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June 29, 2012

Mr. Darrell Nitschke
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 2012

Dear Mr. Nitschke:

Enclosed are an original and nine (9) copies of Otter Tail Power Company's North Dakota Ten-Year Plan in accordance with NDCC 49-22-04. Notice of the filing of this plan is given pursuant to Article 69-06-02-02 of the North Dakota Administrative Code to the state agencies and officers as designated in Article 69-06-01-05 of the Administrative Code. A copy of Otter Tail Power Company's Ten-Year Plan has also been filed with the County Auditor of any county in which any part of a preferred or alternate site or corridor is proposed to be located.

Should you have any questions, please feel free to call Kerry Kaseman at 218-739-8693 or kkaseman@otpc.com.

Very truly yours,

/s/ KERRY KASEMAN
Kerry Kaseman
Resource Planner

pmm

Enclosures

By electronic filing and UPS overnight mail

- c: Cass County Auditor – Michael Montplaisir
- Dickey County Auditor – Beverly Kuska
- Mountrail County Auditor – Joan Hollekim
- Richland County Auditor – Harris Bailey
- Sargent County Auditor – Sherry Hosford
- Stutsman County Auditor – Noel Johnson

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NOTICE OF FILING

June 29, 2012

RE: OTTER TAIL POWER COMPANY'S TEN-YEAR PLAN – JUNE 2012

In accordance with the rules and regulations of the North Dakota Public Service Commission governing the siting of energy conversion and transmission facilities pursuant to NDCC 49-22-04, Otter Tail Power Company hereby gives notice that on June 29, 2012, they filed their Ten-Year Plan with the North Dakota Public Service Commission. This Notice of Filing is being sent to the state agencies and officers designated in Article 69-06-01-05 of the North Dakota Administrative Code.

NORTH DAKOTA TEN-YEAR PLAN



**Report RP12-5
Resource Planning
June 2012
By Kerry Kaseman**

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INTRODUCTION

In accordance with the rules and regulations of the North Dakota Public Service 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, 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 state agencies and officers designated in Article 69-06-01-05 of the Administrative Code

SECTION A: Existing Energy Conversion Facilities

1. Otter Tail Power Company, (Otter Tail) owns 35% of the 418 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% of two combustion turbines located at Jamestown, North Dakota. These combustion turbines have a combined Net Dependable Capacity rating of 41.8 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, ND. No energy was received in 2011 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 1 MW and delivered 560.041 MWh of energy to Otter Tail in 2011.
5. Otter Tail purchases energy from the FPL Energy ND Wind II 21,000 kW wind farm owned by NextEra Energy that delivered 64,418 MWh to Otter Tail in 2011.
6. Otter Tail purchased the output of 19,500 kW of wind turbines from Langdon Wind, LLC that delivered 77,501 MWh in 2011.
7. Otter Tail purchases peaking capacity from two customer-owned diesel generators with a total nameplate capacity of 3.6 MW.
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 of 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. No unit retirements of Otter Tail facilities in North Dakota are planned within the next ten years.

SECTION B: Energy Conversion Facilities Under Construction

None.

SECTION C: Proposed Energy Conversion Facilities On Which Construction Is Intended Within The Ensuing Five Years

The 2010 Otter Tail resource plan includes the addition of 50 MW of nameplate wind generation capacity by 2012 and up to 50 MW of nameplate natural gas-fired simple cycle combustion turbine capacity by 2015. Some or all of these resources may be located in North Dakota.

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

The 2010 Otter Tail resource plan includes the addition of 50 MW of nameplate wind generation capacity by 2012 and up to 250 MW of nameplate natural gas-fired simple cycle combustion turbine capacity by 2018. Some or all of these resources may be located in North Dakota.

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:

<u>Transmission Line</u>	<u>In-Service Date</u>
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

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

Due to the large number of generation interconnection projects proposed on the Otter Tail system, Otter Tail anticipates that upgrades to existing transmission lines in North Dakota may be required to reliably interconnect future projects. In consideration of the uncertainty of future

projects in the region, it is possible that operating guides and/or special protection schemes could be implemented as a short-term interim solution in lieu of actual transmission upgrades until other future projects are confirmed and a regional transmission plan is formulated. This regional plan would be coordinated with the local utilities and the Midwest Independent Transmission System Operator (MISO).

Transmission Projects Related to Reliability Concerns

Casselton – Buffalo 115 kV Line

The Casselton – Buffalo 115 kV project was approved as a Baseline Reliability Project (BRP) within Appendix A of the 2011 MISO Transmission Expansion Plan (MTEP11) by the MISO Board of Directors in December of 2011 under project 3481 (facility numbers 6432, 6433, and 6434). The project involves the construction of 16 miles of 115 kV line and substation modifications at Buffalo.

