GREAT RIVER ENERGY™

12300 Elm Creek Boulevard
Maple Grove, Minnesota 55369-4718
763-445-5000
greatriverenergy.com

July 1, 2015

Mr. Darrell Nitschke
Executive Secretary, Director of Administration
North Dakota Public Service Commission
600 East Boulevard Avenue – State Capitol
Bismarck, ND 58505-0480

Dear Mr. Nitschke:

Enclosed is an original and 10 copies of Great River Energy's (GRE) North Dakota 10-Year Plan Report, 2015-2024 (Report) to the North Dakota Public Service Commission (Commission) as required by Chapter 49-22-04 of the North Dakota Century Code (NDCC).

In accordance with Chapter 69-06-02-02 of the NDCC, GRE has provided a copy or notice of the Report to the necessary parties.

GRE has included an extra copy of the Report and a self-addressed stamped envelope and requests that the Commission provide GRE with a file stamped copy.

Please contact me at (763) 445-6103 or lrossmccalib@grenergy.com if you have any questions or comments.

Sincerely,

Laureen L. Ross McCalib
Manager, Resource Planning and Regulatory Affairs
GREAT RIVER ENERGY

Enclosures (11)

c: NDPSC (10)
County Auditors (4)
ND State Agencies and Officials (Letters of Confirmation only)

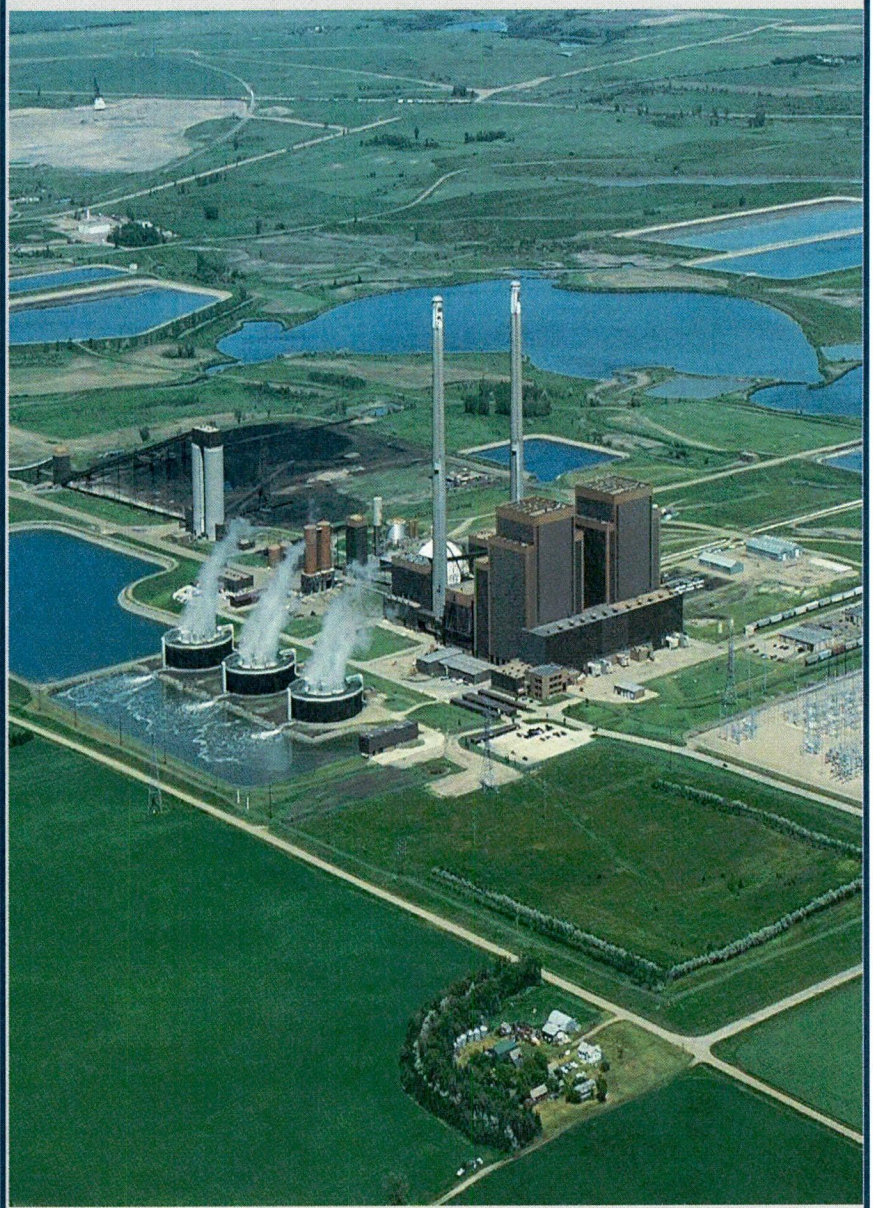
GREAT RIVER ENERGY™

North Dakota 10-Year Plan Report

2015-2024

Submitted to
The North Dakota Public Service Commission

July 1, 2015



12300 Elm Creek Blvd
Maple Grove, MN 55369

GREATRIVERENERGY.COM

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INTRODUCTION

This report was prepared in accordance with the North Dakota Public Service Commission's (Commission) Guidelines (Guidelines) for compliance with the requirements of Chapter 49-22-04 of the North Dakota Century Code.

