

Legislative Assembly

North Dakota House of Representatives

STATE CAPITOL
600 EAST BOULEVARD
BISMARCK, ND 58505-0360



Representative Anna Novak

District 33
1139 Elbowoods Drive
Hazen, ND 58545-4923
anovak@ndlegis.gov

COMMITTEES:

Education
Energy and Natural Resources (Vice Chair)

January 31, 2025

Good morning, Mr. Chairman and members of the committee. For the record, my name is Anna Novak, representative from district 33.

House bill 1579 is a fairly simple bill, despite the hog house version in front of you being 8 pages long. It seeks to regulate large customers ~~20~~⁵⁰ megawatts or more by requiring a certificate of public convenience and necessity through the Public Service Commission

While it doesn't specifically say it, the bill idea came about because of data centers coming to the state. Data centers are facilities that house very large amounts of information for organizations. Google, Apple, and Nvidia are just some of the companies that need data centers to store their servers, storage devices and networking equipment. They offer North Dakota a lot of benefits and we should welcome the responsible buildout of these facilities. They offer opportunities to increase property taxes as well as high-paying jobs across the state. And with North Dakota being an energy exporter, it offers unique ways for our baseload energy sources such as coal and natural gas to stay relevant in the future.

Last week, President Trump announced that there will be \$500 billion dollars of infrastructure investment in the AI industry under his leadership. This is an incredible opportunity for North Dakota.

North Dakota has become a place targeted by data centers because of three main reasons:

1. Cooler climate: the equipment housed in these data centers generate heat while they're running. Our cooler climate significantly reduces their energy usage.
2. Energy need: data centers require an incredible amount of electricity to operate. It isn't unusual for a facility to need anywhere from 100-300 mw of electricity. One of the most important takeaways regarding electricity for data centers is that they absolutely cannot have a blackout situation. They do have backup generation sources on site, typically, but reliability is important to them too.
3. North Dakota has a business-friendly regulatory environment. My bill doesn't change that.

I realize that no industry wants to be regulated. It's important to find a balance of regulation, that ensures we continue being a place that welcomes new and exciting business opportunities like data centers, while ensuring our electrical grid is reliable and North Dakota consumers don't pay higher electricity rates because of the data centers.

The latter has happened in the state. Public service commissioner Randy Christmann will talk about that situation more and explain how making data centers apply for a Certificate of Public Convenience

and Necessity will protect our consumers. North Dakota has some of most inexpensive electricity in the nation - which is another reason data centers want to be here. But regardless of how enticing this business opportunity is to our state, we have a responsibility to keep electricity rates low.

Regarding reliability, it is of extreme importance that the legislature does everything we can to protect North Dakotans from energy shortages. We live in a state that has extreme weather. Blackouts could create a potentially deadly situation if they were to happen during a bitter cold winter day. Our PSC commissioners have different portfolios they oversee. Commissioner Christmann oversees the SPP operations in our state and Commissioner Kringstad oversees the MISO operations in our state. In the packet of information I handed out, I've included the North American Reliability Corporation's 2024 Winter Assessment. It's a long document so I didn't print the entire thing. But I do want to direct you to a few different pages, which I provided to you:

Page 5 - under bullet 1, where it talks about Midcontinent ISO (MISO). The part I want you to focus on here is the last sentence of the paragraph, where it says "with fewer internal dispatchable resources and increasing reliance on wind and imports, the risk of supply shortfall in winter has increased in MISO".

Page 6 - under the bullet titled "Southwest Power Pool SPP". Again, I would like you to read the last part of the bullet, where it says "The area's vast wind resources can alleviate firm capacity shortages under the right conditions; however, energy risks emerge during periods of low wind". If you know anything about electricity production in our state when it's really hot or really cold is that that's when the wind typically doesn't blow, when we need it the most.

Page 7 - under "Recommendations". The last bullet point is what I would direct you to take note of... It says "state and provincial regulators can assist grid owners and operators in advance of and during extreme cold weather by supporting requested environmental and transportation waivers as well as public appeals for electricity and natural gas conservation." My thought process is that FERC wants our state regulators to be aware of and do something about potential energy shortages. When we are looking to add potentially hundreds of megawatts of electricity usage, I think it makes sense for our PSC to get involved.

Page 9 - On table 2, I want to direct you to find MISO and SPP on the table. Both of those grids show negative margins during extreme weather conditions. Our local co-ops and IOU's do a good job of making sure they have enough baseload electricity when needed. However, because they are part of regional electric grids, they are susceptible to energy shortages during extreme weather.

