

**STATE OF NEBRASKA
NEBRASKA POWER REVIEW BOARD**

IN THE MATTER OF THE APPLICATION OF)	PRB-3931-G
THE OMAHA PUBLIC POWER DISTRICT,)	PRB-3932-G
HEADQUARTERED IN OMAHA, NEBRASKA,)	(consolidated)
REQUESTING AUTHORITY TO CONSTRUCT)	
A 450 MEGAWATT NATURAL GAS)	
GENERATION FACILITY IN SARPY COUNTY,)	
NEBRASKA, AND A 150 MEGAWATT NATURAL)	ORDER
GAS GENERATION FACILITY IN DOUGLAS)	
COUNTY, NEBRASKA.)	

References in this Order to testimony are designated by a “T” followed by the transcript page, then the lines upon which the testimony appears, while references to exhibits are designated by “Exh.” Some exhibits are marked with more than one page number. The applicable page numbers added by the court reporter for purposes of this proceeding appear in the lower right corner on each page of the exhibits.

ON THE 19th day of October, 2020, the above-captioned matter came on for consideration before the Nebraska Power Review Board (the Board). The Board, being fully advised in the premises, and upon reviewing said application and the evidence presented to the Board at said hearing, HEREBY FINDS AS FOLLOWS:

FINDINGS OF FACT

1. That on September 16, 2020, the Omaha Public Power District (OPPD), headquartered in Omaha, Nebraska, filed an application with the Board requesting authority to construct a 450 megawatt (MW) natural gas simple-cycle combustion turbine

generation facility and related facilities. (Exh. 1). The application was designated “PRB-3931-G”.

2. Also on September 16, 2020, OPPD filed an application with the Board requesting authority to construct a 150 MW natural gas reciprocating internal combustion engine natural gas generation facility and related facilities to be located in Douglas County, Nebraska. (Exh. 3). That application was designated “PRB-3932-G.”

3. OPPD requested the ability to increase or decrease the capacity of either or both generation facilities by fifty (50) megawatts in order to accommodate bids responding to the request for proposals. If the final capacity of either or both facilities were to be changed, the total combined capacity for both applications will not exceed six hundred (600) megawatts. (T194:7-11; Exh. 1, page 4; Exh. 3, page 4).

4. OPPD considers both applications to be an “integrated portfolio” to address its generation needs. (Exh. 1, page 3; Exh. 3, page 3). The related facilities in both applications include a substation and dedicated interconnection transmission facilities. (Exh. 1, page 3; Exh. 3, page 3). Following issuance of the required notices, the hearing officer consolidated both applications for purposes of procedural matters and hearings.

5. The estimated total cost for PRB-3931-G is \$394,000,000. The estimated cost for the generation station is \$362,000,000. The estimated cost of related facilities, including an interconnection substation, is \$32,000,000. (Exh. 1, pages 2-3).

6. The estimated total cost for PRB-3932-G is \$257,000,000. The estimated cost for the generation station is \$240,000,000. The estimated cost of related facilities, including an interconnection substation, is \$17,000,000. (Exh. 3, pages 2-3).

7. That the proposed location for the generation facility in PRB-3931-G is near the intersection of 168th Street and Fairview Road, in the northwest quarter of Section 15, Township 13 North, Range 11 East, Sarpy County, Nebraska. The site is directly west of the Sarpy County Landfill. Two maps showing the proposed location of the project area were included with the application. (T150:21-25; Exh. 1, pages 5-7; Exh. 27, page 5).

8. That the proposed location for the generation facility in PRB-3932-G is southeast of the intersection of 120th Street and Military Road, in the northwest quarter of Section 32, Township 16, Range 12 East, Douglas County, Nebraska. Two maps showing the proposed location of the project area were included with the application. (Exh. 3, pages 5-7; Exh. 27, page 5).

9. That those power suppliers, other than the Applicant, that the Board deemed to be potentially affected by or interested in application PRB-3931-G were the City of Lincoln doing business as the Lincoln Electric System, the Municipal Energy Agency of Nebraska, the Nebraska Public Power District, the City of Auburn, the City of Fremont, the City of Nebraska City, the City of Tecumseh, and the City of Wahoo. (Exh. 2, page 5). Written notice of the filing of the application and the hearing date, and the opportunity to file a Petition for Intervention or a Protest, was provided to these potentially interested power suppliers and the Applicant via certified U.S. mail. (Exh. 2).