Great River Energy (GRE) has concluded that some information that would be provided under Sections E and F and Exhibits 3 and 5 pursuant to the Guidelines qualifies as Critical Energy Infrastructure Information (CEII) and, therefore, has not included the information in these pages. GRE offers to provide the information to the Commission upon request.

SECTION A: Existing Energy Conversion Facilities

GRE's generation capacity consists of coal, refuse-derived fuel (RDF), wind, natural gas, and oil-fired units. The coal-fired units are located at Stanton, Spiritwood and Underwood, North Dakota. Spiritwood Station, a 99 Megawatt (MW) combined heat & power (CHP) plant entered commercial operation on November 1, 2014.

GRE installed eight distributed solar PV arrays in Minnesota during 2014 and an additional 12 installations are being completed in 2015. A 250 kilowatt (kW) array was installed at GRE's Maple Grove, Minnesota headquarters. Nineteen more GRE-owned 20 kW arrays will be installed at member cooperative locations. Nine member sites will be expanded to include member community solar projects. All the installations are expected to be complete by fall 2015.

GRE currently has no plans to retire any of its existing North Dakota energy conversion facilities within the next 10 years. GRE and Dairyland Power Cooperative ("DPC") negotiated an agreement that terminated GRE's obligation to purchase 50 percent of the output of DPC's Genoa 3 unit, effective as of June 1, 2015.

Table 1 below shows the summer season ratings of GRE's generating plants. The ratings are Net Dependable Capacity as determined in the North American Electric Reliability Corporation (NERC) Generating Availability Data System (GADS).

Table 1- GRE's Existing Energy Conversion Facilities

Unit Name	Summer Capacity (MW)
Owned Resources	
Arrowhead Emergency Generating Station (Diesel)	n/a
Cambridge CT (Peaking)	20.8
Cambridge CT2 (Peaking)	156.4
Coal Creek Station (Diesel)	2.1
Coal Creek Station 1 (Coal)	566.1
Coal Creek Station 2 (Coal)	574.9
Elk River CT (Peaking)	183.3
Elk River Station 1-3 (RDF)	28.9
Lakefield (Diesels)	2.0
Lakefield Junction (Peaking)	503.7
Maple Lake CT (Peaking)	20.2
Pleasant Valley Station (Peaking)	407.0
Rock Lake CT (Peaking)	20.8
Spiritwood (Coal, CHP)	99.0
St. Bonifacius CT (Peaking)	58.8
Stanton Station (Coal)	188.6
Stanton Station (Diesel)	1.0

SECTION B: Energy Conversion Facilities Under Construction

None.

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

While GRE has identified no specific facilities for construction in the next five years in North Dakota, GRE continues to evaluate its future needs.

SECTION D: Proposed Energy Conversion Facilities During the Next 10-Year Time Period

GRE has no specific proposed energy conversion facilities as defined by Chapter 49-22-03 of the North Dakota Century Code.

GRE continues to evaluate its future needs.

SECTION E: Existing Transmission Facilities (Electric)

GRE has concluded that its existing transmission facilities qualify as CEII. A map of the transmission facilities that GRE owns and operates in North Dakota will be made available upon request. Summary information on GRE's North Dakota transmission facilities is provided in Table 2 below.

Table 2 – GRE's Existing Electric Transmission Facilities in North Dakota

Facility	Voltage (kV)	AC/DC	Install Year
Stanton – Leland Olds	230	AC	1966
Stanton – McHenry Tap	230	AC	1966
McHenry Tap – McHenry	230	AC	1966
McHenry – Balta	230	AC	1966
Balta – Ramsey	230	AC	1966
Ramsey – Prairie	230	AC	1966
Stanton – Square Butte	230	AC	1966
McHenry Tap – Coal Creek	230	AC	1979
Stanton - Coal Creek	230	AC	1979
Coal Creek – Dickinson, Minnesota	± 400	DC	1979

GRE is not planning to retire any existing transmission facilities in North Dakota within the next 10 years.

GRE is rebuilding the Ramsey-Prairie line based on poor structure strength. Due to the high water condition in the area, route adjustments may be made to remove the transmission lines from being over the body of water. In some cases, additional easements may be required.

The Commission's Guidelines require a copy of Federal Energy Regulatory Commission (FERC) Form 12. The information previously provided in FERC Form 12 is now found in FERC Form 715. A copy of GRE's most recent filing is available upon request.

SECTION F: Existing Transmission Facilities (Pipeline)

GRE has a water pipeline and accompanying pumping station located near Coal Creek Station that has been in service since August 1, 1979. GRE concludes that the information qualifies as CEII and has not provided it in this document. However, specific information on the facilities and a map will be provided upon request.

SECTION G: Proposed Transmission Facilities on Which Construction is Intended Within the Ensuing Five Years (Electric)

GRE's participation in the CapX2020 transmission initiative is described in Section J.

Additional information can be found at www.capx2020.com.

GRE is reviewing two potential transmission projects that may result in new transmission construction in North Dakota within the next five years.

The first project is proposed by Xcel Energy and Basin Electric Power Cooperative to serve the Minot area. Xcel Energy is proposing a line from GRE's McHenry substation to the Minot area. GRE's participation in the project would be confined to the McHenry substation. GRE and Xcel Energy will be coordinating on the responsibilities of the project as the project gets further developed.

