NorthWestern Energy
Delivering a Bright Future

Ten-Year

Energy Facility Plan

2022–2031

Prepared for the South Dakota Public Utilities Commission

Submitted June 30, 2022

Table of Contents

Ten-Year Energy Facility Plan | 2022–2031

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Pursuant to SDCL § 49-41B-3 and ARSD ch. 20:10:21, NorthWestern Corporation d/b/a NorthWestern Energy submits this Ten-Year Energy Facility Plan for its South Dakota facilities.

ARSD 20:10:21:04 Existing Energy Conversion Facilities[1]

NorthWestern owns a 23.4% interest in the Big Stone Plant, which is located near Big Stone City, South Dakota. The other owners of this coal-fired plant are Otter Tail Power Company and Montana-Dakota Utilities Co. (MDU). Otter Tail operates the plant and reports the information required by ARSD 20:10:21:04.[2]

ARSD 20:10:21:05 Proposed Energy Conversion Facilities

None.

ARSD 20:10:21:06 Existing Transmission Facilities

For existing transmission facilities,[3] which are facilities through which electricity is being transmitted, the utility shall provide information as follows: (1) Location; (2) Type and transmission voltage; and (3) Projected date of removal from service and reason for removal.

NorthWestern's 115-kV transmission facilities run from Ellendale, North Dakota, to Yankton, South Dakota (north to south). A map of these facilities is attached as Exhibit A.

From	To	Type	Voltage
Ellendale Substation (Ellendale, ND)	Aberdeen A-Tap (2 miles west of Aberdeen, SD)	AC	115 kV

[1] An "energy conversion facility" is a facility or facility expansion designed for or capable of generation of 100 MW or more of electricity, but does not include wind energy facilities. SDCL § 49-41B-2(6).
[2] Otter Tail Power Company's 2020 Ten-Year Biennial Plan is available HERE.
[3] A "transmission facility" is an electric transmission line and associated facilities with a design of more than 115 kV. SDCL § 49-41B-2.1.

From	To	Type	Voltage
Aberdeen A-Tap	Two paths to Aberdeen Siebrecht Substation: (1) connected directly to Aberdeen Siebrecht; and (2) connected through Aberdeen City Substation and Aberdeen Industrial Park Substation (Aberdeen, SD)	AC	115 kV
Aberdeen Siebrecht Substation	• Western Area Power Administration's (WAPA) Groton Substation (south of Groton, SD) • Redfield Transmission Substation (Redfield, SD)	AC	115 kV
Redfield Transmission Substation	WAPA Huron Substation (1 mile south of Broadland, SD)	AC	115 kV
WAPA Huron Substation (two circuits)	Huron West Park Substation (Huron, SD)	AC	115 kV
Huron West Park Substation	Mitchell Northwest Substation (Mitchell, SD)	AC	115 kV
Mitchell Northwest Substation	Mitchell Transmission Substation (Mitchell, SD)	AC	115 kV
Mitchell Transmission Substation	• Interconnection with Northern States Power Company (near McCook County line, approximately 23 miles east of Mitchell, SD) • WAPA Letcher Substation (10 miles northeast of Mitchell, SD) • Tripp Junction Substation (5 miles south of Tripp, SD)	AC	115 kV
Tripp Junction Substation	• Schroeder Substation (5 miles southwest of Tripp, SD) • Menno Junction Substation (4 miles north of Lesterville, SD)	AC	115 kV
Menno Junction Substation	WAPA Utica Junction Substation (2 miles northeast of Lesterville, SD)	AC	115 kV
WAPA Utica Junction Substation	NAPA Junction Substation (5 miles northwest of Yankton, SD)	AC	115 kV
NAPA Junction Substation	• Yankton East Substation (1 mile east of Yankton, SD) • Yankton Junction Substation (4 miles west of Yankton, SD)	AC	115 kV

In addition, NorthWestern is a joint owner (along with MDU and Otter Tail) of the Big Stone Plant Transmission Facilities. NorthWestern owns 18.17 miles of the Big Stone Plant-to-Gary 230-kV transmission line near Big Stone City, South Dakota.