10. That those power suppliers, other than the Applicant, that the Board deemed to be potentially affected by or interested in application PRB-3932-G were the City of Lincoln doing business as the Lincoln Electric System, the Municipal Energy

Agency of Nebraska, the Nebraska Public Power District, the City of Fremont, the City of Nebraska City, the City of Wahoo, and the City of West Point. (Exh. 4, page 5).

Written notice of the filing of the application and the hearing date, and the opportunity to file a Petition for Intervention or a Protest, was provided to these potentially interested power suppliers and the Applicant via certified U.S. mail. (Exh. 2).

11. Notice of the filing of both applications and the hearing date, and the opportunity to file a Petition for Intervention, was provided to the general public by publication in the *Omaha World-Herald* newspaper on Thursday, September 24, 2020. (Exh. 5). Notice of the filing of both applications and the hearing date, and the opportunity to file a Petition for Intervention, was also provided to the general public by publication in the *Gretna Breeze* newspaper (Exh. 6) and the *Papillion Times* newspaper (Exh. 7) on Wednesday, September 30, 2020.

12. A certified copy of Consent and Waiver forms were offered and accepted into evidence at the hearing, as provided by law and the Board's Rules of Practice and Procedure, whereby the Municipal Energy Agency of Nebraska consented to the approval of applications PRB-3931-G and PRB-3932-G and waived a hearing in the matter. (Exhs. 16 and 17). Similarly, a certified copy of Consent and Waiver forms were offered and accepted into evidence whereby the Lincoln Electric System (Exhs. 14 and 15) and the Nebraska Public Power District (Exhs. 18 and 19) consented to the approval of applications PRB-3931-G and PRB-3932-G. No power suppliers that received notice of either application filed a Protest or Petition for Intervention.

13. On October 13, 2020, the Sierra Club filed a Petition For Intervention with the Board in opposition to the approval of applications PRB-3931-G and PRB-3932-G. (Exh. 11). On October 16, 2020, OPPD filed a Brief in Opposition to the Sierra Club's Petition for Intervention. On October 19, 2020, the Board convened a hearing to address the issue of whether the Sierra Club had standing to intervene in the proceedings, and whether the Sierra Club's Petition for Intervention should be granted. On November 9, 2020, the Board issued an Order in which it found that the Sierra Club lacked standing to intervene in the proceedings and denied the Sierra Club's Petition for Intervention.

14. That pursuant to the requirement set out in Neb. Rev. Stat. § 37-807(3), the Board consulted with the Nebraska Game and Parks Commission (the Commission) to ensure that the Board utilizes its authority in furtherance of the purposes of the Nebraska Nongame and Endangered Species Act, and to ensure that approval of the proposed generation facilities would not jeopardize the continued existence of any endangered or threatened species or result in the destruction or modification of habitat of such species which is determined by the Commission to be critical. The Commission provided two letters to the Board, both dated October 13, 2020, addressing PRB-3931-G and PRB-3932-G.

15. In the letter addressing PRB-3931-G, the Commission stated that the project area is within the range of the threatened Western Prairie Fringed Orchid and the Northern Long-Eared Bat. However, there are no records of those species within the vicinity of the project area, and the site does not appear to have suitable habitat for the species. The Commission therefore determined that application PRB-3931-G will have

“No Effect” on state-listed endangered or threatened species, and the Commission did not object to the Board’s approval of the project. (Exh. 9).

16. In the letter addressing PRB-3932-G, the Commission stated that the project area is within the range of the threatened Northern Long-Eared Bat. Although there are no records of the species in the vicinity of the project area, suitable summer roosting habitat exists within the vicinity of the project site. Due to this, the Commission directed that tree clearing in the project area should not occur during the maternal roosting and pup-rearing season of June 1 to July 31. If tree clearing must occur during June 1 to July 31, a bat survey will be performed by a qualified biologist prior to the clearing of any trees. With the implementation of these mitigation measures, the Commission found that the project “May Affect, but is not likely to adversely Affect” Northern Long-Eared Bats or other state-listed endangered or threatened species, and the Commission did not object to the Board’s approval of the project. (Exh. 10).

17. That on October 19, 2020, subsequent to that portion of the hearing to address the Sierra Club’s Petition for Intervention, the Board convened the formal evidentiary hearing to address the merits of applications PRB-3931-G and PRB-3932-G.

18. OPPD currently has generation assets at its disposal with a total capacity of 2,690.8 megawatts. The peak load for OPPD’s system is 2,436.1 megawatts. (Exh. 27, page 6). Peak load is the highest level of load, or electricity being used, during a set time period, such as one day or one year. (T214:16 to 215:2).