The second project is an approximately three mile, 115 kV transmission line proposed by GRE in the Jamestown area that will enhance reliability to multiple stakeholders in the area. The GRE proposal is a transmission tie between Spiritwood substation in the Otter Tail Power (OTP) Load Balancing Area (LBA) and a proposed CHS substation which will be in the Western Area Power Administration (WAPA) LBA. GRE's proposal is one option to serve the CHS load. GRE regards its proposed project as least cost, most reliable, and creating better efficiency by connecting the Spiritwood generation station to the CHS industrial load. The tie would provide reliability benefits to OTP's load that is served from the Jamestown 115 kV loop, provide another transmission connection for Spiritwood Station that would resolve stability swing issues, and provide another source to the CHS plant. The CHS plant will need transmission upgrades on the WAPA system to be served reliably. GRE is working with stakeholders in the area on this proposal.

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 10-Year Period (Electric and Pipeline)

None beyond those projects identified above in Section G.

SECTION J: Regional Coordination

The electric grid is heavily interconnected and must be evaluated, operated, and expanded in a coordinated manner to assure reliability and cost-effectiveness. GRE's transmission planning is closely coordinated with other organizations. GRE is a member of and participates directly in several regional entities:

- The Midcontinent Independent System Operator (MISO), which administers a tariff providing for regional transmission services, energy and ancillary services markets, and resource adequacy requirements. MISO also has responsibilities for regional transmission planning, coordination, and expansion. GRE is a transmission owning member and market participant. Further information about MISO is available on-line at *www.misoenergy.org.* MISO's transmission expansion plans (MTEP-2014 being the most-recently approved plan) are also available at their web site under the "Planning" tab and contained in the "MISO Transmission Expansion Planning (MTEP)" link.

- MISO conducts Sub-regional Planning Meetings (SPMs) four times each year to encourage an open and transparent planning process and to provide a forum for coordination and discussion of transmission issues and proposed projects among utilities and other interested stakeholders.

- The Midwest Reliability Organization (MRO), a non-profit organization of regional utilities established to develop regional reliability standards and ensure compliance with standards of the North American Electric Reliability Corporation (NERC) as well as its own. Further information about MRO is available on-line at *www.midwestreliability.org* and about NERC at *www.nerc.com.*

- The Mid-Continent Area Power Pool (MAPP), which historically provided resource pooling and transmission coordination functions for its members across a large part of the Upper Midwest. For GRE and other MISO members, these functions have largely been transitioned to MISO. GRE's transmission system is no longer part of MAPP and GRE is no longer a member of the MAPP generation reserve sharing pool although GRE continues to participate in some MAPP transmission studies. Further information about MAPP is available on-line at *www.mapp.org*.

- The Minnesota Transmission Owners (MTO) group, a consortium of 16 sponsoring utilities and three participating government agencies, fulfills the utilities' statutory obligations for transmission planning in the state of Minnesota. These obligations include the development of the Minnesota Biennial Transmission Plan, as well as studies associated with meeting the Minnesota Renewable Energy Standard (RES) requirements. Further information about the MTO group is available at *www.minnelectrans.com*.

- CapX2020, a joint initiative of 11 regional transmission utilities to develop a long-range vision and transmission expansion projects to ensure that load in the region can be served reliably, provide outlet capability for renewable and other generation additions and supports regional reliability of the transmission system. As a first phase of transmission expansion, all four CapX2020 projects have received Certificates of Need and Route Permits from the Minnesota Public Utilities Commission and similar permits from North Dakota, South Dakota, and Wisconsin. The projects are well into construction or energized.

- CapX2020 and the MTO group have engaged in several planning studies that provide an updated vision of the transmission system to meet needs further into the future, including delivering renewable energy sufficient to meet the renewable energy requirements of states in the region. The studies were closely coordinated with MISO, neighboring transmission owning utilities and a diverse group of stakeholders formalized as the Technical Review Committees. MISO also has numerous studies underway with similar objectives, but that consider a broader geographic area. GRE and the CapX2020 utilities actively participate in these studies.

  Further information about CapX2020, the proposed projects, and studies are available on-line at *www.capx2020.com and www.minnelectrans.com*.

- A Minnesota Legislative Omnibus Energy Bill, which was passed in the spring of 2013, required the MN utilities and transmission companies, in coordination with MISO, to perform a MN Renewable Energy Integration and Transmission Study (MRITS) under the direction of the Dept. of Commerce. The analysis incorporated and built upon analyses that have previously been done. This study examined system reliability while increasing the Minnesota Renewable Energy Standard (RES) to 40 percent by 2030 and to higher proportions thereafter. The study identified critical issues and necessary transmission upgrades. The final report was completed on November 5, 2014 and can be found at http://mn.gov/commerce/energy/images/final-mrits-report-2014.pdf.

- The federal American Recovery and Reinvestment Act (ARRA) has directed the development of interconnection-based transmission plans. Twenty-four planning authorities in the Eastern Interconnection collaborated in a planning process known as the Eastern Interconnection Planning Collaborative (EIPC). The final report was released January 2015. EIPC is presently studying the constraints on the natural gas pipeline system and its impacts to electric system reliability resulting from 1) contingencies on the natural gas pipeline system that impact delivery of natural gas to generators, and 2) contingencies on the electric system that may significantly impact the natural gas pipeline system. Further information is available at www.*eipconline.com*.

Recommended Measures for Regional Coordination:

None beyond the activities described.

SECTION K: Environmental Information

Clean Air Act Title IV Requirements. Coal Creek, Stanton, and Spiritwood stations, as well as several of GRE's combustion turbine stations, have affected units under the federal acid rain regulations (Title IV of the Clean Air Act Amendments).