NorthWestern does not project the retirement of any transmission facilities rated 115-kV or above within the next 10-year time period.

ARSD 20:10:21:07 Proposed Transmission Facilities (Electric)

NorthWestern is currently working through a study, at the request of East River, to add a new 115-kV terminal at the Yankton Junction substation. East River utilized SPP's Attachment AQ process to submit the request, as their rural electric member in the area is needing new facilities by the lake to accommodate recent load growth. The final report on this study is scheduled to be completed by August 2022 and estimated costs of accommodating this request are unknown at this time.

NorthWestern is also currently working with Nextera and Otter Tail Power on agreements to upgrade NorthWestern's portion of the 230-kV line between Big Stone Plant and the Gary substation. Upgrades are necessary to accommodate a new 200 MW Nextera wind project that is injecting its energy into the Big Stone South Substation. The capacity upgrades, which are estimated to cost $1.1 million and are scheduled for construction in 2023, will be funded by Nextera and constructed by Otter Tail.

ARSD 20:10:21:08 Coordination of Plans

The utility shall provide a statement describing how the utility's plan or plans coordinate with those of other utilities serving the region.

In South Dakota, NorthWestern is both a transmission customer and a transmission-owning member of the Southwest Power Pool (SPP), located in Zone 19, a.k.a. the Upper Missouri Zone (UMZ). NorthWestern transferred functional control of its South Dakota electric transmission facilities to SPP on October 1, 2015, and updates the qualifying facilities under the SPP Tariff annually.

NorthWestern has been coordinating and planning with other systems since 1950, resulting in interconnections, interchange contracts, and the joint construction of facilities. This joint planning effort with neighboring utilities continues today, as NorthWestern is an active participant in the UMZ Coordination Group (UMZCG), which comprises entities with load and transmission facilities registered under Zone 19.

NorthWestern also actively participates in SPP's regional ITP process, which analyzes reliability, economic, and policy needs within the region and along the seams of neighboring Regional Transmission Organizations (RTOs). Within the UMZ, NorthWestern and the other transmission owners have also adopted Zonal Planning Criteria (ZPC) that the zone submits to SPP annually, prior to the April 1 deadline. The ZPC, which SPP incorporates into their annual ITP process, was developed to identify transmission needs on a more local or zonal level.

ARSD 20:10:21:09 Single Regional Plans

The utility shall state whether the proposed facilities comprise all or part of a single regional plan.

The Yankton Junction project originated from a formal request process under SPP's tariff to add or modify delivery points on the transmission system, as SPP has not identified this East River need with their ITP process. Along with NorthWestern, SPP will perform a separate independent study of this request to ensure added connectivity in the area does not negatively impact the transmission system. Once a proposed solution is developed, both SPP and the UMZ will be involved in discussions around the practicality and cost impact of the solution.

The upgrades to the Big Stone transmission came out of the Midcontinent Independent System Operator (MISO) generator interconnection study process that flagged NorthWestern's 230-kV line as an affected system. MISO identifies this project as J722 in their generator interconnection process.[4]

ARSD 20:10:21:10 Submission of Regional Plan

If proposed facilities comprise all or part of a regional plan, the utility shall submit the plan.

As mentioned in Section 20:10:21:09, neither of the possible projects originated from a regional transmission planning process.

ARSD 20:10:21:11 Utility Relationships

The utility shall describe any relationship of the utility to other utilities and regional associations, power pools, and networks.

As discussed in Section 20:10:21:08, NorthWestern is a member of the SPP and actively participates in SPP's ITP process, working groups, and committees. NorthWestern is also an

[4] MISO DPP 2017 August West Area Study Phase 1 Final Report (Oct 3, 2019), *available at* https://cdn.misoenergy.org/GI-DPP-2017-AUG-West-Phase1_System_Impact_Report_PUBLIC388157.pdf

active participant in the UMZ Coordination Group and has played an important role in the development of the goals for the group, and the implementation of the ZPC.