19. OPPD decided to shut down Ft. Calhoun Nuclear Station. The facility has already been shuttered, and OPPD is in the process of decommissioning the facility. Fort

Calhoun had a capacity of 502 megawatts. (T161:5-7; Exh. 27, page 9). In 2014 OPPD committed to retiring its North Omaha Units 1, 2 and 3. The units use natural gas for fuel. These three units, built in the 1950's, have a combined capacity of 241.6 megawatts. OPPD plans to retire the units by the end of 2023. (T164:8-21; T164:24 to 165:6; Exh. 21, page 26). Thus, OPPD will retire approximately 750 of its total of roughly 2,700 megawatts of generation capacity within the 2016 to 2023 time span. (T217:2 to 218:10; Exh. 27, page 22).

20. Although not an OPPD generation asset, the MidAmerican Energy company either has accomplished or is in the process of decommissioning Walter Scott Units 1 and 2. The Walter Scott generation facility is in Iowa immediately east of OPPD's retail service area. These units have a total capacity of 131 megawatts. (Exh. 27, page 9). This is important because, due to the interconnected nature of the transmission grid, decommissioning of any generation facility in the vicinity of OPPD's service area reduces the electric energy available in the area, thus impacting OPPD and its ability to ensure sufficient electric energy at all times for customers in its service area. (T161:12 to 162:1; Exh. 27, page 9).

21. OPPD has added approximately 1,000 megawatts of wind generation assets (either owned by OPPD or under a contractual purchase arrangement) in northeast and north central Nebraska. However, all but 60 megawatts of these generation resources are located outside OPPD's service area. Such remote generation resources are reliant on the availability of transmission resources in order to transport the electric output to OPPD's customers. (T162:2-7; Exh. 27, page 9).

22. The Omaha metropolitan area, the largest load center in OPPD's service area, has transmission constraints to the north, east and south of the Omaha area. This means that transmission assets on the north, east and south of the Omaha area are near capacity and are limited in their ability to move additional electricity into the Omaha area. In fact, the transmission facilities to the north, east and south of the Omaha area have been designated as transmission flow gates by the SPP. Transmission flow gates are essentially choke points or bottlenecks in the transmission system that limit how much electric power can be moved into or out of those areas. By placing the proposed generators in Sarpy and Douglas County in or near the City of Omaha, OPPD can help ensure electric service is available in the Omaha area in the event of transmission congestion or if a transmission line would be taken out of service due to circumstances such as unscheduled maintenance or a severe weather event. Building new transmission assets would help alleviate the overloading issues, but it would not solve the issue of generation resource adequacy in the Omaha area. (T241:10 to 247:23; T250:18 to 251:14; Exh. 27, pages 28 - 30).

23. Generation resources that can be ramped up or down rapidly can assist in providing voltage support to the local transmission grid system. Placing dispatchable generators that are always available and can react to sudden changes in voltage in a localized transmission grid area are most effective when the generators are located next to large electric loads. (T254:2-10). "Ramping" is the speed at which a generator can increase or decrease its electrical output. (T224:4-11). OPPD conducted modeling to determine how the addition of the proposed generators in PRB-3931-G and PRB-3932-G,

as well as the planned purchase of 400 megawatts capacity of solar generation, would affect voltage stability in OPPD's service area. The modeling showed that adding the two new natural gas generators plus the solar capacity purchases would provide considerable benefits in terms of voltage support. (T253:8 to 262:3; Exh. 27, pages 31 and 33). Without the additional generation resources, OPPD's transmission system could be in jeopardy of experiencing voltage collapse and blackouts. (T259:12-21).

24. Wind and solar generation resources are known as "intermittent generation", which means that the facility is only generating electricity when there is sufficient wind or sunshine to do so. Thus, depending on the weather, the facilities may not be available to produce electricity when needed to meet the peak load demands of OPPD's customers. Due to this, wind resources are only accredited by the Southwest Power Pool (see paragraph 26) at about fifteen percent of the facility's capacity. (T162:8-15). Solar generating facilities are normally accredited in the 60 to 70 percent range in summer, and almost zero during winter. (T212:2-17). Generating facilities using natural gas such as the proposed facilities in PRB-3931-G and PRB-3932-G are accredited at 100 percent of their full rated capacity. (T162:16-24; T212:10-19). Energy storage facilities can be accredited from 75 to 100 percent of capacity, but can provide energy for only a set limited time period, such as four or six hours, depending on the type and capacity of the storage facility. (T213:18 to 214:1).