These regulations limit NO_X levels at Coal Creek Station to 0.40 lb/MMBtu at each unit and at Stanton Station to 0.46 lb/MMBtu for Unit 1 and 0.40 lb/MMBtu for Unit 10. The facilities comply with their applicable limits through the installation of low NO_X burners and other combustion controls including over-fire air. All affected GRE facilities have proper pollution control equipment and operational procedures to ensure compliance with their applicable NO_x limits.

The acid rain program also creates a market for SO_2 emission allowances. Under this program, the U.S. Environmental Protection Agency (EPA) allots a specified number of SO_2 allowances to each unit for each year. Each unit is required to hold one SO_2 allowance for each ton of SO_2 emissions on a calendar year basis. Utilities' options for compliance are to:

- "under-control" and buy allowances,
- "over-control" and sell allowances, or
  - hold allowances for future use;
  - trade or transfer allowances in power sales or other transactions,
  - pool allowances with other utilities to mitigate risk, or
  - use allowance futures contracts and options to hedge against future price changes.

Upgrades have been made to the scrubbers on both units at Coal Creek Station and on Unit 10 at Stanton Station.

Coal Creek Station's two units are allotted 44,497 SO_2 allowances per year. Through its use of improved scrubbing and our DryFining™ technology, the station has reduced emissions of pollutants, including SO_2, while improving overall plant efficiency. (See Coal Drying Section)

Stanton Station's two units are allotted 8,781 SO_2 allowances per year. In 2004, Stanton Station switched from lignite to Powder River Basin (PRB) coal, resulting in lower emissions.

Excess SO_2 allowances from our Coal Creek and Stanton stations are used for compliance by other GRE facilities, including Spiritwood Station.

No additional modifications should be required for continued compliance with the SO_2 provisions of the acid rain program.

Regional Haze. EPA published final regional haze regulations in 1999. The goal of these regulations is to improve visibility in Class I areas, such as national parks and wilderness areas, by gradually reaching "natural conditions" in 2064. The first phase of this rule requires certain power plants to install Best Available Retrofit Technology (BART) to control SO_2, NO_X, and particulate matter (PM) emissions. In December 2009, North Dakota Department of Health (NDDH) issued its final BART determinations for public comment as part of its regional haze state implementation plan (SIP). These emission controls must be installed and operational no later than five years after EPA approves North Dakota's SIP or finalizes its own federal implementation plan (FIP). EPA's final SIP/FIP determinations for North Dakota were published on April 6, 2012. EPA approved North Dakota's SIP relative to Stanton Station and portions relative to Coal Creek Station with the exception of NO_x. As a result, these BART controls must be installed no later than April 2017.

EPA also finalized its FIP for Coal Creek Station NO_x emissions. GRE disagreed with EPA's FIP for Coal Creek Station NO_x which would require selective non-catalytic reduction (SNCR) technology. In April 2012 GRE filed a petition for review with the Eighth Circuit Court of Appeals. North Dakota also filed a petition with the Eighth Circuit. On September 23, 2013 the court vacated EPA's FIP, stating that EPA was arbitrary and capricious in issuing the FIP by not looking at all the factors; in particular, EPA's failure to consider the existing pollution controls. At this point, EPA must either (1) reissue the FIP with full consideration of all of the factors, or (2) act on the resubmitted SIP. To date, EPA has not indicated what course of action it will take.

GRE (and, separately, NDDH) filed a petition for reconsideration with EPA on March 1, 2013. The petition requests that EPA review GRE's supplemental analysis and NDDH's supplemental evaluation, and confirm the state's original determination that SNCR is not required for Coal Station NO_x control. To date, EPA has not responded to the petition.

Coal Creek and Stanton stations have been working diligently on their BART control strategies required by the SIP and do not anticipate any difficulty meeting the regulatory timelines.

Mercury and Hazardous Air Pollutants. Since the late 1990s GRE has been an industry leader in researching mercury reduction technologies at our plants. We continue to work with partners such as Electric Power Research Institute (EPRI), U.S. Department of Energy (DOE), and North Dakota's Energy & Environmental Research Center (EERC) to identify and test novel mercury reduction technologies.

In February 2012, EPA published its final Mercury and Air Toxics Standards (MATS) rule for electric generating units which took effect on April 16, 2012. The rule establishes emission limits for essentially four categories of hazardous air pollutants: mercury, non-mercury metals, acid gases and volatile organic compounds.

Utilities have had three years to come into compliance with the rule (April 16, 2015). Our North Dakota plants have installed and are operating very cost-effective and current technologies in compliance with the new rule. Demonstration of compliance must be made no later than October 16, 2015 and we do not anticipate any difficulty meeting the demonstration deadline.

Greenhouse Gas Emissions. In late 2009, EPA issued its final Greenhouse Gas Reporting Rule, which requires GRE facilities to track and report greenhouse gas (GHG) emissions. GRE has been tracking and reporting CO_2 emissions to EPA for all acid rain program affected units since 1995. The new EPA GHG reporting rule increases the number of GHGs that must be reported and adds additional smaller emission units at our plants to our existing tracking and reporting compliance programs. Sulfur hexafluoride (SF_6) emissions from our transmission facilities must also be reported. GRE is in compliance with the reporting deadlines.