When working on this bill, I did seek input from the parties impacted. And I will tell you that there was no consensus, despite now four different versions of the bill and a lot of great discussion along the way. This is really complicated and I recognize that what one party likes, another doesn't. There isn't a quick fix. But I do believe the amended bill in front of you is the best version for the state of North Dakota as well as our electricity consumers. If there is a situation where North Dakotans are faced with increased electricity prices because the legislature hasn't given the Public Service Commission the proper tools to regulate data centers, I think the public is going to be frustrated with us...and honestly, they should be.

With that, I'll stand for any questions before I hand it over to Commissioner Christmann. Thank you.

Sixty-ninth
Legislative Assembly
of North Dakota

PROPOSED AMENDMENTS TO

HOUSE BILL NO. 1579

Introduced by

Representatives Novak, Porter, Heinert

Senators Kessel, Patten

1 A BILL ~~for an Act to amend and reenact sections 49-03.1-01, 49-03.1-02, 49-03.1-03, and~~
2 ~~49-03.1-05 of the North Dakota Century Code, relating to the requirement for data centers to~~
3 ~~obtain a certificate of public convenience and necessity.~~for an Act to amend and reenact
4 sections 49-03-01, 49-03-01.4, 49-03-01.5, 49-03-02, and 49-03-05 of the North Dakota
5 Century Code, relating to the requirement for large customers to obtain a certificate of public
6 convenience and necessity.

7 **BE IT ENACTED BY THE LEGISLATIVE ASSEMBLY OF NORTH DAKOTA:**

8 ~~— **SECTION 1. AMENDMENT.** Section 49-03.1-01 of the North Dakota Century Code is~~
9 ~~amended and reenacted as follows:~~

10 ~~— **49-03.1-01. Certificates of public convenience and necessity - Who to secure.**~~

11 ~~— No A public utility shall or data center may not begin construction or operation of a public~~
12 ~~utility plant or system data center infrastructure without first obtaining from the commission a~~
13 ~~certificate that public convenience and necessity require or will require such the construction and~~
14 ~~operation, provided that this certification may not be required for a cooperative operated data~~
15 ~~center.~~

16 ~~— **SECTION 2. AMENDMENT.** Section 49-03.1-02 of the North Dakota Century Code is~~
17 ~~amended and reenacted as follows:~~

18 ~~— **49-03.1-02. Definitions.**~~

19 ~~— In this chapter, unless the context or subject matter otherwise requires:~~

20 ~~— 1. "Commission" means the public service commission.~~

1 ~~2. "Data center" means a structure that primarily contains electronic equipment used to~~
2 ~~process, store, and transit digital information, or conduct data mining, owned by an~~
3 ~~investor-owned utility, which consumes twenty megawatts or more of energy, which~~
4 ~~may be:~~

5 ~~a. A freestanding structure;~~

6 ~~b. A portion of a larger structure which uses environmental control equipment to~~
7 ~~maintain the proper conditions for the operation of electronic equipments; or~~

8 ~~c. A structure that accommodates infrastructure, including servers, storage~~
9 ~~systems, and networking equipment, ensuring access to information, operating~~
10 ~~data mining, facilitating the operation of websites, applications, and services, and~~
11 ~~maintaining optimal performance and uninterrupted data availability for an~~
12 ~~enterprise or organization.~~

13 ~~3. "Public utility" includes any association, person, firm, corporation, limited liability~~
14 ~~company, or agency engaged or employed in this state to furnish its product or~~
15 ~~services to the public generally which is statutorily subject to the jurisdiction of the~~
16 ~~commission. The words "public utility" as used in this chapter do not apply to electric~~
17 ~~public utilities, telecommunications companies that are not incumbent~~
18 ~~telecommunications companies under chapter 49-21, or motor carriers of persons or~~
19 ~~property for hire.~~

20 ~~**SECTION 3. AMENDMENT.** Section 49-03.1-03 of the North Dakota Century Code is~~
21 ~~amended and reenacted as follows:~~

22 ~~**49-03.1-03. Certificate application.**~~

23 ~~Application for a certificate of public convenience and necessity shall be made upon forms~~
24 ~~prescribed by the commission. The commission shall make regulations for the filing of such~~
25 ~~application. The application must contain a financial statement, a description of the type of~~
26 ~~service to be offered, a map and description of the area to be served, and a list of all other~~
27 ~~public utilities or data centers providing similar service in the area. Upon the filing of an~~
28 ~~application for a certificate of public convenience and necessity, the commission shall set a~~
29 ~~hearing date which shall not be less than twenty days after the filing. The commission shall~~
30 ~~cause notice of the hearing to be served by certified mail, at least ten days before the day of~~
31 ~~hearing, upon every public utility or data center which is operating, or which has applied for a~~