25. As a bulk power system owner and operator, OPPD has mandatory obligations to comply with regulations established by federal or federally-approved authorities such as the Federal Energy Regulatory Commission, the North American

Electric Reliability Corporation, and the Midwest Reliability Organization. (T208:1-10; T233:6 to 234:19; T234:20 to 235:14; Exh. 27, pages 18 and 26).

26. In 2009, OPPD joined the Southwest Power Pool (SPP), a federal-approved regional transmission organization. (T:208:16-18; T210:10-17; Exh. 27, page 18). The SPP is responsible for maintaining transmission grid operations in an operating area that includes all or parts of fourteen states in the central United States, and for ensuring that generation balances with electric load on a real-time basis. (T208:16 to 209:8; Exh. 27, page 19). Another important function of the SPP is operation of the integrated marketplace in its operating area, where power suppliers offer their generation resources into the market, and loads bid to purchase electric energy from that market. (T209:9-14).

27. Under SPP requirements, OPPD must maintain sufficient accredited generation capacity to meet its peak load, plus have an additional twelve percent of its peak load as a reserve. OPPD's peak load is approximately 2,700 megawatts. (T211:13 to 212:3). With the decommissioning of OPPD's North Omaha Units 1, 2 and 3, along with expiring capacity contracts with other power suppliers, OPPD will eventually not be able to meet its generation capacity obligations with the SPP. (T170:20 to 171:8; Exh. 27, page 11). OPPD's reserve margin is expected to drop to approximately 13% in 2022, but with the addition of the Sarpy and Douglas County natural gas generators, plus entering into a power purchase agreement for approximately 400 megawatts of solar generation capacity, OPPD's reserve margin is expected to increase to 19.6 percent or higher. (T324:16 to 325:11 Exh. 27, page 53).

28. If OPPD were to fail to meet its required capacity obligation, it would face substantial financial penalties imposed by the SPP. The penalty depends on the severity of the shortage. For example, if OPPD fell short of maintaining its reserve margin by 100 megawatts, it would face a penalty of up to \$8.5 million dollars. (T172:14-19; T212:1-8). The fine would likely reach into the tens of millions of dollars due to the amount of shortage, and the fines would continue until the reserve margin shortages were resolved. (T331:15-24). Over the course of a year, the financial penalty would potentially reach \$70 to \$80 million. (T368:12-24; T370:15 to 371:9).

29. Simple-cycle combustion turbines such as the one in PRB-3931-G can increase output to full capacity in about 18 to 20 minutes. Reciprocating internal combustion engines such as the one in PRB-3932-G can increase to full capacity in 5 minutes or less. (T179:5-17). Such rapid response times are important in order to meet sudden load demand changes, to offset the potential loss of generation in the event that OPPD's wind and solar assets rapidly lose the ability to generate electricity due to weather changes, or if OPPD's system were to experience an extreme event such as a tornado, ice storm, or flooding that can quickly affect both generation and transmission assets. (T221:17 to 222:4; T236:10 to 237:1). As an example of the variable nature of renewable generation resources, on April 10, 2019, the output of the Grand Prairie Wind generation facility plunged almost 400 megawatts in one and one-half hours, and did not begin to generate significant amounts again for nearly twenty-four hours. (T320:16 to 321:16; Exh. 27, page 49; Exh. 21, page 26).

30. The SPP provided a letter to the Board explaining that there is a growing need in the SPP region “to rely on resources capable of supplying energy quickly in response to sudden or rapid changes in electric system conditions, including changes associated with the variable nature of SPP’s growing renewable portfolio. SPP has historically relied on quick-starting, fast-responding resources, such as [simple cycle combustion turbines] and [reciprocating internal combustion engines], and expects to continue to rely heavily on them in the region to address reliability needs.” (Exh. 30).

31. Peaking facilities such as the ones in PRB-3931-G and PRB-3932-G are typically called upon a relatively small number of days during a year. Over the past two years OPPD’s peaking units operated between 5 and 6 percent of the time, or about 18 days during a year. But the need for power during those peak periods are critical in order to prevent system disruptions such as brown-outs or black-outs due to a shortage of available electricity in an area. (T180:5-21).