Transmission planning studies performed by OTP have identified this project as the preferred plan for serving the increased load in eastern North Dakota. MISO confirmed the results of the OTP studies through the MTEP11 process and designated this project as a Baseline Reliability Project with regional cost sharing. Along with the Casselton – Buffalo 115 kV line, other underlying upgrades required on the transmission system include replacement of the Buffalo 345/115/41.6 kV transformer and reconductoring a portion of the Mapleton-Sheyenne 115 kV line. These underlying upgrades have been included in the MISO approval for this project. In addition to the regional reliability benefits offered to eastern North Dakota, this project will also directly benefit the Casselton area and provide back-up service to the Tharaldson Ethanol Plant.

It is anticipated that construction on this project will begin in 2012 and extend into 2013. It is likely that the Buffalo 345/115/41.6 kV transformer replacement and Mapleton-Sheyenne 115 kV line reconductor will not occur until after the new 115 kV line is energized in order to minimize reliability impacts during replacement of these facilities.

Jamestown Area Voltage Control

Recent transmission planning studies for both the Center – Grand Forks 345 kV project (Minnkota Power Cooperative) and the CapX Fargo – Monticello 345 kV project have shown voltage control concerns in the Jamestown area. Coordinated transmission planning studies among the regional utilities has led to the recommendation of a reactive power plan to meet the reliability requirements once both of these projects are placed into service.

Minnkota Power Cooperative has performed a study that has recommended that the existing transformers along the existing Coyote – Center – Jamestown – Buffalo – Maple River 345 kV line should have their taps adjusted to increase the voltage profile of the 345 kV line. This tap change was agreed to by OTP and MPC and field personnel made the recommended changes in early May 2012. To date, the voltages along the 345 kV line have performed as expected.

These transformer tap changes were included in the reactive power studies that were completed for the Fargo – Monticello 345 kV project. Through these reactive power studies for the Fargo – Monticello project, additional voltage control devices were recommended at the Jamestown substation. OTP will be proceeding with the installation of a new 25 MVAR capacitor bank and a 25 MVAR reactor on the 115 kV bus at the Jamestown substation. The reactor will help reduce voltages during light load situations while the capacitor bank will help increase voltages during peak load situations.

This reactive power equipment at Jamestown is just a portion of the overall plan for maintaining voltages at acceptable levels. In addition, reactors are being planned at other locations on the system along the new Fargo – Monticello 345 kV line as well as at the Center substation, as part of MPC’s Center – Grand Forks 345 kV line. In total, this reactive equipment is expected to maintain voltages within acceptable levels.

Oakes Area Transmission Improvements

Transmission planning studies have shown the inability of the existing transmission system to serve the load in an area around Oakes, ND during critical contingencies. OTP has collaborated with Central Power Electric Cooperative (CPEC) to develop the preferred transmission plan for serving the joint load in this area. The recommended plan involves the following key components:

- 230/41.6 kV Transformer
- 8 Miles of 41.6 kV Transmission Line
- 4 – 230 kV Circuit Breakers
- 4 – 41.6 kV Circuit Breakers
- 1 – 1800 KVAR Capacitor Bank

Load in this area has shown sustained growth over the past 10 years leading to the existing transmission system becoming insufficient during certain times of the year. In addition to improving the adequacy of the transmission system, this project will also add sectionalizing capability along the existing Ellendale – Hankinson 230 kV line and will help minimize momentary and sustained interruptions to the Oakes and Forman area customers. The Ellendale – Oakes – Forman – Hankinson 230 kV line is a portion of one of the few east-west 230 kV paths connecting low-cost generation resources from western North Dakota to Minnesota and South Dakota.

This project is planning to be approved as an Appendix A project by the MISO Board of Directors in December of 2012 through the MTEP12 efforts. The Oakes area transmission project is referenced in MTEP project 3658, facility numbers 6817, 6818, and 6819.

Hankinson Transformer Addition

OTP and Central Power Electric Cooperative (CPEC) are working on a joint reliability project near Hankinson, ND. This project involves the addition of a second 230/41.6 kV transformer, an expansion of the 230 kV and 41.6 kV buses at the Hankinson Substation, and the replacement of a 230 kV circuit switcher with a 230 kV circuit breaker. This project is needed to enhance the reliability of the system by installing duplicate 230 kV deliveries to the 41.6 kV system and introducing new interrupting capabilities for 230 kV line faults. OTP's portion of this project involves the 230 kV ring bus, while CPEC is focused on the installation of the second 230/41.6 kV transformer and the 41.6 kV bus expansion. This project is needed for load growth that has occurred in this area and has mutual benefits to both OTP and CPEC.

This project is planning to be approved as an Appendix A project by the MISO Board of Directors in December of 2012 through the MTEP12 efforts. The Hankinson transformer addition is referenced in MTEP project 3431, facility 6327.