1 ~~certificate of public convenience and necessity, in the area proposed to be served by the~~
2 ~~applicant, and on other interested parties as determined by the commission. The commission~~
3 ~~shall impose an application fee of up to ten thousand dollars for an application under this~~
4 ~~chapter. With the approval of the emergency commission, the commission may impose an~~
5 ~~additional amount. The commission shall pay the expenses of processing an application under~~
6 ~~this chapter from the application fee paid by the public utility or data center in accordance with~~
7 ~~section 49-02-02.~~

8 ~~— **SECTION 4. AMENDMENT.** Section 49-03.1-05 of the North Dakota Century Code is~~
9 ~~amended and reenacted as follows:~~

10 ~~— **49-03.1-05. Prerequisites to issuance of certificate of public convenience and**~~
11 ~~**necessity - Waiver of hearing.**~~

12 ~~— 1. Before any certificate may be issued under this chapter, a certified copy of the articles~~
13 ~~of incorporation, charter, or organization of the public utility or data center, if the~~
14 ~~applicant is a corporation or a limited liability company, shall be filed with the~~
15 ~~commission. At the hearing on the application as provided in section 49-03.1-03, the~~
16 ~~applicant shall submit evidence showing that the applicant has received the consent,~~
17 ~~franchise, permit, ordinance, or other authority of the proper municipality or other~~
18 ~~public authority, if required, or has or is about to make application therefor. The~~
19 ~~commission shall have the power, after notice and hearing, to do any of the following:~~

20 ~~— 1. a. Issue the certificate.~~

21 ~~— 2. b. Refuse to issue the certificate.~~

22 ~~— 3. c. Issue the certificate for the construction or operation of only a portion of the~~
23 ~~contemplated facility, line, plant, or system, or data center.~~

24 ~~— 4. d. Issue the certificate for the partial exercise of the right or privilege sought,~~
25 ~~conditioned upon the applicant's having secured or upon the applicant's securing~~
26 ~~the consent, franchise, permit, ordinance, or other authority of the proper~~
27 ~~municipality or other public authority, and may attach to the exercise of the rights~~
28 ~~granted by any certificate such terms and conditions as in its judgment the public~~
29 ~~convenience and necessity may require.~~

1 ~~2. Notwithstanding any of the foregoing provisions, the commission may grant a~~
2 ~~certificate if no interested party has requested a hearing on the application after~~
3 ~~receiving at least twenty days' notice of opportunity to request such hearing.~~

4 **SECTION 1. AMENDMENT.** Section 49-03-01 of the North Dakota Century Code is
5 amended and reenacted as follows:

6 **49-03-01. Certificate of public convenience and necessity - Secured by electric public**
7 **utility and large customer.**

- 8 1. An electric public utility may not begin construction or operation of a public utility plant
9 or system, or of an extension of a plant or system without first obtaining from the
10 commission a certificate that public convenience and necessity require or will require
11 the construction and operation. This section does not require an electric public utility to
12 secure a certificate for an extension within any municipality within which the electric
13 public utility has lawfully commenced operations. If any electric public utility in
14 constructing or extending its line, plant, or system, unreasonably interferes with or is
15 about to interfere unreasonably with the service or system of any other electric public
16 utility, or any electric cooperative corporation, the commission, on complaint of the
17 electric public utility or the electric cooperative corporation claiming to be injuriously
18 affected, after notice and hearing as provided in this title, may order enforcement of
19 this section with respect to the offending electric public utility and prescribe just and
20 reasonable terms and conditions.
- 21 2. An electric transmission provider may not begin construction or operation of an electric
22 transmission line interconnecting with an existing electric transmission line owned or
23 operated by an electric public utility without first obtaining a certificate that public
24 convenience and necessity require or will require the construction or operation.
- 25 3. A large customer may not begin operation without first obtaining from the commission
26 a certificate of public convenience and necessity.

27 **SECTION 2. AMENDMENT.** Section 49-03-01.4 of the North Dakota Century Code is
28 amended and reenacted as follows:

29 **49-03-01.4. Enforcement of act.**

- 30 1. If any electric public utility, large customer, or electric transmission provider violates or
31 threatens to violate any of the provisions of sections 49-03-01 through 49-03-01.5 or

1 interferes with or threatens to interfere with the service or system of any other electric
2 public utility or rural electric cooperative, the commission, after complaint, notice, and
3 hearing as provided in chapter 28-32, shall make its order restraining and enjoining
4 the electric public utility, large customer, or electric transmission provider from
5 constructing or extending its interfering lines, plant, or system. In addition to the
6 restraint imposed, the commission shall prescribe any terms and conditions as the
7 commission deems reasonable and proper.