ARSD 20:10:21:12 Efforts to Minimize Adverse Effects

The utility shall provide a detailed statement describing methodology used and efforts of the utility to identify, minimize, or avoid adverse environmental, social, economic, health, public safety, and historic or aesthetic preservation effects.

NorthWestern's policy is to provide cost-effective, reliable, and stably priced energy while being good stewards of the natural resources and complying with environmental regulations. We apply the following environmental principles in our day-to-day business:

1. Our business practices reflect a respect for, and a commitment to, sustainability and the long term quality of the environment.
2. One of our priorities is being good stewards of natural and cultural resources at our hydroelectric projects.
3. We comply with the spirit as well as the letter of environmental laws and regulations.
4. Environmental issues and impacts are an integral part of our planning, operating and maintenance decisions.
5. We promote our customers' efforts to conserve energy, subject to regulatory approval.
6. We support providing energy through non-carbon emitting and renewable resources when consistent with our statutory requirement to provide cost effective and reliable energy.
7. We strive to minimize the generation of wastes and promote the reuse and/or recycling of materials.
8. We seek to continuously improve our environmental compliance and stewardship.
9. We embrace a team culture where positive environmental stewardship and compliance are encouraged.
10. Our contractors and consultants must comply with this policy when working for or representing NorthWestern Energy.

Promoting safety is an important part of NorthWestern's public service commitment. Our goal is to prevent all incidents by doing our best to warn the public of the potential dangers of working or playing near electric and natural gas lines and facilities. Below is a list of measures we take to protect and educate the public:

1. The public must be protected from hazards generated by NorthWestern's operations and construction activities. NorthWestern's operating personnel take the appropriate safeguards to minimize and prevent, if possible, any hazards to the general

public. Tailboards include a discussion of any public hazards that could be created by work activities.

2. Contractors and equipment rental shops are targeted for education due to their high exposure and potential for digging up natural gas lines or contacting overhead power lines.
3. First Responders are another specific audience that is targeted to ensure that they are educated about how to respond to natural gas or electrical emergencies.
4. NorthWestern offers a variety of educational materials to support our efforts and commitment to public safety. Our public website maintains an extensive safety section for all types of audiences.[5]
5. We offer electric and natural gas safety education programs targeted to third and fourth/fifth grade students.

In response to COVID-19, NorthWestern has made a number of commitments to the communities we serve in the collective efforts to prevent the spread of the virus. These efforts include:

- All NorthWestern facilities were closed to the public during the emergency state of pandemic.
- Our customer call center remains open 24/7. In order to keep our Customer Care employees safe, we utilized our phone system technology to allow these employees to work from home during the pandemic. Some continue to work from home today.
- NorthWestern voluntarily suspended service disconnections for non-payment to help customers financially impacted by the outbreak.
- Strict travel restrictions were implemented for NorthWestern employees.
- Access to critical facilities was restricted to essential employees only. Employees in these facilities were split into segregated work groups to avoid physical contact.
- NorthWestern utilized technology for meetings. This practice continues to be used in addition to in person meetings based on business need.
- NorthWestern split work groups, instituted work-from-home for a large portion of its workforce, assigned separate shifts, and staggered start times.
- Extra social-distancing protocols were implemented for field personnel, who are still performing operations and maintenance work.
- NorthWestern continues to be vigilant and monitor COVID protocols.
- In an effort to maintain the safety of workforce, NorthWestern trained a team of employees to contact trace employee exposures and illnesses.

[5] http://www.northwesternenergy.com/safety

ARSD 20:10:21:13 Efforts Relating to Load Management

The utility shall provide a statement describing its efforts toward efficient load management.

NorthWestern works with customer requests by utilizing load-research monitoring equipment in an effort to explain usage patterns and causes. NorthWestern also offers time-of-use rates and off-peak rates with curtailment programs to assist commercial or irrigation customers and control demand.

ARSD 20:10:21:14 List of Reports

The utility shall provide a list of all reports or studies filed or proposed to be filed with federal or other state agencies relating to the proposed facilities.

NorthWestern does not anticipate needing to file any of the described reports.

