conservation and Recovery Act (RCRA). The rule has required Otter Tail to meet several new requirements, including installing additional groundwater monitoring wells, publishing data on our CCR units on a website, and developing several new plans. Also, in response to the rule, during a Spring 2019 outage, a new bottom ash conveyor dry handling system was installed, and Otter Tail completed clean closure of three surface impoundments by removing all CCR from the impoundments.

Wildlife

As Otter Tail finalizes construction on the Merricourt Wind Energy Project we are developing procedures to monitor avian and bat fatality and monitor for Whooping Cranes. Avian and bat fatality monitoring will occur for one year after the completion of construction, while Whooping Crane monitoring will occur during the spring and fall migration seasons for the life of the project.

SECTION L: Projected Demand for Service

Historical Growth and Long-Range Forecast

Otter Tail had an all-time high unmanaged winter peak of 924 MW on January 31, 2019 for the hour ending at 9 a.m. The ten-year historical growth of Otter Tail's unmanaged annual peak demand is shown in Table 1. For the purposes of Table 1, annual data reflects the MISO Planning Year that begins in June of the listed year and extends through May of the following year.

Table 1: Historical Unmanaged Annual Peak Demands (MW)

Year	Peak	Annual Growth %	Cumulative Growth %
2010	831		
2011	837	0.7	0.7
2012	872	4.2	4.9
2013	883	1.3	6.2
2014	917	3.9	10.1
2015	897	-2.2	7.9
2016	876	-2.3	5.6
2017	917	4.7	10.3
2018	911	-0.7	9.6
2019	924	1.4	11.0

A long-range forecast was made using an econometric model. This model is designed to incorporate a number of different assumptions about variables such as weather, economic growth, and demographics.

Three scenarios were used in this forecast: The Base Scenario, the Upper Scenario, and the Lower Scenario. The Base Scenario represents the best-fit econometric forecast of the statistically significant variables impacting customer load. The Upper and Lower Scenarios are calculated using confidence intervals that effectively describe the uncertainty around the forecast values.

Otter Tail's projected unmanaged winter peak demand is presented in Table 2 and Otter Tail's unmanaged summer peak demand is presented in Table 3. In Table 2, winter data reflects the MISO Planning Year in which the winter season begins in November of the listed year and extends through April of the following year. In Table 3, summer begins in May and ends in October of the listed year.

Table 2: Forecasted Unmanaged Winter Peak Demands (MW)

Year	Lower	Base	Upper
2020	873	930	987
2021	917	974	1031
2022	920	977	1034
2023	922	980	1037
2024	925	982	1040
2025	927	985	1043
2026	930	988	1046
2027	932	991	1049
2028	935	994	1053
2029	937	997	1056

Table 3: Forecasted Unmanaged Summer Peak Demands (MW)

Year	Lower	Base	Upper
2020	706	763	819
2021	747	804	861
2022	750	807	864
2023	752	809	867
2024	755	812	870
2025	757	815	873
2026	760	818	876
2027	762	821	879
2028	765	820	879
2029	767	826	885

It is important to note that the data provided in Tables 2 and 3 does not reflect planned or committed energy efficiency efforts in Minnesota and South Dakota and that some demand savings would be realized from such efforts.

Demand Response Capability

Otter Tail registers its Direct Load Control under Module E with the MISO. Direct Load Control resources are netted from the demand forecast prior to calculation of the reserve obligation. This resource is obligated to provide sustained load reduction for up to four hours at a time and be available five times in the summer to the MISO in the event of a declared reliability emergency. This obligation does not preclude the Company from relying on these resources to control for capacity events or economic reasons outside of a MISO emergency event.

Direct Load Control – The Radio Load Management System

"Direct Load Control," represents the Company's extensive radio load management system that is used to control customer load during economic or capacity events. This resource was accredited with MISO at 18 MW for June 2020 through May 2021. Under MISO's revised resource adequacy construct that became effective June 1, 2013, demand response is accredited based on its summer capability. Otter Tail has approximately 132,000 customers and approximately 43,000 radio receivers used to control customer loads. The level of control that is available can vary with temperature, customer behavior, and load control responsiveness. For example, more load control is available during extremely cold temperatures in the winter than during moderate temperatures.

Winter season demand response loads are in several categories and can reach as high as 120 MW. These manageable loads include water heaters, thermal storage, residential demand controllers, commercial time of use rates, small dual fuel heating systems, and large dual fuel (industrial and bulk interruptible loads). The radio load management system also has the capability of interrupting as much as 21 MW of summer peak load in the months of June through September. These summer loads consist primarily of water heaters, large dual fuel loads, and cooling systems. Otter Tail continues to add customers to cycling control of central air conditioning (15 minutes on, 15 minutes off), and cycling of cooling systems on the dual fuel and deferred load rates.

The Company's current resource plan forecasts only a slight increase to its demand response capability over the next ten years.

As a company, Otter Tail will continue to use a combination of Demand Resources, energy efficiency, and purchase agreements with other utilities to help meet future capacity deficits. Otter Tail also continues to study and assess the potential for future additions to its generation.

Further detailed information may be obtained from Otter Tail's Resource Plan documents that were filed with the Minnesota, North Dakota, and South Dakota Public Utilities Commissions. The Company's current Resource Plan was filed June 1, 2016.

Operational Improvements to Generation Facilities

Otter Tail continues to explore operating improvements at its generating facilities. These projects are undertaken to increase reliability, increase efficiency, and/or lower the cost of production. In addition to the specific projects mentioned below, cooling tower fans, air compressors, RO pumps, coal feeders and wash pumps are examples of equipment that have been replaced with more efficient variable speed drives to lower station service (thereby increasing efficiency) at our plants.