Parshall Area Upgrade

Western North Dakota is experiencing a large amount of load growth due to the exploration of oil drilling and recovery. Most of this load growth is occurring on the transmission system owned, operated, and maintained by load serving cooperatives in western North Dakota, which receive their transmission service and generation capacity from Western Area Power Administration (WAPA) and/or Basin Electric Power Cooperative (BEPC). As a result of this load growth, an extensive system of existing 41.6 kV and 69 kV lines in western ND are planning to be upgraded to 115 kV in order to increase the load serving capability of the transmission system. The upgrade of the existing 69 kV system to 115 kV impacts an existing 69/41.6 kV connection between OTP and Mountrail-Williams Electric Cooperative (MWEC) near Parshall, ND. After detailed studies of the transmission system in this area, with the consideration of different transmission alternatives, OTP prefers to re-establish a connection with MWEC near Parshall by installing a new 115/41.6 kV transformer. This new 115/41.6 kV connection at Parshall will allow a back-up source to this area in the event the primary source to the 41.6 kV system (Max 115/41.6 kV transformer) is out of service. Ownership arrangements between OTP and MWEC have not been identified yet, but would be expected to be determined through future discussions with MWEC.

Given the recent conclusions from transmission planning studies, the Parshall area upgrade is planning to be submitted to MISO as an Appendix A project during the 2013 MISO Transmission Expansion Planning (MTEP13) efforts, which starts in September of 2012.

CapX Transmission Initiative

Otter Tail is a participant in the CapX 2020 effort that is currently involved in four different transmission lines referred to as the CapX Group 1 projects. These projects include:

- Brookings County – Hampton 345 kV Line (approximately 200 miles)

- Fargo – Monticello 345 kV Line (approximately 250 miles)
- Hampton – Rochester – LaCrosse 345 kV line (approximately 150 miles)
- Bemidji – Grand Rapids 230 kV Line (approximately 70 miles)

Otter Tail is an owner in the Brookings County – Hampton, Fargo – Monticello, and Bemidji – Grand Rapids projects.

A portion of one of the initial projects, a 345 kV transmission line from the Fargo, ND area to the Monticello, MN area is located in North Dakota and is shown in Figure 1. The project participants have received all of the required permits for the Minnesota portion of the project.

The project participants are working through the state processes to obtain a Corridor Certificate and a Route Permit for the North Dakota portion of the project. The current schedule for this project plans to build this new line in sections starting from the south (Monticello, MN) and working towards the northwest (Fargo, ND) with the entire line expected to be in-service around mid-2015.

As part of the Fargo – Monticello 345 kV project, the project participants are working with Minnkota Power Cooperative to construct a new 345 kV switching station just north of Mapleton called Bison. The new switching station will tap the existing Buffalo – Maple River 345 kV line. The new Bison switch station will need to be energized as part of the final portion of the project from Alexandria to Fargo in the mid-2015 timeframe.

Figure 1: Proposed 345 kV line from Fargo, ND area to Monticello Area



Transmission Projects Related to Generator Interconnection Requests

Jamestown Area 115 kV Line Upgrades

OTP has completed a major renovation to the existing Spiritwood substation near Jamestown, North Dakota in order to allow interconnection of a new 99 MW generator being developed by Great River Energy. The project was completed under the Generator Interconnection Agreement (GIA) between MISO, OTP, and GRE in conformance with the MISO Open Access Transmission Tariff (OATT) under 2 separate interconnection requests (G645 for 50 MW and G788 for 49 MW). The generator has performed some preliminary testing; however, Great River Energy has filed an Attachment Y for the Spiritwood generator, allowing for a 3-year suspension. Based on the latest correspondence with GRE, OTP is expecting that the Spiritwood generator will achieve commercial operation in January 2013.

The work at the Spiritwood substation involved a generator interconnection component as well as a load-serving component. In total, the substation was built as a new 6-breaker ring bus to accommodate 2 out-going 115 kV transmission lines, a 115/41.6 kV transformer, two 115/12.5 kV distribution transformers, and the generator step-up transformer from the generator. The network upgrades for the generator interconnection portion of this project included the following:

- (3) 115 kV circuit breakers (for two 115 kV lines and generator step-up transformer)
- Relay upgrades at adjacent substations due to generator
- Line relocations of existing 115 kV and 41.6 kV lines to allow for substation expansion

To accommodate a full 99 MW output level from the new generator at Spiritwood, there is also a need to upgrade approximately 3.5 miles of 115 kV line from the Jamestown Peaking Plant Substation to the Jamestown Downtown Tap Substation to the Jamestown North Substation. OTP has performed a facility study to estimate the cost of this upgrade as being approximately \$1.95 Million. Generator Interconnection Agreement (GIA) negotiations for G788 (the latter 49 MW request) have been completed with the interconnection customer for the full 99 MW output of the project. It is expected that an operating guide will be put into place to allow temporary operation of the Spiritwood generator until the 115 kV upgrades are completed.