ARSD 20:10:21:15 Changes in Status of Facilities

The utility shall provide a list of changes in status of the utility's facilities during the past two years or since submission of its last previous 10-year plan.

In 2021, NorthWestern completed construction of the 115-kV Aberdeen A-Tap (A-Tap) switchyard on the west end of Aberdeen, SD. The new four terminal switchyard gives the Aberdeen area a significant transmission reliability boost due to the multiple 115-kV paths now in place to serve distribution substations. The fourth terminal at A-Tap was constructed to support East River's transmission system west of Aberdeen. The addition of the East River terminal originated from SPP's Integrated Transmission Planning (ITP) process and created a loop on a portion of the SPP system that is owned by East River.

NorthWestern completed construction and began commercial operation of the Bob Glanzer Generating Station, located in Huron, SD, in June 2022. The new 58-MW facility is comprised of six RICE units and replaces the existing generating facility that was destroyed in a fire in January 2019.

ARSD 20:10:21:16 Projected Electric Demand

The utility shall provide a statement of the projected demand, both in-state and out-of-state, for the electric service to be rendered by the utility for each of the ensuing 10 years.[6]

Projected Electric Demand | South Dakota Service Territory

Year	Peak Demand (MW)	Increase (%)	Increase (MW)
2022	343.2	-0.4	-1
2023	346.8	1.0	4
2024	350.4	1.0	4
2025	354.0	1.0	4
2026	357.6	1.0	4
2027	361.2	1.0	4
2028	364.8	1.0	4
2029	368.4	1.0	4
2030	372.0	1.0	4
2031	375.6	1.0	4
2032	379.2	1.0	4

These projections are based upon historical trends and known changes for a 50/50 forecast for NorthWestern's South Dakota service territory based on guidance from SPP.

[6] NorthWestern also provides electric service in Montana. NorthWestern's Montana and South Dakota facilities are not physically connected and are not in the same Interconnection. Therefore, this report does not include data for its Montana operations.

ARSD 20:10:21:17 Changes in Electric Energy

The utility shall present a table showing the increase or decrease of projected electric energy demand and allocation by volume and percentage for each year relative to the prior year.

Projected Electric Usage | South Dakota Service Territory

Year	Electric Energy (MWh)	Annual Load Growth
2022	1,796,357	3%
2023	1,816,596	1%
2024	1,836,835	1%
2025	1,857,074	1%
2026	1,877,313	1%
2027	1,897,552	1%
2028	1,917,791	1%
2029	1,938,030	1%
2030	1,958,269	1%
2031	1,978,508	1%

ARSD 20:10:21:18 Map of Service Area

The utility shall include a map or maps indicating the specific geographic location of the utility's service area or areas.

A map of NorthWestern's South Dakota service territory is below.