32. In addition to the two natural gas generation facilities in PRB-3931-G and PRB-3932-G, OPPD plans to enter into a power purchase agreement for 400 to 600 megawatts from a photovoltaic solar generation facility. (T186:1-8; Exh. 27, page 13). OPPD would not own or operate the solar facility, but rather contract for the output from a facility owned likely by a private developer. This arrangement is more cost-effective because a private developer can take advantage of the federal investment tax credits for solar facilities, for which OPPD is not eligible because it is a governmental entity. (T187:18 to 191:3). OPPD would use the energy from the solar facility whenever it is available. When the solar facility is not able to deliver electricity to OPPD due to

weather conditions or transmission constraints, OPPD will rely on the generators in PRB-3931-G and PRB-3932-G. Thus, any generators that will be installed to back up the solar facilities will need to have the ability to ramp up production capacity quickly, and likewise reduce it quickly. Simple cycle and reciprocating internal combustion engine natural gas generation facilities have that ability.

33. By having the flexibility to increase or decrease the final generation capacity of either unit by fifty (50) megawatts, OPPD would have much greater flexibility to accept bid proposals from vendors that may be able to provide cost savings if the facility is a certain capacity. (T194:7 to 195:12). For example, OPPD would have the ability to accept a bid for a simple-cycle natural gas generation facility with 400 megawatts capacity, and accept a bid for a reciprocating internal combustion engine natural gas facility with 200 megawatts capacity. Regardless of the exact capacity of the facilities, the total combined capacity for both facilities would not exceed 600 megawatts.

34. The generation facilities in the present applications will not be affected by the capacity of the solar facility for which OPPD will enter into a power purchase agreement. OPPD requires approximately 600 megawatts of dispatchable capacity to meet its customers' needs when the solar facility is not producing energy. Whether OPPD acquires the rights to 400 or 600 megawatts capacity of solar through a contractual arrangement does not alter that OPPD has a need for 600 megawatts of dispatchable generation. (T195:13 to 197:3).

35. OPPD plans to have both the Douglas County and Sarpy County generation facilities be completed and ready for commercial operation in the spring of 2023. This

will allow OPPD to use the new generators in the summer months, which are typically when OPPD sees its peak, or highest, demand of the year. (T200:10-17; T324:23-25).

36. The new generation units would help offset the loss of the decommissioned North Omaha units 1, 2 and 3 in 2023. (Exh. 27, page 11). In the Annual Load and Capability report prepared by the Nebraska Power Association at the request of the Power Review Board (see Neb. Rev. Stat. §§ 70-1024 and 70-1025(3)), it was projected that on a statewide basis Nebraska would face a deficit in generation assets needed to meet the overall load in Nebraska starting in 2026. OPPD's proposed generation facilities in Sarpy and Douglas counties would help remedy that deficit. (T215:6-25; Exh. 27, page 21; Exh. 20, page 7).

37. Currently, approximately one-half of the total statewide generation portfolio is over 40 years old. Addition of the two facilities under consideration would help to diversify the age of the generation assets of both OPPD and the State of Nebraska. (T216:18 to 217:1; Exh. 27, page 22; Exh. 20, page 4). Combustion turbines and reciprocating internal combustion engines have two of the longest life-spans of any type of conventional generation resource, at 30 and 35 years expected asset life, respectively. (Exh. 27, page 42).

38. Although there may be other generation resources that could supply the energy needed by OPPD instead of the two applications before the Board, if OPPD were to acquire the contractual rights to that energy, such resources would be located outside OPPD's service area. OPPD could not rely on the availability of sufficient transmission resources to transport that electricity to where it is needed in OPPD's service area due to

transmission constraints. To obtain all the energy OPPD requires through either contractual arrangements (power purchase agreements) or by installing wind facilities would necessarily involve generation resources that are remote from OPPD's main load center near the City of Omaha. That option would do nothing to address the need for voltage support in the Omaha area, and could even exacerbate the transmission constraint issues currently facing OPPD in the area in and around Omaha. It would not be feasible to place a wind or solar facility with capacity equal to the proposed generators in PRB-3931-G and PRB-3932-G as near to the Omaha load area as can be accomplished with natural gas facilities. (T197: to 199:25; T264:11 to 267:6; Exh. 27, page 33).