Sheyenne – Audubon 230 kV Line

Interconnection studies performed by Minnkota Power Cooperative (MPC) for the LuVerne and Ashtabula wind farms have identified the need to upgrade the Sheyenne – Audubon 230 kV line. This transmission line is co-owned by Xcel Energy and OTP, with OTP owning approximately 96% of the line. Detailed engineering studies performed by OTP have identified that numerous structures along the existing 230 kV line will need to be modified in order to increase the line-to-ground clearance, and thus, the capacity, of this line. In order to allow interconnection of the wind farms in an expedited manner, and to determine the status of other pending projects under development at the time of the interconnection studies, a temporary wind-adjusted rating methodology was implemented in mid-2009 to prevent this

transmission line from overloading during real-time operating conditions. OTP's guidelines for wind-adjusted ratings allows for a 5-year timeframe. The sunset date of the 5-year timeframe for the wind-adjusted ratings of the Sheyenne – Audubon 230 kV line are expected to expire in mid-2014. Due to the length of this line and the anticipated schedule to complete the necessary upgrades, investments for this 230 kV line upgrade are expected to begin in 2012 in order to meet a mid-2014 in-service date. This project is a result of the generation interconnection to the MPC transmission system and will be funded by the interconnection customers.

This project currently resides within Appendix B of the MISO Transmission Expansion Plan (MTEP) as project 3204, facility 5950. This project is expected to move into MTEP Appendix A during the 2013 MTEP planning cycle, which starts in September of 2012.

Otter Tail continues to see a lot of activity within North Dakota related to increased interests in new wind generation development, large load expansions related to the ag-processing industry and energy transport industry (oil pipelines). As these projects are further developed, it is possible that additional transmission will be required. Further study analysis will be required to determine the optimum transmission plan and will be coordinated through local and regional transmission planning processes in place at MISO.

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

None.

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

Big Stone South – Ellendale 345 kV Line

As part of the 2011 MISO Transmission Expansion Plan (MTEP11) approval, the MISO Board of Directors endorsed a portfolio of transmission projects across the MISO footprint called the Multi-Value Projects (MVPs). The MVPs have been identified and recommended to meet public policy requirements within the MISO states through 2026.

The MVP portfolio approved by the MISO Board of Directors includes 18 distinct transmission projects across MISO, with OTP being involved in three of these projects, namely: Brookings – Hampton 345 kV line, Big Stone – Ellendale 345 kV line, and Big Stone – Brookings 345 kV line. The MTEP11 report included a total portfolio cost of these 18 MVPs of approximately \$5.2 Billion.

As mentioned above, two 345 kV projects approved in the 2011 MISO Transmission Expansion Plan (MTEP11) connect in the vicinity of Big Stone, South Dakota, namely Big Stone South – Ellendale 345 kV and Big Stone South – Brookings 345 kV. To facilitate the development of these two MVPs, it is necessary to develop a new 345 kV switchyard near Big Stone. After a review of the existing Big Stone 230/115 kV substation, it has become

evident that physical limitations at the site will not allow for an adequate expansion for these future 345 kV terminations and transformers. Therefore, OTP is planning to build a new “Big Stone South” substation approximately 1.5 miles south of the existing Big Stone substation. The new Big Stone South substation and the existing Big Stone substation (i.e. “Big Stone Plant”) are planning to be connected by two 230 kV lines to electrically connect the Big Stone Plant substation to the Big Stone South substation. The Big Stone South substation is planning to include two new 345/230 kV transformers and adequate space for the new 345 kV terminals into and out of the Big Stone area with room for future expansion. The existing Big Stone Plant substation will also require minor modifications to accommodate the additional 230 kV terminations for the new 230 kV lines down to the Big Stone South substation. The new 345 kV lines into and out of the Big Stone area (Ellendale and Brookings) will terminate at the new Big Stone South substation. This configuration was included within the models that were used by MISO in studying the MVPs during MTEP11.

The MVPs being developed in the Big Stone area include three distinct projects, which are Big Stone Plant – Big Stone South 230 kV, Big Stone South – Ellendale 345 kV, and Big Stone South – Brookings 345 kV. The Big Stone Plant – Big Stone South 230 kV portion of the project is viewed as the first critical development in the Big Stone area in order to develop the new 345 kV lines that emanate from Big Stone.