On September 20, 2013 EPA issued a draft rule for <u>new</u> sources. The draft rule includes separate standards for coal-fired and natural gas-fired units. GRE prepared and submitted comments to EPA by the May 9, 2014 deadline. EPA has indicated it will issue the final rule by mid-summer 2015.

On June 18, 2014 EPA published a draft rule for <u>existing</u> sources: the Clean Power Plan (CPP). The proposed CPP would establish a nationwide goal to reduce CO_2 emissions from the power sector by 30 percent from 2005 levels by the year 2030. To accomplish that, the EPA has proposed emissions

intensity reduction goals that are unique to each state. The proposed 2030 reduction goal for North Dakota is 10.6 percent. GRE's DryFining™ technology has reduced CO_2 emissions by four percent from Coal Creek Station. The November 2014 startup of GRE's combined-heat-and-power plant, Spiritwood Station, is helping to lower North Dakota's CO_2 emissions intensity.

GRE prepared and submitted comments to EPA on November 25, 2014. EPA has indicated it will issue the final rule by mid-summer 2015, along with a draft federal implementation plan.

GRE is engaged with North Dakota in discussion and input regarding the development of North Dakota's state implementation plan which will be due one to three years after publication of the final rule.

GRE remains active in trying to shape federal regulation in concert with various groups like Coalition for Innovative Climate Solutions and Midwest Power Sector Collaborative. Through these and other organizations, GRE has had the opportunity to influence the final rules through feedback to EPA and others. GRE continues to be a funding member of the Energy & Environmental Research Center's Plains CO_2 Reduction partnership which conducts research into CO_2 sequestration.

Internally, GRE continues to evaluate opportunities for carbon reduction and offsets. GRE has adopted a plan to reduce our exposure to GHG regulation that is measured, responsible, minimizes rate impacts, and ensures reliable service. The plan includes provisions to:

- Address potential base load stranded costs through the accelerated depreciation of Coal Creek Station and Stanton Station;
- Manage carbon dioxide emissions to 2005 levels or lower;
- Implement cost-effective opportunities to reduce GHG emissions now and develop and implement a plan to substantially reduce GRE's dependence on coal by 2028; and
- Meet any future growth with conservation, energy efficiency, renewable energy, natural gas and market purchases.

The proposed CPP is highly controversial and without a doubt the final rule will be litigated once it is released.

Fly Ash Sales. GRE has actively pursued beneficial reuse opportunities for the coal combustion products generated at Coal Creek Station and Stanton Station.

As a by-product of coal combustion, GRE generates approximately 520,000 tons of fly ash per year at Coal Creek Station. Historically, fly ash was stored in landfills, but over the last 10 plus years GRE has been very successful in finding alternative uses for it. It is primarily used as a partial replacement for cement, which makes the concrete stronger and more durable than concrete made with cement alone. It has also been used in other products. For example, fly ash was used in the backing of the carpet in GRE's headquarters building.

Beneficial use of ash, in lieu of land filling, avoids cement production, reducing CO_2 emissions in the cement production process. For each ton of fly ash that is used as a cement replacement, greenhouse gas emissions are estimated to be reduced by just over 0.8 tons. Since 1998, more than 3.5 million cumulative tons of CO_2 have been avoided through beneficial use of GRE ash.

Stanton Station fly ash has been used to replace cement and scoria fines as a product to absorb the oil/water sludge created during oil well drilling and for soil stabilization. Stanton continues to improve

upon their fly ash utilization in the oil field industry. No Stanton Station fly was land filled in the last year.

Through the beneficial use of ash, GRE also avoids storing the ash in landfills, resulting in cost savings of over $7 per ton. Since 1998, approximately $25 million in cumulative land filling costs have been avoided through beneficial use.

Coal Combustion Residuals (CCR) Disposal. On April 17, 2015 the final rule to regulate coal combustion residuals (coal ash) as a non-hazardous waste under Subtitle D of the Resource Conservation and Recovery Act (RCRA) was published in the Federal Register. The rule becomes effective on October 14, 2015. Great River Energy supports the EPA's decision to designate coal ash as a non-hazardous waste. However, as currently structured, the regulation is enforced only through citizens' suits. This enforcement approach has the potential to create inconsistent implementation of the rule. Legislation is being considered that would allow EPA to delegate the enforcement of the rule's provisions to states. This legislation would create more consistency and facilitate compliance.

Great River Energy facilities are in compliance with existing North Dakota rules that regulate coal ash from its power plants. As a result, GRE's facilities already meet many of the new requirements of Subtitle D of RCRA. Great River Energy is actively working to comply with the remaining provisions of the rule in a cost-effective and protective manner and does not anticipate any difficulty meeting the regulatory timelines.

Effluent Limitations Guidelines. Effluent limitations guidelines are national standards, based on the performance of treatment and control technologies, for wastewater discharges to surface waters and municipal sewage treatment plants. EPA published proposed guidelines for steam electric generating facilities on June 7, 2013. The public comment period was extended to September 20, 2013. GRE, along with several of our trade groups, filed comments by the deadline. EPA and plaintiffs in *Defenders of Wildlife, et al. v. EPA* had reached an agreement that extended the court-ordered deadline for EPA to finalize the effluent limitations guidelines for the steam electric power generating industry to May 22, 2014. On April 7, EPA and plaintiffs entered a consent decree modification that now extends the deadline to September 30, 2015.

Impaired Waters and Total Maximum Daily Loads. Every two years EPA, under the Clean Water Act, requires states to publish and submit an updated list of waters that do not meet designated uses due to pollutant impacts. The §303(d) impaired waters list includes lakes, streams, and rivers with impairments for use as drinking water, fishable waters, swimming, industrial use, and/or irrigation.