39. OPPD examined a multitude of alternate possibilities to building a simple-cycle combustion turbine and a reciprocating internal combustion engines. OPPD considered possibilities such as refitting North Omaha units 4 and 5, using synchronous condensers, implementing demand side management programs to reduce load instead of generating more electricity to meet higher demand, installing solar for the entire needed capacity, battery storage, combined cycle natural gas, and nuclear or coal. Each of these were rejected for various reasons. Some examples that have not been covered elsewhere in this Order: Capacitor banks, synchronous condensers and static VAR compensators are not an efficient way to inject incremental voltage onto the grid system, especially at the scale needed to address OPPD's large loads. (T289:4-14, Exh. 27, page 40). Demand side management programs would reduce load instead of generating electricity. Although such programs can be helpful, it is unrealistic to expect them to achieve the magnitude of change in load necessary to address the situation facing OPPD (T286:10 to

287:23; Exh. 27, page 40). Combined cycle natural gas generators have significantly higher cost than simple cycle generators. Combined cycle would not be cost effective, especially given that the resource will only be used on an as-needed basis. (T289:15 to 290:24. Exh. 27, page 40). Constructing new generation facilities using nuclear or coal for fuel face a very difficult regulatory process. (T291:12-17). Also, combined cycle, coal and nuclear lack the capability to ramp up and down quickly in response to load. (T291:22 to 292:12). Battery storage is not a viable solution for multi-day resiliency events. In other words, if transmission assets were destroyed, or another generation facility in the area had an unscheduled outage, etc., battery storage devices are a limited-time resource that could only provide assistance for a few hours, depending on its exact storage capacity. (T293:6-19; Exh. 27, page 41). OPPD needs to be able to call on a facility for days at a time in the event of an emergency. A storage device would likewise be of no assistance if it had discharged its stored electricity just prior to an outage event. Storage batteries are also currently a high-cost resource. (T294:10 to 295:7).

40. In studying the best generation sources to meet its needs, OPPD ran a myriad of models or screening outputs. These took into account the cost of the generation assets, the reliability/resiliency score, and environmental sensitivity/emissions. (T312:20 to 316:4; Exh. 27, pages 44 to 47). The models indicated that the asset package that optimized all of OPPD's needs were to convert North Omaha Units 4 and 5 to natural gas, add availability to a utility-scale solar resource, and add a natural gas peaking generation using a simple cycle combustion turbine or reciprocating internal combustion engines. (T316:5-24; Exh. 27, page 46). In this portfolio, due to the slow startup and

ramp time of the North Omaha Units 4 and 5, and the growing concentration of renewable energy resources both in OPPD's portfolio and in the region, generation resources that can start up and ramp up quickly and run for a long duration are very important to OPPD as a financial and operational hedge in the SPP electricity market. (T:318:3 to 319:11; Exh. 27, page 47).

41. In order to pay for the two new proposed generation facilities, OPPD plans to issue approximately \$521 million in tax-exempt bonds. The remaining \$130 million would come out of OPPD's yearly revenues. (T345:1 to 346:19; Exh. 27, page 55). OPPD expects that it will be able to issue the bonds without adversely affecting its currently very high credit ratings. Good credit ratings allow a utility access to low-cost borrowing and financial markets. OPPD's credit rating is two places below the highest achievable rating. (T346:20 to 349:22; Exh. 27, page 56). OPPD expects that its revenues will be sufficient to pay the debt on the proposed new natural gas generation facilities without a rate increase. (T355:25 to 356:15).

CONCLUSIONS OF LAW

42. Pursuant to Neb. Rev. Stat. §§ 70-1012, 70-1013, and 70-1014, the Board has jurisdiction to conduct a hearing and either approve or deny an application for authority to construct a generation facilities located in the State of Nebraska or owned by a power supplier headquartered in the State of Nebraska. Such approval is required prior to commencement of construction of facilities such as those described in applications PRB-3931-G and PRB-3932-G.

43. The Board has complied with the requirements under Neb. Rev. Stat. § 37-807(3) to consult with and request the assistance of the Nebraska Game and Parks Commission in order to utilize the Board's authority in furtherance of the purposes of the Nebraska Nongame and Endangered Species Act, and to insure that approval of the proposed generation facilities would not jeopardize the continued existence of any endangered or threatened species or result in the destruction or modification of habitat of such species which is determined by the Commission to be critical. If the Applicant implements the mitigation measures set out in the Commission's letter to the Board dated October 13, 2020 (Exh. 10), the Board will have taken steps necessary to ensure that approval of the proposed generation facilities would not jeopardize the continued existence of any endangered or threatened species or result in the destruction or modification of the critical habitat of such species.