OTP is working collaboratively with Montana-Dakota Utilities (MDU) to develop one of the new 345 kV MVP transmission projects that will be from Big Stone South to Ellendale. This project is in the early stages of development, but is envisioned to be approximately 150 miles long and terminate at an expanded Ellendale substation in south central North Dakota. At this time, OTP is planning to own 50% of the project. Major components of the project will involve a new substation expansion at Ellendale, performed and owned by MDU, the 345 kV line itself, as well as a new termination at the Big Stone South substation. The schedule for this project is under development with the in-service date currently anticipated to be in 2019.

The Big Stone South – Ellendale 345 kV project is viewed as the westernmost segment of 345 kV lines being developed through the MVP portfolio. Therefore, this segment of line is scheduled to be completed after other major west-east transmission lines are completed to allow the efficient delivery of low cost generation resources from the western portion of the MISO footprint.

The 2011 MISO Transmission Expansion Plan (MTEP11) included details about this project by referencing the project under number 2220.

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 to collaborate in the planning process.

There are several different transmission initiatives underway within the region that are investigating the feasibility of expanding the capability of the transmission grid in order to integrate additional resources. 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 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.

Local planning of the Otter Tail facilities, less than 100 kV, is primarily coordinated on a subregional level. Otter Tail’s locally planned projects are reviewed by MISO and become part of the MTEP. Developing local transmission plans at a subregional level and rolling them up to MISO provides for regional coordination of local transmission plans, which leads to transmission projects being built in a coordinated manner to address the transmission needs of the larger region. This coordination for identifying new transmission projects also augments the larger region by providing for a transmission plan that maximizes the benefits of the new projects, and in many cases, reduces the number of new transmission projects that are needed than if transmission planning was done solely on an individual basis. Regional coordination of local transmission plans also results in study efficiencies by keeping a broader group of utilities, states, and stakeholders informed through the transmission planning process.

During the course of the MTEP process, MISO seeks opportunities to coordinate or consolidate, where possible, individually defined transmission projects into more comprehensive, cost-effective developments. MISO coordinates with Transmission Owners, and considers the input from various stakeholder groups (through the Subregional Planning Meetings, Planning Subcommittee, and Planning Advisory Committee) to develop expansion plans to meet the needs of the transmission system. This multi-party collaborative process allows for all projects with regional and inter-regional impacts to be analyzed for their combined effects on the transmission system. Moreover, this collaborative process is designed to ensure the most efficient and cost-effective transmission expansion plan is developed, while giving consideration to the inputs from all stakeholders.

Additionally, subregional, state, and non-MISO coordination is necessary because the Otter Tail transmission system is highly interconnected with neighboring non-MISO/Mid-Continent Area

Power Pool (“MAPP”) 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, but instead remain members of MAPP.

Regional Coordination with non-MISO Transmission Owners

Otter Tail participates in the CapX 2020 (Capacity Expansion by 2020) effort, which is a joint initiative of transmission-owning electric utilities in Minnesota and the surrounding region created on the basis of expanding the electric transmission grid to ensure electric reliability for several years into the future. The CapX 2020 utilities (including cooperatives, municipal utilities and investor-owned utilities) collaboratively assess the current transmission system and plan for the necessary future transmission infrastructure investments. This collaborative process and the planning studies performed as part of this effort are coordinated with MISO.

Otter Tail has Integrated Transmission Agreements (ITA) with Central Power Electric Cooperative, Missouri River Energy Services, Minnkota Power Cooperative, and Great River Energy. These agreements provide for joint use of transmission facilities in common areas of service and require that the utilities jointly plan and coordinate additional facilities required for the common service area. In addition, Otter Tail has agreements for joint use of transmission and interconnection with Xcel Energy, East River Electric Cooperative, Montana-Dakota Utilities, Manitoba Hydro, Northwestern Energy, and Western Area Power Administration. These agreements were all precipitated through joint studies and coordination of facilities required to provide high reliability of service at the minimum cost. Facilities proposed and committed to through this local process become part of the MTEP.

As discussed above, Otter Tail coordinates extensively with its neighboring utilities to share system plans and identify system enhancements through the MISO, and through local participation in coordinated transmission planning (such as CapX 2020, and the ITAs). Otter Tail’s participation in the MISO study process provides coordinated planning for the entire 15-state MISO footprint, while participation in various working groups and committees provides for coordinated planning on a subregional basis, which includes 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. Edison Electric Institute (EEI), the Utility Air Regulatory Group, and the Lignite Energy Council all provide information exchange on environmental issues.

Otter Tail Power 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 2011 were \$3,488,384. In addition, there was \$947,331 in capital expenditures relating to environmental items at Coyote Station in 2011.

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

Air Quality

Pursuant to the Federal Clean Air Act (the Act), the United States Environmental Protection Agency (EPA) has promulgated national primary and secondary standards for air pollutants. The Coyote Station has sulfur dioxide removal equipment. The removal equipment, referred to as a dry scrubber, consists of a spray dryer, followed by a fabric filter. The Coyote Station is currently operating within all presently applicable federal and state air quality and emission standards.