- 8 2. This section does not prohibit or limit any person, who has been injured in the person's
9 business or property by reason of a violation of sections 49-03-01 through 49-03-01.5
10 by any electric public utility, large customer, electric transmission provider, or electric
11 cooperative corporation, from bringing an action for damages in any district court of
12 this state to recover such damages.

13 **SECTION 3. AMENDMENT.** Section 49-03-01.5 of the North Dakota Century Code is
14 amended and reenacted as follows:

15 **49-03-01.5. Definitions.**

16 As used in sections 49-03-01 through 49-03-01.5:

- 17 1. "Electric provider" means either an electric public utility or a rural electric cooperative.
18 2. "Electric public utility" means a privately owned supplier of electricity offering to supply
19 or supplying electricity to the general public. The term does not include a person that
20 uses an electric vehicle charging station to resell electricity to the public if the reseller
21 has procured electricity from an electric service provider that is authorized to engage
22 in the retail sale of electricity within the service area in which the electric vehicle
23 charging service is provided, and the resale is for the charging of electric vehicles
24 exclusively.
25 3. "Electric transmission line" means facilities for conducting electric energy at a design
26 voltage of one hundred fifteen kilovolts or greater phase to phase and more than
27 one mile [1.61 kilometers] long.
28 4. "Electric transmission provider" means an owner or operator, other than a rural electric
29 cooperative, of a transmission line the costs of which are recovered directly or
30 indirectly through transmission charges to an electric public utility.

1 5. "Large customer" means a facility, addition, or combination of facilities designed with
2 an expected demand of at least fifty megawatts of electricity.

3 6. "Person" includes an individual, an electric public utility, a corporation, a limited liability
4 company, an association, or a rural electric cooperative.

5 ~~6.7.~~ "Rural electric cooperative" includes any electric cooperative organized under chapter
6 10-13. An electric cooperative, composed of members as prescribed by law, shall not
7 be deemed to be an electric public utility. The term does not include a person that
8 uses an electric vehicle charging station to resell electricity to the public if the reseller
9 has procured electricity from an electric service provider that is authorized to engage
10 in the retail sale of electricity within the service area in which the electric vehicle
11 charging service is provided, and the resale is for the charging of electric vehicles
12 exclusively.

13 ~~7.8.~~ "Service area" means a defined geographic area containing existing or future service
14 locations established by an agreement among electric providers and approved by the
15 commission.

16 ~~8.9.~~ "Service area agreement" means an agreement between electric providers
17 establishing service areas and designating service locations to be served by each
18 provider under section 49-03-06.

19 ~~9.10.~~ "Service location" means the structures, facilities, or improvements on a parcel of real
20 property to which electric service may be provided.

21 **SECTION 4. AMENDMENT.** Section 49-03-02 of the North Dakota Century Code is
22 amended and reenacted as follows:

23 **49-03-02. Prerequisites to issuance of certificate of public convenience and**
24 **necessity.**

25 1. Before any certificate may issue under this chapter, a certified copy of the articles of
26 incorporation or charter of the utility or large customer, if the applicant is a corporation,
27 or a certified copy of the articles of organization of the utility or large customer, if the
28 applicant is a limited liability company, must be filed with the commission. At the
29 hearing on the application after notice as provided in this title, the utility or large
30 customer shall submit evidence showing that the applicant has received the consent,
31 franchise, permit, ordinance, or other authority of the proper municipality or other

- 1 public authority, if required, or has or is about to make application for authority. The
2 commission shall have the power, after notice and hearing, to:
- 3 a. Issue the certificate prayed for;
 - 4 b. Refuse to issue the certificate;
 - 5 c. Issue the certificate for the construction or operation of a portion only of the
6 contemplated facility, line, plant, system, or extension of the same; or
 - 7 d. Issue the certificate for the partial exercise of the right or privilege sought,
8 conditioned upon the applicant's having secured or upon the applicant's securing
9 the consent, franchise, permit, ordinance, or other authority of the proper
10 municipality or other public authority, and may attach to the exercise of the rights
11 granted by any certificate terms and conditions as in the judgment of the
12 commission the public convenience and necessity may require.
- 13 2. Notwithstanding any other provision of this section, the commission may grant a
14 certificate if an interested party, including any local electric cooperative, has not
15 requested a hearing on an application after receiving at least twenty days' notice of
16 opportunity to request such hearing. In addition, the commission may not issue a
17 certificate to an electric transmission provider for construction or operation of an
18 electric transmission line that will interconnect with an electric transmission line owned
19 or operated by an electric public utility if the electric public utility is willing and able to
20 construct and operate a similar electric transmission line.
- 21 3. The commission may impose an application fee of up to one hundred seventy-five
22 thousand dollars for an application under this chapter. With the approval of the
23 emergency commission, the commission may impose an additional amount. The
24 commission shall pay the expenses of processing an application under this chapter
25 from the application fee paid by the public utility in accordance with section 49-02-02.
- 26 4. Upon receiving a complaint from an electric public utility or rural electric cooperative,
27 when a large customer unreasonably interferes with or is about to interfere with utility
28 service, increase rates for non-serving utilities, impact reliability, or cause
29 unreasonable transmission congestion, the commission may deny or attach conditions
30 to a large customer certificate of public convenience and necessity.