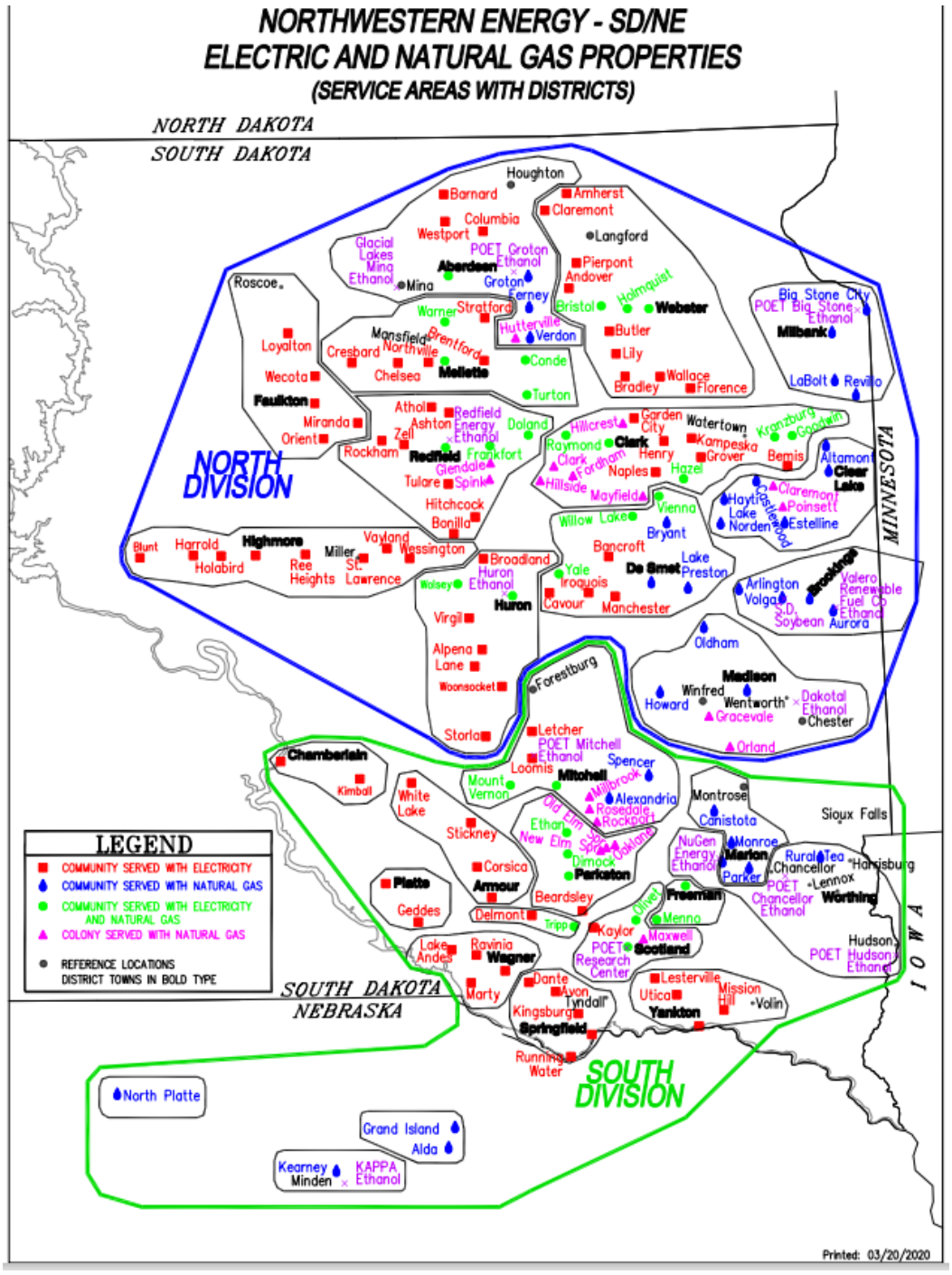
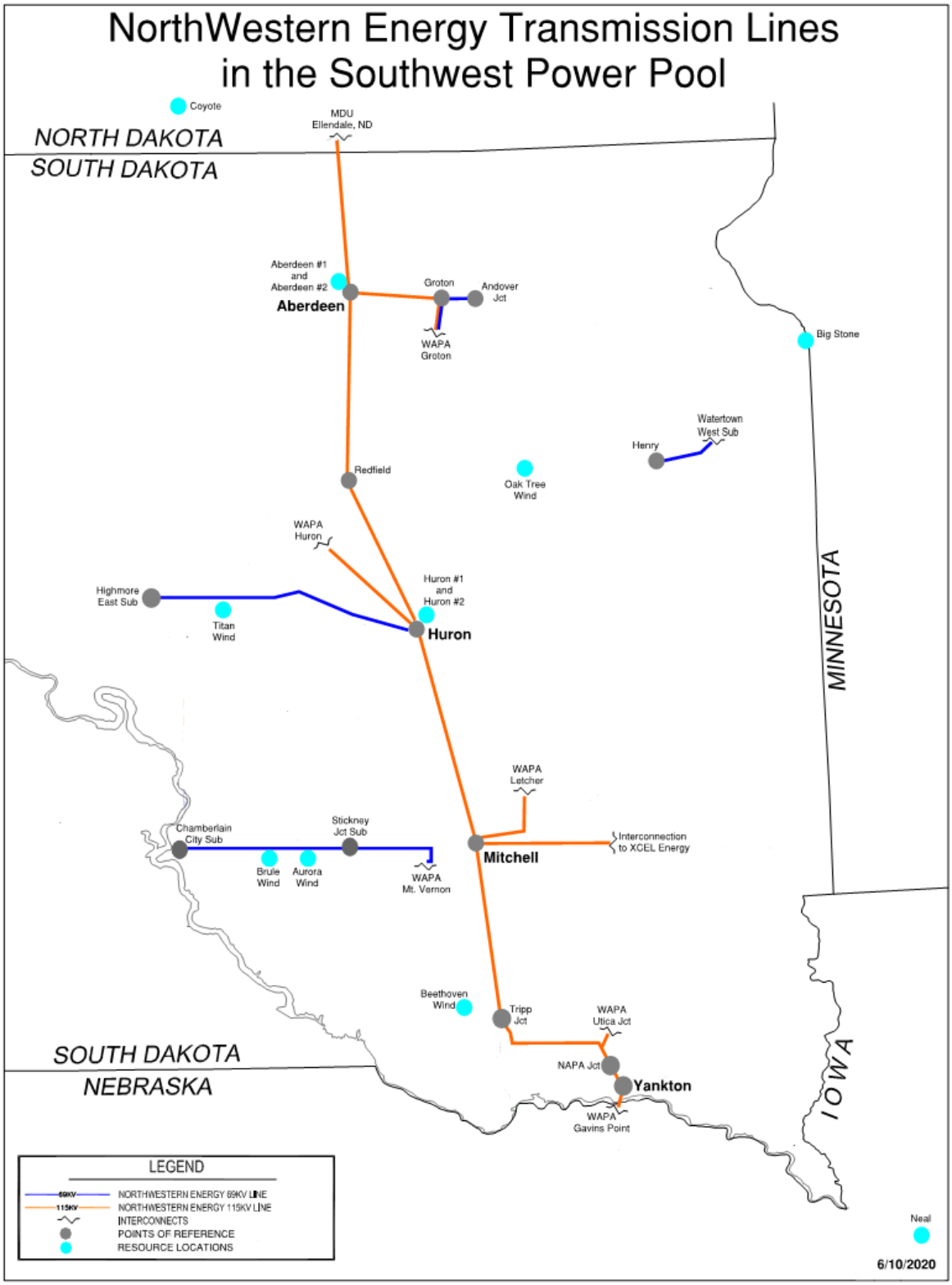