On December 19, 1996, the EPA adopted nitrogen oxide emissions regulations that are applicable to cyclone-fired boilers such as those used at the Coyote Station. The regulations required that the cyclone boilers meet the emission standards beginning on January 1, 2000 and Coyote Station meets those standards.

On February 23, 2010, the North Dakota Department of Health (NDDOH) issued a Best Available Retrofit Technology Permit to Construct to Coyote Station. The permit was issued under the North Dakota Regional Haze Implementation Plan. Due to concerns with the initial compliance averaging time and compliance schedule conveyed by the U.S. Environmental Protection Agency, the NDDOH issued a revised Permit to Construct. The revised permit requires installation of NOx control technology that will reduce the discharge of NOx emissions to levels below 0.50 lb/mmBtu as measured by a 30-day rolling average. Compliance with the limit must be met beginning on July 1, 2018. On March 1, 2012 EPA signed a final rule for partial approval of the North Dakota Regional Haze State Implementation Plan that included the NOx emission rate permit conditions for Coyote Station as proposed by the NDDOH. The rule became effective on May 7, 2012.

The Act contains a list of hazardous air pollutants (HAPs), which includes certain substances believed to be emitted by Otter Tail plants. The Act called for EPA studies of the effects of emissions of the listed pollutants by electric utility steam generating plants. The EPA completed the studies and sent reports to Congress, and on December 14, 2000, the EPA announced that it affirmatively decided to regulate only mercury emissions from electric generating units. The EPA published final mercury emission rules in the May 18, 2005 Federal Register that would have allowed the EPA to regulate mercury emissions based on a cap and trade approach. On February 8, 2008, the United States Court of Appeals for the District of Columbia granted petitions for review of the EPA mercury rules. The Court issued a mandate vacating the rules on March 14, 2008, and the Supreme Court denied the appeals of other parties to the litigation on February 23, 2009. The EPA rulemaking is now proceeding under the maximum achievable control technologies (MACT) provision of the Act section 112(d) for existing units and section 112(g) case-by-case MACT provisions for affected new units. The EPA signed a final MACT rule on December 16, 2011 that places restrictions on several HAPS, including mercury. Based on the Company's review of the final rule, it appears that Coyote Station would meet the requirements

by installing mercury control technology such as activated carbon injection. Emissions monitoring equipment and/or stack testing will also be needed to verify compliance with the standards.

The two combustion turbines located at Jamestown are not impacted by the Act's emission reduction standards.

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. Water discharge permits for the Coyote Station were renewed on April 1, 2008 for a five-year term.

Section 316(b) of the Clean Water Act requires facilities to install the best technology available (BTA) for minimizing adverse environmental impact caused by cooling water intake structures. Coyote Station utilizes cooling towers that meet the classification of closed-cycle cooling, which has historically been considered to be a BTA. However, on March 28, 2011 EPA signed a proposed rule that would revise Section 316(b). If finalized, the proposed rule would require Coyote Station to submit studies and documentation to prove that its intake structure meets all of the rule's specifications, and Coyote may also need to install technologies such as a fish handling and return system. Comments on the proposed rule are due on July 19, 2011, and according to a settlement agreement EPA must issue a final rule by July 27, 2012.

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 North Dakota Department of Health issued Coyote Station permits for disposal of ash and other solid wastes.

On May 4, 2010, EPA released two alternative proposals to regulate disposal of coal combustion residuals (CCRs) which include fly ash, bottom ash, boiler slag, and Flue Gas Desulfurization materials.

The Bevill Amendment to the Resource Conservation and Recovery Act (RCRA) excludes CCRs from regulation as hazardous waste under Subtitle C of the Act. However, EPA was directed to study the impacts of CCRs and make a determination of whether or not regulation of CCRs under Subtitle C was necessary. The EPA determined that regulation of CCRs was not warranted in 1993. In 2000, EPA concluded that significant improvement had been made in waste management practices as a result of state requirements, but gaps still remained. At that time, EPA decided to retain the Bevill exemption and to establish minimum national standards for CCR management under Subtitle D of RCRA, which would be managed by the states. The Subtitle D standards were never issued as part of the 2000 determination.

EPA began its re-review of CCR regulation following the December 2008 rupture of a Tennessee Valley Authority surface impoundment located near Kingston, Texas. Public statements by the EPA Administrator and other EPA officials signaled that EPA intended to regulate CCRs as hazardous waste under Subtitle C. While, it is clear from their May 4, 2010 proposal that they would prefer to regulate CCR under Subtitle C, they offered two proposals for public comment, one under Subtitle C and the other under Subtitle D. Over 400,000 comments on the proposals were submitted to EPA, which they must evaluate prior to issuing a final rule.