1 5. For purposes of this section, "large customer" has the meaning provided in section
2 49-03-01.5.

3 **SECTION 5. AMENDMENT.** Section 49-03-05 of the North Dakota Century Code is
4 amended and reenacted as follows:

5 **49-03-05. Complaint upon violation of chapter.**

6 1. If a public utility, large customer, or electric transmission provider engages or is about
7 to engage in construction or operation as described in this chapter without having
8 secured a certificate of public convenience and necessity as required by the provisions
9 of this chapter, or if a public utility, large customer, or electric transmission provider
10 constructs or extends its line, plant, or system, or supplies, or offers to supply electric
11 service in violation of this chapter, any interested municipality, public authority, utility,
12 electric cooperative corporation, or person, may file a complaint with the commission.
13 The commission acting on the complaint, or upon its own motion without complaint,
14 with or without notice, may make its order requiring the public utility or large customer
15 complained of to cease and desist from the construction or operation or other
16 prohibited activity until the further order of the commission. Upon hearing had after
17 due notice given, the commission shall make an order with respect to the public utility,
18 large customer, or electric transmission provider and prescribe terms and conditions
19 as are just and reasonable.

20 2. For purposes of this section, "large customer" has the meaning provided in section
21 49-03-01.5.

Key Findings

This WRA covers the upcoming three-month (December–February) winter period, providing an evaluation of the generation resource and transmission system adequacy necessary to meet projected winter peak demands and operating reserves. This assessment identifies potential reliability issues of interest and regional risks. The following findings are the ERO Enterprise’s independent evaluation of electricity generation and transmission capacity as well as the potential operational concerns that may need to be addressed for the upcoming winter:

1. All areas are assessed as having adequate resources for normal winter peak-load conditions. However, more extreme winter conditions extending over a wide area could result in electricity supply and energy shortfalls. Prolonged, wide-area cold snaps can drive sharp increases in electricity demand. Simultaneously, electricity supplies are at risk from freezing temperatures that threaten reliable operation of BPS generators, fuel supply issues for natural-gas-fired generation, and wind and solar resource energy limitations. In three of the past five winters, severe arctic storms have extended across much of North America, causing regional demand for electricity and heating fuel to soar and exposing generation and fuel infrastructure in temperate areas to freezing conditions.¹ The following areas face risks of electricity supply shortfalls during periods of more extreme conditions this winter (see Figure 1).

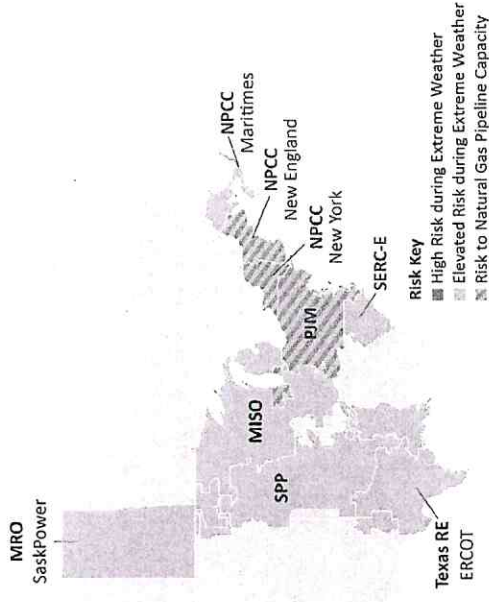


Figure 1: Winter Reliability Risk Area Summary

Seasonal Risk Assessment Summary	
High	Potential for insufficient operating reserves in normal peak conditions
Elevated	Potential for insufficient operating reserves in above-normal conditions
Sufficient Reserves	Sufficient operating reserves expected