Once a water body is listed, the state must begin the process of addressing the impairment. The first stage of this process is development of a total maximum daily load (TMDL). A TMDL is the total maximum daily pollutant load a water body can receive from all sources while maintaining applicable water quality standards and supporting the water body's designated uses.

The development of a TMDL is designed to assess the load on a water body from point sources, non-point sources, and natural background conditions. Once these loads are quantified, each source can be assigned a pollutant load expected to ensure the receiving water body will meet water quality standards and designated uses.

At this time, TMDLs have either been developed or are in development for an increasing number of water bodies. As this process proceeds, TMDLs will likely be developed for water bodies to which GRE either has or is seeking permitted discharges. This could change discharge limits, result in limits for additional analytical parameters, or even possibly preclude permitting of a new or expanded discharge to a given water body. The most likely affected parameters include mercury, phosphorous, total suspended solids, and temperature.

In many instances the impairments mentioned above have significant contributions from non-point and natural background sources. Due to the difficulty in controlling the loads from these sources, significant reduction goals may be allocated to point sources such as GRE's permitted discharges. Retrofitting existing facilities and implementing new pollutant reduction technologies will likely require significant capital expenditure to achieve relatively small reductions for a given pollutant. Based on this it appears pollutant trading and restoration projects will play a significant role in the TMDL process. GRE will continue to monitor TMDL development and assess potential impacts to our facilities.

Aquatic Life Protection at Cooling Water Intake Structures. Section 316(b) of the Clean Water Act requires that the location, design, construction, and capacity of a cooling water intake structure (CWIS) reflect the best available technology (BAT) for minimizing environmental impact, primarily by reducing the amount of fish that are impinged or entrained at a cooling water intake structure. As part of a settlement agreement EPA developed new regulations to address impacts to aquatic life at CWISs. This rule became effective on October 14, 2014.

The rule applies only to facilities that withdraw at least two million gallons per day of cooling water from "waters of the United States" and use 25 percent or more of the water withdrawn exclusively for cooling purposes. It requires facilities to use one of seven compliance alternatives to reduce impingement, all of which are considered equivalent to or better than a national performance standard based on "modified traveling screens" with fish returns. It also calls for site-specific entrainment requirements, reflecting the maximum reduction in entrainment warranted after consideration of an array of relevant factors, and requires facilities that withdraw more than 125 million gallons per day to conduct an entrainment study to help permitting authorities determine any required site-specific controls.

The rule applies to our Coal Creek, Stanton, and Elk River stations.

Cogeneration for an Ethanol Plant. Since conventional power plants lose up to two thirds of their energy in the form of waste heat, they are ideal candidates for combined heat and power where some of this "waste heat" can be further processed into useful steam and thermal energy for industrial processes. Combined heat and power improves the overall efficiency of the power plant, saving energy and reducing emissions by offsetting other primary fuel that would have been required by the industrial thermal processes.

The best thermal energy partnerships are "co-located" very near the power plant to minimize the piping distance for heat and pressure losses. Blue Flint Ethanol was built adjacent to Coal Creek Station, which has been providing steam heat for converting grain to ethanol and drying distiller grains since 2007. The combined heat & power application results in lower emissions than a stand-alone ethanol plant, because no additional primary energy is required to operate their own boiler. This project is recognized every year by the EPA's Combined Heat & Power Partnership with a Certificate of Avoided GHG Emissions estimated at 11,700 metric tonnes of carbon dioxide per year.

Spiritwood Station (SWS) was designed as a combined heat and power plant to generate electricity for the grid and utilize some of its waste heat to serve the thermal requirements of a large existing malt plant and a new 65 million gallon per year ethanol plant called Dakota Spirit AgEnergy, which entered commercial operation in 2015.

SWS achieved commercial operation on 2014 and is currently providing low pressure steam to the Malt and ethanol facilities. SWS has generated over 120,000 MWh of energy into the MISO market and delivered over 600,000 pounds of steam to since the plant achieved commercial operation.

Coal Drying Project. The DryFining system, operated and maintained by NoDak Energy Services (a subsidiary of North American Coal Corporation), has produced more than 30 million tons of refined or "beneficiated" coal since December of 2009. The DryFining™ fuel enhancement process delivers a material improvement in plant efficiency (3.4 percent net unit heat rate) along with a net operating savings from fuel, station service and emissions reductions.

GRE is actively involved in commercializing the proprietary DryFining™ fuel enhancement process technology, that has been awarded nine U.S. patents. We have made industry conference presentations in the U.S., Europe, Asia and Australia, sharing our successful experience with drying and refining low rank coal. We have hosted tours at Coal Creek Station for power plant engineers and academic consultants and partnered with engineering firms to conduct feasibility assessments for other electric utilities here and abroad. We have recently entered a license agreement with an "original equipment manufacturer" in the People's Republic of China and look forward to our first licensed DryFining project.

SECTION L: Projected Demand for Service

Projected Demand. GRE's forecasted peak demands and energy requirements are provided in Exhibit 4.

Manner and Extent of Meeting Projected Demand. In addition to GRE's current generation capability, GRE has entered into a number of transactions of various types and durations with other utilities. These transactions help to utilize GRE's resources more effectively while deferring the need for new additions. GRE is a full transmission and market participant of the Midcontinent Independent System Operator (MISO), which operates short term energy and ancillary services markets that provide economic dispatch of generation and transmission congestion management over a broad region. In June 2009, MISO also began administering resource adequacy requirements to ensure that there is sufficient capacity available to meet expected demand requirements within its footprint.