Big Stone Plant:

In 2020, Big Stone Plant was changed to an economically dispatched unit. In the past the unit was considered must-run and was online every available hour regardless of what the locational marginal price (LMP) was. Big Stone Plant will now cycle offline when it is economically justifiable. Other improvements made in the last two years include:

- Replaced APH seals and installed Duplex Sealing
- Replaced LP Feedwater Heaters
- Replaced Bottom Ash/Economizer Ash Handling Systems
- DCS Hardware and Software Upgrades
- Replace Plant Air Compressor and Dryer
- Replaced SCR Catalyst Layer
- Replaced Bag House Filters
- Replaced Brine Concentrator Controls
- Replaced Turbine Gland Steam Supply Control Valves

Coyote Station:

In 2019 Coyote Station conducted a 3-year major overhaul. This maintenance outage addressed numerous items. The Bottom Ash system was replaced to comply with CCR rules. The pond was cleaned, certified, and closed as a surface impoundment. A combustion optimizer was installed to be able to tune the boiler for optimal combustion and minimize slagging and other inefficiencies. Major maintenance work was conducted on the main turbine, boiler, scrubber and other balance of plant equipment. Damage was found in the turbine blades which was repaired. Boiler dampers, tubes, air ducts, and insulation were all inspected, repaired, and replaced in some cases to ensure the reliability and performance for this equipment. The generator step-up transformer was replaced with new, generator AVR & PSS was replaced, control system was upgraded, and several MCC's and load centers were upgraded.

Jamestown, North Dakota, Lake Preston, South Dakota, and Solway, Minnesota Peaking Plants:

The units continue to be operated during load peaking conditions and to provide transmission stability during emergency conditions and maintenance situations. They have also seen additional run time for reliability reasons in the MISO market. Otter Tail continues to review ways to improve the operational performance of these units.

Hoot Lake Plant:

Both Units #2 and #3 continue to maintain high levels of rating capability and performance. Unit #1, a 7.5 MW nameplate unit built in 1948, was retired in 2005. The company performed a Baseload Diversification Study for Hoot Lake Plant with a specific focus on evaluating retirement and repower options. The Study was submitted in November 2012. The Minnesota Public Utilities Commission's order dated March 25, 3013 approved Otter Tail's plan to install upgrades to the existing Hoot Lake Plant equipment to meet the MATS (Mercury and Air Toxics Standard) rule by 2015, and plan for the retirement of the Hoot Lake plant by May 2021. The MATS upgrade project at Hoot Lake was completed in June 2014.

Description of Generation Facilities

Otter Tail owns or is a co-owner of the following generating facilities:

Coyote Station is a coal-fired 427 MW (Net Dependable Capacity) facility located near Beulah, North Dakota. The Coyote Station is a sister unit to Big Stone Plant, but six years newer. The Coyote Station approved outlet rating is only 427 MW, due to transmission limitations. Coyote Station is a mine-mouth fed facility that uses North Dakota lignite for its fuel source. Otter Tail is a co-owner with MDU, Northern Municipal Power Agency, and NWE. Otter Tail has a 35 percent ownership share in Coyote Station and is the operating agent of Coyote Station. The net generation from Coyote Station in 2019 was 2,061,699 MWh.

Big Stone Plant (BSP) is a coal-fired 474 MW (Net Dependable Capacity) facility located near Milbank, South Dakota. In association with using sub-bituminous coal for its fuel source, BSP burned alternative fuels from 1989-2009. Deliveries of alternative fuels peaked in the mid to late 90s. After a thorough review of the BSP's use of alternative fuels, the plant decided to end the program at the end of 2009.

Otter Tail is a co-owner with MDU, MPC, and NWE. Otter Tail has a 53.9 percent ownership share in Big Stone and is also the operator of the BSP. The net generation from BSP in 2019 was 2,619,088 MWh.

Hoot Lake Plant is a coal-fired facility consisting of 2 generators with a combined capacity of 140 MW (Net Dependable Capacity) located in Fergus Falls, Minnesota. Hoot Lake Plant burns sub-bituminous coal as its fuel supply and receives rail shipments from Burlington Northern. Otter Tail is the sole owner/operator of the Hoot Lake facility. Net generation for Hoot Lake Plant in 2019 was 313,667 MWh.

Otter Tail owns and operates 6 run-of-river hydro units in Minnesota. The total Net Dependable Capacity of the six units is about 2.8 MW.

Otter Tail owns two CT units in Jamestown, North Dakota and a single CT unit in Lake Preston, South Dakota. The Net Dependable Capacity rating for Jamestown unit #1 and unit #2 are 21.7 MW and 20.8 MW, respectively. The Net Dependable Capacity rating for the Lake Preston unit is 20.0 MW. All three units burn #2 fuel oil that is delivered by truck and stored in above-

ground storage tanks. Net generation for the three combustion turbines totaled 708 MWh in 2019.

Otter Tail owns a 43.7 MW (Net Dependable Capacity) LM6000 CT unit and a 1.250 MW diesel unit at Solway, Minnesota. Net generation for Solway in 2019 was 52,970 MWh.

Otter Tail owns 40.5 MW of the Langdon Wind Energy Center located 6-12 miles south of Langdon, North Dakota. The portion owned by Otter Tail had net generation of about 137,190 MWh in 2019. Otter Tail owns 48 MW of the Ashtabula Wind Energy Center located in Barnes County, North Dakota. The portion owned by Otter Tail had net generation of about 139,342 MWH in 2019. Otter Tail owns 49.5 MW of the Luverne Wind Farm located in Steele County, North Dakota. The portion owned by Otter Tail had net generation of 165,726 MWH in 2019.