- **NPCC-Maritimes:** Reserve margins have fallen by 4.6% from the winter of 2023 as forecasted peak demand has grown by more than 5.5% (300 MW). Lower conventional hydro generation capacity has contributed to a drop of 100 MW in total winter generation capacity from last winter. Demand levels at the forecasted peak can strain the area’s firm supplies and lead to operating mitigations or energy emergencies.
- **NPCC-New England:** Dispatchable thermal generation capacity has declined by 2.6 GW as forecasted peak demand has risen by 0.6 GW (+3%). The largest capacity increases year over year were for wind and solar resources at a combined 550 MW; however, both of those resource types have limited energy production in the winter months. Potential

- **Midcontinent ISO (MISO):** Reduced coal and natural-gas-fired generation by over 5 GW since Winter 2023–2024 has contributed to a decline in available resources. Lower internal capacity is partially offset by a 2 GW increase in firm capacity imports into the area. Additionally, MISO’s margin is being helped by a lower peak demand forecast, down over 4 GW since last winter. MISO recently implemented a seasonal resource adequacy construct that more effectively values risks and resource contributions that vary by time of year. With fewer internal dispatchable resources and increasing reliance on wind and imports, the risk of supply shortfall in winter has increased in MISO.

- **MRO-SaskPower:** Reserve margins have risen this winter by 17 percentage points over the previous winter due to a net increase in peak winter capacity of more than 200 MW, the majority of which consists of natural gas generation capacity (320 MW). Additional natural gas-fired generation capacity has offset the area’s 140 MW decline in coal-fired generation capacity. High numbers of forced generator outages or wind turbine cold temperature derates and outages could lead to operating reserve shortfalls at peak winter demand levels.

¹ See detailed reports on the [January 2024 Arctic Storm](#), [Winter Storm Elliott](#), and [Winter Storm Uri](#).

natural gas transportation constraints compound the risk of generation capacity shortfall during peak demand periods. ISO-New England's (ISO-NE) Inventoried Energy Program provides compensation for generators that maintain inventoried fuel for their assets during extreme cold periods.

- NPCC-New York:** The Anticipated Reserve Margin (ARM) of 64.3% remains well above the Installed Reserve Margin (IRM) of 22.0% established by the New York State Reliability Council, despite a 2.6 GW decline in resource capacity since last winter. Operators are likely to be challenged in maintaining sufficient reserves during periods of extreme cold weather if non-firm supply of natural gas to generators is interrupted. New York also faces reduced natural gas supply from a regional pipeline issue (see the natural gas fuel highlight in the next column).
- PJM:** Despite an increase in winter peak demand forecast of over 3.2 GW (2.5%), Planning Reserve Margins in PJM have risen slightly with increased firm imports and demand response. While no BPS reliability issues are currently anticipated in PJM, natural gas infrastructure capacity could be negatively affected if legal proceedings require the shutdown of facilities that were installed as part of a regional natural gas pipeline expansion project (see the natural gas fuel highlight in the next column). Natural gas is the leading fuel for electricity generation in PJM: In 2023 it was over 44.1% of total generation in the PJM real-time energy market.² PJM estimates that fuel service for as much as 20 GW of generation capacity is directly or indirectly served by the pipeline at the center of these proceedings.
- SERC-East:** Lower forecasted peak demand is contributing to a 0.6% uptick in reserve margins for the winter when compared to 2023. However, there has been a nearly 1 GW decline in dispatchable thermal resources (primarily coal-fired generation) and growth in solar capacity that does little to help meet peak winter demand. Severe cold weather extending into the southern United States could lead to energy emergencies due to operators facing fuel supply issues, increases in generator forced outages, and higher electricity demand.
- Southwest Power Pool (SPP):** The ARM of 44% is five percentage points higher than last winter, driven primarily by a significant increase in demand-response resources. Forecasted peak demand has risen for this winter by 1.8 GW from the previous year while total existing generation capacity has fallen by more than 4 GW. However, of the 4 GW decline in generation resources, nearly 2 GW come from adjustments in wind and solar capacity contributions, which have a lower energy value during the winter season. At the

same time, natural gas generation capacity, which has a higher winter energy value, has expanded by 2.6 GW year over year. The area's vast wind resources (8% of the generation fleet) can alleviate firm capacity shortages under the right conditions; however, energy risks emerge during periods of low wind.