SECTION L: Projected Demand For Service

Historical Growth and Long Range Forecast

Otter Tail had an unmanaged winter peak of 838 MW on January 19, 2012 for the hour ending at 8 p.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 Midwest ISO planning year that begins in May of the listed year and extends through April of the following year.

Table 1: Historical Unmanaged Annual Peak Demands (MW)

Year	Peak	Annual Growth %	Cumulative Growth %
2001	642	0.0	0.0
2003	717	4.1	4.1
2004	712	-0.7	3.4
2005	690	-3.1	0.3
2006	727	5.4	5.7
2007	740	1.8	7.5
2008	810	9.5	17.0
2009	818	1.0	18.0
2010	832	1.7	19.7
2011	838	0.7	20.4

A long-range forecast was made using an econometric model developed with the assistance of Christensen Associates of Madison, Wisconsin. 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 Midwest ISO 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
2012	736	804	847
2013	759	815	870
2014	766	822	878
2015	774	830	886
2016	783	839	896
2017	793	850	906
2018	804	861	917
2019	815	872	929
2020	835	892	949
2021	855	912	969

Table 3: Forecasted Unmanaged Summer Peak Demands (MW)

Year	Lower	Base	Upper
2012	635	700	746
2013	642	698	754
2014	666	722	777
2015	673	729	785
2016	681	737	794
2017	690	747	803
2018	700	757	814
2019	711	768	825
2020	723	780	837
2021	743	800	857

It is important to note that the data provided in Tables 2 and 3 do not reflect planned or committed energy efficiency efforts in Minnesota and South Dakota and that some demand savings would be realized from such efforts. Otter Tail anticipates the demand savings could be as much as 39 MW by 2020 based on plans in Minnesota and South Dakota. North Dakota has not approved an energy efficiency plan for implementation.

Demand Response Capability

Otter Tail has two Demand Resources registered under Module E with the Midwest ISO. Both resources are load modifying resources (LMR) that are netted from the demand forecast prior to calculation of the reserve obligation. These resources are obligated to provide sustained load reduction for up to 4 hours at a time and be available five times in the summer to the Midwest ISO 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 Midwest ISO emergency event.

Direct Load Control – The Radio Load Management System

The first Demand Resource, “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 at 15 MW for June 2012 through September 2012, 25MW for October 2012, 50 MW for November 2012 and March and April 2013, 85 MW for December 2011 and February 2012, 90 MW for January 2012, and 15 MW for May 2012. Otter Tail has approximately 129,500 customers and approximately 41,000 of those customers have some type of load control. 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 130 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 20 MW of summer peak load in the months of June through September. These summer loads consists primarily of water heaters, irrigation, the large dual fuel industrials and residential air conditioning. Otter Tail continues to add customers to the newest program that allows cycling control of residential central air conditioning (15 minutes on, 15 minutes off).

Although 2009 measurement data showed the load management system was capable of achieving higher levels than the level accredited, those higher levels related to control levels during a minimum number of hours (less than 4) and were impacted by weather and load diversity. Additional testing and analysis needs to be conducted before Otter Tail would be confident accrediting our demand response at the higher levels. The newness of the Module E accreditation, the measurement and verification requirements for continued accreditation, and the risk of potential penalties were also significant factors in the lower accreditation level registered by the Company.

Over a 4 year period from 2003 to the summer of 2007, Otter Tail replaced a significant portion of our load management equipment. This included over 40,000 radio receivers on customer’s premises. Software and hardware technologies were implemented to allow the use

of the Company's voice radio communication system for load management signal transmissions.

The update of the radio load management system was necessary since the previous technology was over 20 years old and replacement components were becoming difficult to find. Otter Tail had also experienced a continued reduction, due to failed radio receivers, in the overall effectiveness of the system leading to a reduction in the total megawatts of controlled load. The replacement of the load management system has improved the amount of controllable load and provided greater confidence in the system.

Firm Service Level – Customer Contracts

The second Demand Resource registered with MISO is a "Firm Service Level" resource that represents Otter Tail's contract with a large industrial customer to shed load to a firm service level in the event of a capacity event. This resource was certified at 15 MW for each month of the 2012/2013 planning year (June 2012 through May 2013). Unlike the "Direct Load Control" resource that reduces load when called upon by our load management system, this resource must demonstrate that it did not exceed the registered firm service level during a capacity event.

The Company's current resource plan adds 5 MW of summer capability and 10 MW of winter capability every five years. Of particular benefit to the Company is the smoothing of the reserve obligation that Demand Resources provide from winter to summer.

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.