44. OPPD needs additional generation capacity for several reasons. OPPD's load growth requires OPPD to have adequate resources to meet its customers increasing needs. OPPD also must maintain adequate generation reserve margins above its peak load to meet SPP market participant minimums. OPPD has decommissioned Fort Calhoun Nuclear Station (502 megawatts capacity), and will decommission North Omaha Units 1, 2 and 3 by 2023 (241.6 megawatts capacity). MidAmerican Energy is decommissioning Walter Scott Units 1 and 2 (131 megawatts capacity). All these assets will no longer be available to supply the Omaha area with electricity, and all are in the general vicinity of the Omaha metropolitan area. Although OPPD has added approximately 1,000 megawatts capacity of wind generation assets in recent years, these

facilities are intermittent resources that are remotely located from OPPD's largest concentration of customers and load (the City of Omaha). Thus, OPPD's ability to deliver power from its renewable resources to OPPD's service area in general, and to the largest metropolitan area in its area specifically, is dependent not only on weather conditions, but also the availability of transmission assets. Without the addition of these new generation assets, OPPD would not be able to meet its required reserve margins as early as 2023. (T327:9 to 328:6; Exh. 27, page53). These factors demonstrate that OPPD requires additional dispatchable resources that meet the characteristics of the natural gas units in PRB-3931-G and PRB-3932-G, and that such facilities will serve the public convenience and necessity.

45. By placing the generation resources close to its largest metropolitan load center, the City of Omaha and surrounding suburbs, OPPD can help ensure that electricity can be supplied to its customers during highly disruptive events such as ice storms or tornado that can destroy transmission assets and eliminate or curtail the ability to import electricity from more remote areas where other generation assets may be located, whether owned or operated by OPPD or other utilities. This demonstrates that the proposed generation facilities will serve the public convenience and necessity and do not create unnecessary duplication of existing facilities or operations.

46. The evidence shows that although OPPD could perhaps purchase the 600 megawatts of energy it needs from another source, such sources would necessarily be outside OPPD's service area. There is not 600 megawatts of generation capacity available in or near OPPD's service area, certainly not near to OPPD's largest population

and load center, the City of Omaha. This would mean that the availability of the energy from these remote sources would depend entirely on the availability of transmission resources at the time the energy is needed by OPPD's customers. Such dependence on the availability of transmission resources do not ensure that electric energy is available on an immediate and dependable basis. To have the rights to the needed energy without the ability to transport it to where it is needed in OPPD's service area at the specific time it is needed is of little value to OPPD's customers. This demonstrates that the generation facilities in PRB-3931-G and PRB-3932-G would not create unnecessary duplication of facilities or operations.

47. Generators such as those under consideration can provide multiple benefits to a utility. In addition to the ability to sell electricity into the SPP market, generators with rapid-response capabilities can help alleviate transmission constraints by injecting electricity into the system inside the constrained area. The Omaha metropolitan area is the center of several transmission constraints, or transmission flow gates, as determined by the SPP. (T250:18 to 251:6; Exh. 27, pages 28 and 30.). Rapid-response generators can also serve to ensure that electricity is available in the Omaha metropolitan area in the event of a transmission outage. (T250:7-14). These types of generators can also provide voltage support in a local transmission grid area. Voltage support is most effective by placing the rapid-response generation source near large electric loads. (T254:4-17). In this case, the generators would be in or near the City of Omaha, the largest population and load center in OPPD's service area. Alleviating transmission constraints, ensuring the availability of electricity during weather and other emergency events, and providing

voltage support to the metropolitan Omaha area demonstrate that the generators will meet the public convenience and necessity and do not create unnecessary duplication of existing facilities or operations.

48. Although it is the Board's responsibility to consider the needs for OPPD and its customers specifically, and also Nebraska in general, when reviewing applications, the interconnected nature of the electric grid and regional nature of the SPP, of which OPPD is a member, is difficult to ignore. The SPP, in its letter to the Board (Exh. 30), describes the importance to the region to have quick-starting, fast-responding generation resources such as those in PRB-3931-G and PRB-3932-G, and that the SPP expects to continue to rely heavily on such resources to address its reliability needs. In fact, the SPP anticipates additional need for and utilization of these types of generation resources. (Exh. 30). The Legislature has acknowledged the growing importance of the interconnected transmission grid and regional transmission organizations. In Neb. Rev. Stat. § 70-1014(2) the Legislature requires the Board to consider a regional transmission organization's planning process and benefits to the region when approving Nebraska bulk transmission assets. Generation assets such as those in the present applications benefit not only OPPD, its customers, and the Nebraska in general, but also the SPP operating area, of which OPPD is a part. Fast-responding generation assets can provide reactive support in an area to maintain proper system voltages. Obviously, such support provides a significant benefit to OPPD's customers, particularly during periods where the system may experience rapid fluctuations in energy availability due to factors such as weather conditions or sudden loss of energy from renewable generation sources.

49. The Board finds that the proposed generation facilities will serve the public convenience and necessity.

50. The Board finds that the evidence demonstrates that OPPD can most economically and feasibly supply the electric service resulting from the proposed projects.