- Texas RE-ERCOT:** The risk of reserve shortage remains elevated due primarily to robust load growth that continues to surpass growth in dispatchable resources. Net internal demand has risen by more than 2 GW since 2023. Solar and wind capacity has increased by more than 3 GW, while dispatchable resources have only increased by 1 GW. In November 2023, ERCOT introduced firm fuel supply service to address fuel-related outages that can occur when natural gas supplies are limited.
- 2. Natural gas fuel to generators is threatened this winter by ongoing concerns with natural gas production and delivery in extreme conditions and a potential regional pipeline capacity issue in the U.S. Mid-Atlantic and Northeast.** Natural gas is an essential fuel for electricity generation in winter. While the natural gas industry is making progress on commercial practices and voluntary commitments to improve winter preparedness, supplies to electric generators remain vulnerable in extreme cold temperatures in many parts of North America, placing electric reliability at risk. As winter approaches, NERC encourages all entities across the gas-electric value chain—from production to the burner tip and the busbar—to take all necessary actions to prepare for extreme cold, keep natural gas flowing, and keep the lights and furnaces on.

At the time of this WRA, the operator of a major interstate natural gas pipeline expansion project serving the U.S. Mid-Atlantic and Northeast is facing legal challenges to the continued operation of the expanded pipeline. According to a recent Federal Energy Regulatory Commission (FERC) filing, a halting of the expanded pipeline operations would affect “firm transportation capacity in New Jersey, New York, Pennsylvania, Maryland, Delaware, Virginia, North Carolina, South Carolina, Georgia, and Alabama.” These states correspond to the PJM, NPCC-New York, SERC-East, and SERC-Southeast assessment areas. During recent extreme winter weather events, each of these areas has experienced or come dangerously close to a shortfall in electricity supply for which fuel availability was a significant factor. Because foreseeable extreme cold temperatures have the potential to push the existing natural gas supply infrastructure to maximum capacity again this winter, a shutdown of in-service regional natural gas facilities would endanger grid reliability.

² See the 2023 Annual State of the Market Report for PJM: Volume 2, Section 3: Energy Market, P 209. (March 14, 2024)

3. **Growing winter load underscores the importance of maintaining sufficient dispatchable generation and strong transmission networks.** Winter electric load is growing in most areas as the grid increasingly powers heating, transportation systems, and new data centers. Serving winter load is becoming more challenging and complex as coal-fired and older natural gas-fired generators retire and are replaced by variable and energy-limited resources. Solar resources, which are overwhelmingly the largest share of new resources connecting to the grid, do not provide output during many hours when winter electricity demand is at its highest. New battery resources can extend the output from solar PV for short durations, but winter's longer hours of darkness, cloud cover, and precipitation will push the limits of today's battery storage capabilities and installed energy capacity. Winter resource adequacy depends on dispatchable generation, reliable fuel supplies, and firm transfer agreements.
4. **Regulatory and industry initiatives to address reliability issues from winter storms Elliott and Uri make the grid better prepared for the upcoming winter.** Cold weather reliability standards, generator weatherization efforts, and early commitment of generators in advance of freezing temperatures contributed to fewer generator outages in 2023–2024 winter storms compared to Winter Storm Uri (2021) and Winter Storm Elliott (2022).³ More accurate weather and load forecasting and better communication among natural gas suppliers, Generator Operators (GOP), and electric grid Balancing Authorities (BA) and Reliability Coordinators (RC) also helped maintain the supply of electricity. Continued vigilance and application of proven mitigations will help reduce reliability risks for the upcoming winter.
5. **The transmission system is recovering from severe damage incurred during the 2024 hurricane season.** The BPS in the U.S. Southeast sustained significant damage in October from hurricanes Helene and Milton, leading to millions of customer outages and damage to hundreds of transmission lines and substations. Over 50,000 utility personnel from across North America worked to restore electricity quickly and safely. Lingering effects that degrade the transmission network can extend for weeks and could make the grid less resilient to extreme winter storms. As restoration in parts of the U.S. Southeast continues, NERC is monitoring the implications for winter reliability.

³ See January 2024 Arctic Storms System Performance Review Presentation, FERC Open Meeting, April 25, 2024

Recommendations

To reduce the risks of energy shortfalls on the BPS this winter, NERC recommends the following:

- RCs, BAs, and Transmission Operators (TOP) in the elevated risk areas identified in the key findings should review seasonal operating plans and the protocols for communicating and resolving potential supply shortfalls in anticipation of potentially high generator outages and extreme demand levels. Operators should review recommendations contained in the 2022 *Winter Storm Elliott Report* and follow-up actions as well as lessons learned from the 2023–2024 Winter.
- Generator Owners (GO) should complete winter readiness plans and checklists prior to December, deploy weatherization packages well in advance of approaching winter storms, and frequently check and maintain cold weather mitigations while conditions persist.
- BAs should be cognizant of the potential for short-term load forecasts to underestimate load in extreme cold weather events and be prepared to take early action to implement protocols and procedures for managing potential reserve deficiencies. Proactive issuance of winter advisories and other steps directed at generator availability contributed to improved reliability during January 2024 winter storms Gerri and Heather compared to prior arctic storms.
- RCs and BAs should implement generator fuel surveys to monitor the adequacy of fuel supplies. They should prepare their operating plans to manage potential supply shortfalls and take proactive steps for generator readiness, fuel availability, load curtailment, and sustained operations in extreme conditions.
- State and provincial regulators can assist grid owners and operators in advance of and during extreme cold weather by supporting requested environmental and transportation waivers as well as public appeals for electricity and natural gas conservation.