Exhibit A Map of Existing Transmission Facilities



Certificate of Service

I hereby certify that, in accordance with ARSD 20:10:21:23, I have this day served electronic notice of NorthWestern Energy's plan filing to the following state agencies and officers:

(1) Aeronautics Commission
bandc@state.sd.us

(2) Attorney General
mark.vargo@state.sd.us

(3) Department of Revenue
bustax@state.sd.us

(4) Governor's Office of Economic Development
goedinfo@state.sd.us

(5) Department of Education and Cultural Affairs
doe@state.sd.us

(6) State Engineer
stacy.watters@state.sd.us

(7) Department of Game, Fish and Parks
wildinfo@state.sd.us
parkinfo@state.sd.us

(8) State Geologist
tim.cowman@state.sd.us

(9) Office of the Governor
mark.miller@state.sd.us (Chief of Staff)

(10) Department of Health
DOHino@state.sd.us

(11) Department of Tribal Relations
dave.flute@state.sd.us

(12) Department of Labor & Regulation
marcia.hultman@state.sd.us

(13) Legislative Research Council
LRC@sdlegislature.gov

(14) Department of Environment and Natural Resources
DENRINTERNET@state.sd.us

(15) Department of School and Public Lands
ryan.brunner@state.sd.us

(16) Department of Transportation
dotgeneralinfo@state.sd.us

Dated this 30th day of June, 2022.

s/ *Jamie Hajek*

Jamie Hajek
Coordinator – South Dakota Transmission Operations
NorthWestern Energy
3010 West 69th Street
Sioux Falls, SD 57108
jamie.hajek@northwestern.com