51. The Board finds that the evidence demonstrates the proposed project will not unnecessarily duplicate other facilities or operations.

52. The Board notes that the hearing officer accepted exhibit 33 into evidence. Exhibit 33 consists of twelve letters of support for the proposed facilities in applications PRB-3931-G and PRB-3932-G. The letters were written by corporate and educational customers of OPPD. Although the Board acknowledges that the entities involved are important OPPD customers, and their significance to the City of Omaha, the OPPD service area, and the State of Nebraska as a whole is undeniable, there is nothing in the letters that indicate specialized or technical knowledge of the applications or Nebraska's electric industry. Although it appears from one letter that Professor Baruth of Creighton University holds a Ph.D. in Physics, the letter was not offered as expert testimony, and there is no indication that Professor Baruth has detailed personal knowledge regarding the facts surrounding either of the applications. The Board therefore gives no weight to the letters in terms of the Board's decision in PRB-3931-G and PRB-3932-G. Expressions of customer support or opposition, even from such significant entities as those in Exhibit 33, is not relevant to these proceedings. The fact that these letters were accepted into evidence should not be viewed as creating any precedent that expressions of customer

support or opposition have legal relevance in Power Review Board proceedings where the Board is considering the approval of applications for generation or transmission facilities, unless the customer can demonstrate technical expertise and personal knowledge regarding the facts surrounding a proposed facility. (T126:25 to 129:15; Exh. 33).

53. That based on the foregoing findings, the Applicant is entitled to an Order approving the construction of the generation facilities described in applications PRB-3931-G and PRB-3932-G.

ORDER

That during that part of its public meeting on October 19, 2020, held subsequent to the hearing on applications PRB-3931-G and PRB-3932-G, a majority of the members of the Power Review Board (4 yes, 0 no) voted in favor of a motion to approve application PRB-3931-G, and also in favor of a motion to approve application PRB-3932-G.

IT IS THEREFORE ORDERED by the Nebraska Power Review Board, pursuant to the Board's action taken during its public meeting held October 19, 2020, that the application designated PRB-3931-G, for authorization to construct a 450 megawatt simple cycle natural gas generation facility in Sarpy County, Nebraska be, and hereby is, APPROVED.

IT IS FURTHER ORDERED by the Nebraska Power Review Board, pursuant to the Board's action taken during its public meeting held October 19, 2020, that the application designated PRB-3932-G, for authorization to construct a 150 megawatt

reciprocating internal combustion engine natural gas generation facility in Douglas County, Nebraska, and hereby is, APPROVED.

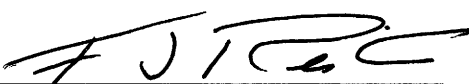
IT IS FURTHER ORDERED that the Omaha Public Power District may increase or decrease the capacity for either or both facilities by fifty (50) megawatts, but the total combined capacity for both applications may not exceed six hundred (600) megawatts.

IT IS FURTHER ORDERED that, pursuant to the requirements in Neb. Rev. Stat. § 37-807(3), the Omaha Public Power District shall comply with the mitigation measures set out by the Nebraska Game and Parks Commission in its coordination letter to the Power Review Board dated October 13, 2020 (Exh. 10), and restated in paragraph 16 of this Order, concerning application PRB-3932-G in Douglas County, Nebraska. OPPD will continue to coordinate with the Nebraska Game and Parks Commission to the extent needed prior to and during construction of the generation facility in Douglas County to ensure that construction activities related to the PRB-3932-G project do not cause preventable harm to threatened Northern Long-Eared Bats.

Reida (Chair), Hutchison (Vice Chair), Moen and Loutzenhiser, participating.

Board member Grennan not participating.

Dated this 4th day of December, 2020.

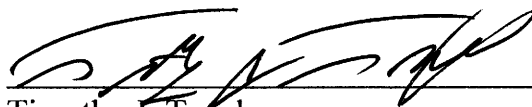


Frank Reida
Chairman

CERTIFICATE OF SERVICE

I, Timothy J. Texel, Executive Director and General Counsel for the Nebraska Power Review Board, hereby certify that a copy of the foregoing **Order** in PRB-3931-G and PRB-3932-G (consolidated) has been served upon the following parties by mailing a copy of the same to the following persons at the addresses listed below, via certified United States mail, on this 4th day of December, 2020.

Stephen M. Bruckner, Esq.
Katherine A. McNamara, Esq.
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Timothy J. Texel
Executive Director and General Counsel