Assessment of Planning Reserve Margins and Operational Risk Analysis

Table 1: Seasonal Risk Assessment Summary

Category	Criteria ¹
High Potential for insufficient operating reserves in normal peak conditions	<ul style="list-style-type: none"> Planning Reserve Margins do not meet Reference Margin Levels (RML); or Probabilistic indices exceed benchmarks (e.g., LOLH of 2.4 hours over the season); or Analysis of the risk hour(s) indicates resources will not be sufficient to meet operating reserves under normal peak-day demand and outage scenarios²
Elevated Potential for insufficient operating reserves in above-normal conditions	<ul style="list-style-type: none"> Probabilistic indices are low but not negligible (e.g., LOLH above 0.1 hours over the season); or Analysis of the risk hour(s) indicates resources will not be sufficient to meet operating reserves under extreme peak-day demand with normal resource scenarios (i.e., typical or expected outage and derate scenarios for conditions);² or Analysis of the risk hour(s) indicates resources will not be sufficient to meet operating reserves under normal peak-day demand with reduced resources (i.e., extreme outage and derate scenarios)³
Normal Sufficient operating reserves expected	<ul style="list-style-type: none"> Probabilistic indices are negligible Analysis of the risk hour(s) indicates resources will be sufficient to meet operating reserves under normal and extreme peak-day demand and outage scenarios⁴

Table Notes:

¹The table provides general criteria. Other factors may influence a higher or lower risk assessment.

²Normal resource scenarios include planned and typical forced outages as well as outages and derates that are closely correlated to the extreme peak demand.

³Reduced resource scenarios include planned and typical forced outages and low-likelihood resource scenarios, such as extreme low-wind scenarios, low-hydro scenarios during drought years, or high thermal outages when such a scenario is warranted.

⁴Even in normal risk assessment areas, extreme demand and extreme outage scenarios that are not closely linked may indicate risk of operating reserve shortfall.

ARMs, which provide the Planning Reserve Margins for normal peak conditions, as well as reserve margins for seasonal risk scenarios of more extreme conditions are provided in Table 2.

Table 2: Seasonal Risk Scenario Margins

Assessment Area	Anticipated Reserve Margin	Typical Outages	Extreme Conditions
MISO	55.1%	10.3%	-0.8%
MRO-Manitoba	12.3%	9.9%	7.5%
MRO-SaskPower	37.7%	34.0%	20.2%
NPCC-Maritimes	15.1%	10.7%	-6.2%
NPCC-New England	54.5%	35.9%	4.7%
NPCC-New York	64.3%	38.1%	11.2%
NPCC-Ontario	25.1%	25.1%	18.1%
NPCC-Québec	14.1%	10.0%	-3.5%
PJM	40.6%	28.3%	18.5%
SERC-Central	29.2%	22.1%	17.8%
SERC-East	25.0%	20.6%	10.5%
SERC-Florida Peninsula	37.8%	31.7%	15.6%
SERC-Southeast	42.8%	36.4%	30.8%
SPP	44.0%	16.8%	-0.9%
Texas RE-ERCOT	46.1%	27.3%	-19.3%
WECC-AB	36.3%	34.0%	22.7%
WECC-BC	20.9%	20.8%	-4.3%
WECC-CA/MX	72.4%	63.2%	41.7%
WECC-NW	57.9%	53.5%	12.2%
WECC-SW	94.0%	89.5%	53.0%

Seasonal risk scenarios for each assessment area are presented in the Regional Assessments Dashboards section. The on-peak reserve margin and seasonal risk scenario charts in each dashboard provide potential winter peak demand and resource condition information. The reserve margins on the right side of the dashboard pages provide a comparison to the previous year's assessment. The seasonal risk scenario charts present deterministic scenarios for further analysis of different demand and resource levels with adjustments for normal and extreme conditions. The assessment areas determined the adjustments to capacity and peak demand based on methods or assumptions that are summarized in the seasonal risk scenario charts; more information about these dashboard charts is provided in the Data Concepts and Assumptions section.

The seasonal risk scenario charts can be expressed in terms of reserve margins: In Table 2, each assessment area's ARMs are shown alongside the reserve margins for a typical generation outage