Otter Tail has purchased summer and winter season peaking capacity for the year 2012. The Company has a capacity purchase contract with Wisconsin Electric Power Company totaling 50 MW from June 1, 2011 through May 31, 2013. Otter Tail also has a capacity purchase contract with Great River Energy totaling 50 MW from December 1, 2010 through December 31, 2014 and another contract totaling 100 MW from January 1, 2015 through May 31, 2017. Further detailed information may be obtained from Otter Tail's Resource Plan documents that are filed with the Minnesota Public Utilities Commission. Copies of the Company's Resource Plans are provided to the North Dakota Public Service Commission. The Company's current Resource Plan was filed June 25, 2010.

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:

There were three significant projects completed in 2011 that will contribute to improved reliability in the future. Replacing the baghouse bags and cages will allow for continued reliable operation of the plant at full load. If bags were to fail, the unit would have to be derated to avoid increased emissions and to change the failed bags. The secondary superheater outlet header and pendants were replaced as element alignment issues and age had placed the boiler at increased risk for tube failures. The Digital Control System (DCS) was also replaced in 2011. The new control system was needed due to obsolescence for future pollution control equipment operation, and will allow for improved efficiency.

The owners of Big Stone Plant have approved the addition of environmental retrofits to the plant. The plan calls for selective catalytic reduction (SCR) to reduce emissions of nitrogen oxide and a dry-scrubber to reduce sulfur dioxide. Both nitrogen dioxide and sulfur dioxide are expected to be reduced by 80 to 90 percent. Construction will begin in 2013 and the goal is to have the equipment operational in early 2016.

Coyote Station:

Coyote has been upgrading lighting and HVAC systems with new, more efficient units. The generator stator will be rewound in 2012 to maintain reliability.

Jamestown, ND, Lake Preston, SD, and Solway, MN 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 Midwest ISO 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 was directed by the Minnesota Public Utilities Commission to perform a baseload diversification study for Hoot Lake Plant, with a specific focus on evaluating retirement and repower options. The study includes analysis of the transmission implications of all options studied and will include analysis of the costs of all Environmental Protection Agency regulations that affect its operations and its plans for compliance. This study will be completed in November of 2012.

Description of Generation Facilities

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

Coyote Station is a coal fired 418 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 ND lignite for its fuel source. Otter Tail is a co-owner with Montana Dakota Utilities (MDU), Northern Municipal Power Agency (Minnkota Power Cooperative (MPC) acts as the agent for Northern Municipal Power Agency), and Northwestern Energy (NWE). Otter Tail has a 35% ownership share in Coyote Station and is the operating agent of Coyote Station. The net generation from Coyote Station in 2011 was 3,051,012 MWh.

Big Stone Plant (BSP) is a coal fired 478 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 90's. After a thorough review of the BSP's use of alternative fuels, the plant decided to end the program at the end of 2009.

Several factors led BSP to this decision. Capital repairs were required for the handling facility, primarily new walking floors. Supplies of the various fuels have dwindled, with BSP being the outlet of last resort in many cases. Maintenance costs for routine upkeep remain consistent, even with a lower number of tons moving through the facility. Tire derived fuel continued to create problems in the fuel conditioners, resulting in higher than expected maintenance costs. Finally, new EPA requirements for combusting non-hazardous secondary materials made it difficult to determine which fuels can be burned. The plant intends to mothball the handling system. If other opportunities present themselves in the future, they will be evaluated.

Otter Tail is a co-owner with MDU, MPC, and NWE. Otter Tail has a 53.9% ownership share in Big Stone and is also the operator of the BSP. The net generation from BSP in 2011 was 2,459,107 MWh.

Hoot Lake Plant is a coal-fired facility consisting of 2 generators with a combined capacity of 140.9 MW (Net Dependable Capacity) located in Fergus Falls, Minnesota. Hoot Lake Plant burns sub-bituminous coal as its fuel supply and receives rail shipment from Burlington Northern. Otter Tail is the sole owner/operator of the Hoot Lake facility. Net generation for Hoot Lake Plant in 2011 was 787,921 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 2.7 MW. The six hydro units produced net generation of 24,949 MWh in 2011.

Otter Tail owns two CT units in Jamestown, ND and a single CT unit in Lake Preston, SD. The Net Dependable Capacity rating for Jamestown unit #1 and unit #2 are 21.0 MW and 20.8 MW, respectively. The Net Dependable Capacity rating for the Lake Preston unit is 20.4 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 was 1,721 MWh in 2011.

Otter Tail also has a 2,000 kW standby diesel generator located at its System Operations Control

Center in Fergus Falls, MN. The generator had net generation of about 22 MWh in 2011.

Otter Tail owns a 42.1 MW (Net Dependable Capacity) LM6000 CT unit and a 1.250 MW diesel unit at Solway, MN. Net generation for Solway in 2011 was 31,624 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 160,883 MWh in 2011. 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 164,049 MWh in 2011. 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 178,031 MWh in 2011.