Meeting summer peaks is GRE's primary resource capacity concern. GRE added combustion turbines in 2001, 2002, 2007, and 2009.

Given the current forecast of future demand and energy over the next 10 years GRE has no need for additional resources to meet those needs.

GRE intends to continue to evaluate improvements to existing facilities, biomass and other non-wind renewables, combined heat and power projects, and energy storage (both utility-side and customer-side).

Load Centers. The service areas of GRE's 28 member cooperatives, shown in Figure 1, are located mainly in Minnesota and a small area in northwestern Wisconsin. Twenty of the member cooperatives are All-Requirements customers. Eight member cooperatives purchase a fixed amount of capacity and associated energy from GRE and meet their growth with purchases from other energy suppliers.

Fuel Sources and Transportation. Stanton Station originally burned lignite, but switched to Powder River Basin subbituminous coal in 2004. The coal is mined near Decker Montana and is transported to the plant via rail.

Coal Creek Station's generating units burn lignite that is mined at the adjacent Falkirk Mine and transported to the plant via trucks and conveyor belts.

Spiritwood Station burns refined lignite produced at Coal Creek Station which is transported via rail from Coal Creek Station.

The Elk River generating plant burns refuse-derived fuel (RDF). Municipal wastes are transported by truck to a processing plant near Elk River where they are converted to usable fuel. The RDF is trucked to the Elk River generating facility.

GRE has two combustion turbine peaking facilities (Pleasant Valley and Lakefield Junction) located in southern Minnesota. These facilities use natural gas as their primary fuel which is transported by pipelines. The facilities also have fuel oil as a back-up fuel, which is transported by truck.

GRE has six combustion turbine peaking facilities (Cambridge I, Cambridge II, Rock Lake, Maple Lake, St. Bonifacius, and Elk River Peaking Station) located in central Minnesota. Cambridge II is fueled with natural gas. The Elk River Peaking Station can use either natural gas or fuel oil. The remaining facilities use fuel oil, which is transported by truck. St. Bonifacius is also connected to a fuel oil pipeline, which adds a fuel transport option.

Figure 1 – GRE's Members and Their Service Areas

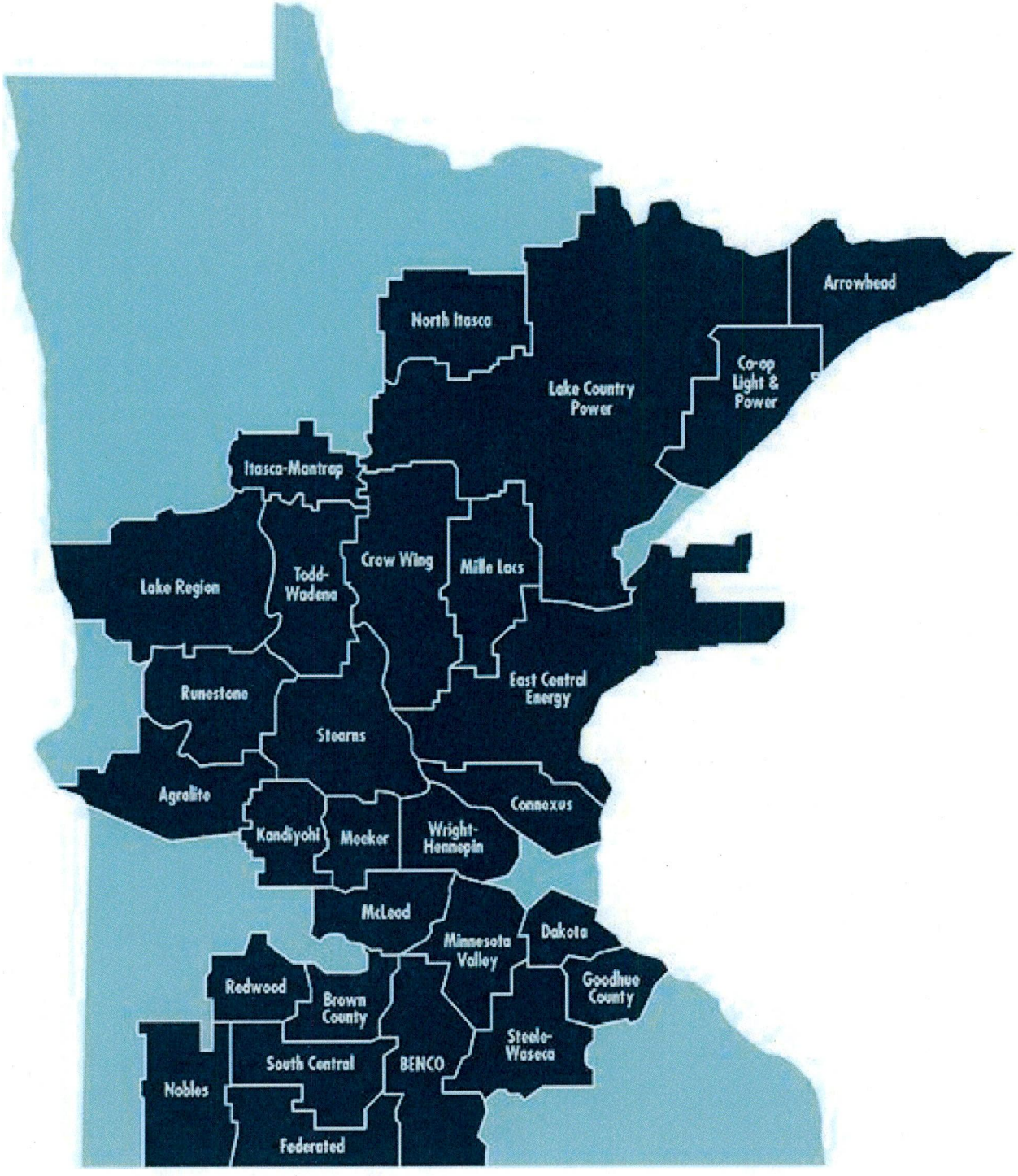

Exhibit 1

U.S. Department of Energy
Energy Information Administration Form EIA-767

(Forms supplied upon request.)

Exhibit 2

Federal Energy Regulatory Commission Form 715

(Forms supplied upon request.)

Exhibit 3

Location of the Coal Creek Station

Water Intake Pipeline

(Map supplied upon request.)

Exhibit 4

Projected Load Growth

and

Forecast Methodology

Demand and Energy Forecasts

The forecasts shown below are econometric forecasts developed for our 20 All Requirement Members plus fixed amounts of capacity and energy for our eight Fixed Members. Our Fixed Members purchase their load growth from suppliers other than GRE. These forecasts were developed in the winter of 2013. In addition to GRE's member system's demand and energy, they include transmission losses and GRE's own use.

The following figures show GRE's expected value energy and demand forecasts from 2015 through 2029.

All Requirement Member Forecast (=)	Elk River Municipal (-)*	DC Line Losses (+)*	Transmission Losses (+)*	Allliant Load Southern Coops Forecasts (+)*	Fixed Member Requirements (+)*	Dakota Spirit Ag (+)*	Energy Requirement Forecast
(MWh)	(MWh)	(MWh)	(MWh)	(MWh)	(MWh)	(MWh)	(MWh)
9,356,229	0	559,055	537,515	0	2,553,891	34,667	13,041,357
9,439,215	0	560,637	541,894	0	2,561,282	41,600	13,144,629
9,566,910	0	559,055	547,217	0	2,551,863	41,600	13,266,644
9,728,411	0	559,055	554,422	0	2,550,478	41,600	13,433,966
9,883,123	(288,298)	559,055	548,411	0	2,550,478	41,600	13,294,368
10,056,657	(288,298)	560,637	556,220	0	2,550,478	41,600	13,477,294
10,255,236	(288,298)	559,055	565,156	0	2,550,478	41,600	13,683,226
10,402,439	(288,298)	559,055	571,780	0	2,550,478	41,600	13,837,053
10,593,414	(288,298)	559,055	580,374	0	2,550,478	41,600	14,036,623
10,792,093	(288,298)	560,637	589,314	0	2,550,478	41,600	14,245,825
10,998,505	(288,298)	559,055	606,801	182,190	2,550,478	41,600	14,650,331
11,217,028	(288,298)	559,055	616,635	182,190	2,550,478	41,600	14,878,688
11,461,867	(288,298)	559,055	627,653	182,190	2,550,478	41,600	15,134,544
11,671,973	(288,298)	560,637	637,107	182,190	2,550,478	41,600	15,355,688
11,899,353	(288,298)	559,055	647,340	182,190	2,550,478	41,600	15,591,718
ts share these components regardless of sensitivities							
CAGR is significantly impacted with the loss of Elk River Municipal in 2019.						5-Year CAGR**	0.48%
						10-Year CAGR	0.99%
						15-Year CAGR	1.28%

Year	All Requirement Member Forecast (=)	Elk River Municipal (-)*	DC Line Losses (+)*	Transmission Losses (+)*	Allliant Load Southern Coops Forecasts (+)*	Fixed Member Requirements (+)*	Dakota Spirit Ag (+)*	Coincident Peak Demand Requirement
	(MW)	(MW)	(MW)	(MW)	(MW)	(MW)	(MW)	(MW)
2015	1,769	0	77	102	0	498	5	2,452
2016	1,782	0	77	103	0	498	5	2,466
2017	1,802	0	77	104	0	498	5	2,487
2018	1,828	0	77	105	0	498	5	2,514
2019	1,853	(70)	77	103	0	498	5	2,466
2020	1,880	(70)	77	104	0	498	5	2,495
2021	1,912	(70)	77	106	0	498	5	2,528
2022	1,935	(70)	77	107	0	498	5	2,552
2023	1,965	(70)	77	108	0	498	5	2,584
2024	1,996	(70)	77	109	0	498	5	2,617
2025	2,029	(70)	77	112	27	498	5	2,678
2026	2,063	(70)	77	114	27	498	5	2,714
2027	2,101	(70)	77	115	27	498	5	2,754
2028	2,134	(70)	77	117	27	498	5	2,788
2029	2,169	(70)	77	118	27	498	5	2,825
* All Forecasts share these components regardless of sensitivities								
** Five-year CAGR is significantly impacted with the loss of Elk River Municipal in 2019.							5-Year CAGR**	0.15%
							10-Year CAGR	0.72%
							15-Year CAGR	1.02%

Exhibit 5

GRE

North Dakota Transmission Map

(Map supplied upon request.)