October 25, 2018

via eFiling

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street N.E.
Washington, DC 20426

ER19-185-000

Re: *NorthWestern Corporation (South Dakota)*, Docket No. ER19-_____-000
Revised Standard LGIA to Remove Appendix G pursuant to Order No. 827

Dear Secretary Bose:

Pursuant to Section 206 of the Federal Power Act,[1] Part 35 of the Federal Energy Regulatory Commission's regulations,[2] and Order No. 827,[3] NorthWestern Corporation d/b/a NorthWestern Energy submits for filing a revision to the Standard Large Generator Interconnection Agreement (LGIA), which is contained in Attachment M of NorthWestern's South Dakota Open Access Transmission Tariff (OATT).

I. Background

NorthWestern is a public utility engaged in the generation, transmission, and distribution of electricity and the supply and transportation of natural gas. Its facilities are located primarily in Montana and South Dakota. In South Dakota, NorthWestern is a transmission owner within the Southwest Power Pool, Inc. and has transferred functional control of a large portion of its electric transmission facilities there to SPP. In Montana, NorthWestern is a transmission owner/operator and Balancing Authority Area operator within the Western Electricity Coordinating Council. NorthWestern's Montana and South Dakota transmission facilities are not physically connected and are not in the same electric reliability region. This filing concerns only NorthWestern's South Dakota OATT.

[1] 16 U.S.C. § 824e (2012).
[2] 18 C.F.R. Part 35 (2018).
[3] *Reactive Power Requirements for Non-Synchronous Generation*, Order No. 827, 155 FERC ¶ 61,277, *order on clarification and reh'g*, 157 FERC ¶ 61,003 (2016).

II. Description of Filing

Order No. 827 revised the *pro forma* LGIA to eliminate the exemptions for wind generators from the requirement to provide reactive power.[4] This included an amendment to Appendix G to the LGIA, which was applicable only to newly interconnecting wind generators that had executed a Facilities Study Agreement as of the effective date of the Final Rule.[5] The Commission encouraged transmission providers to file a proposal to remove Appendix G from their LGIAs when all newly interconnecting wind generators that had executed Facilities Study Agreements as of the effective date of the Final Rule had finalized their LGIAs, thus making Appendix G no longer necessary.[6]

All newly interconnecting wind generators that had executed Facilities Study Agreements with NorthWestern as of September 21, 2016, have finalized their LGIAs or withdrawn from the queue. Therefore, NorthWestern submits this filing to remove Appendix G from its LGIA. This filing does not propose any other modifications to the South Dakota OATT.

III. Effective Date

NorthWestern respectfully requests an effective date of December 26, 2018, for the proposed revision. In addition, to the extent necessary, NorthWestern seeks waiver of any other requirements of Part 35 of the Commission's regulations not satisfied by this filing.

IV. Filing Information

This filing includes the following documents:

1) This transmittal letter;

2) Clean and marked versions of the revised pages of Attachment M for posting on eLibrary; and

3) Revised tariff record for Attachment M.

[4] NorthWestern's Order No. 827 compliance filing for South Dakota was submitted in Docket No. ER17-58-000.
[5] Order No. 827, P 63. The Final Rule became effective September 21, 2016. 81 Fed. Reg. 40793, 40805 (June 23, 2016).
[6] *Id.*

V. Notice and Service

NorthWestern will provide a copy of this filing to each generator interconnection customer under the South Dakota OATT and to the South Dakota Public Utilities Commission. In addition, this filing is available for public inspection at NorthWestern Energy's Corporate Office, 3010 West 69th Street Sioux Falls, South Dakota.

VI. Communications

Communications concerning this filing should be directed to the following representatives:

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Vice President – Transmission
NorthWestern Energy
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M. Andrew McLain
Director – Transmission Market Strategy & FERC Compliance Officer
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andrew.mclain@northwestern.com

VII. Conclusion

NorthWestern respectfully requests the Commission accept the proposed revision to its Standard LGIA for filing with an effective date of December 26, 2018.

Respectfully submitted,

s/ *M. Andrew McLain*

M. Andrew McLain
Director – Transmission Market Strategy & FERC Compliance Officer
andrew.mclain@northwestern.com
O (406) 443-8987

cc: South Dakota Public Utilities Commission
Generator Interconnection Customers (South Dakota)

Certificate of Service

I hereby certify that I have this day served the foregoing document upon each person designated in the foregoing transmittal letter, in accordance with Rule 2010 of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.2010.

Dated this 25th day of October, 2018.

s/ Dori L. Quam

Dori Quam
Lead – Transmission Regulatory Support
dori.quam@northwestern.com

Attachment 1

Attachment M

Standard Large Generator Interconnection Procedures and Agreement

Revision to Remove LGIA Appendix G

Requested Effective Date: December 26, 2018

NorthWestern Corporation
(South Dakota)

FERC Open Access Transmission Tariff
Volume No. 2

ATTACHMENT M

This Attachment M is incorporated as part of the Open Access Transmission Tariff in accordance with the Commission's Order 2003, *et seq.* which defined the Standard Large Generator Interconnection Procedures (LGIP) and Large Generator Interconnection Agreement (LGIA).

Standard Large Generator Interconnection Procedures (LGIP)

(Applicable to Generating Facilities that exceed 20 MW)

[*Appendix G removed*]

Attachment 2

Attachment M

Standard Large Generator Interconnection Procedures and Agreement

Marked Pages

NorthWestern Corporation
(South Dakota)

FERC Open Access Transmission Tariff
Volume No. 2

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Standard Large Generator Interconnection Procedures (LGIP)

(Applicable to Generating Facilities that exceed 20 MW)

APPENDIX G

INTERCONNECTION REQUIREMENTS FOR A WIND GENERATING PLANT

Appendix G sets forth requirements and provisions specific to a wind generating plant. All other requirements of this LGIA continue to apply to wind generating plant interconnections.

A. Technical Standards Applicable to a Wind Generating Plant

i. Low Voltage Ride-Through (LVRT) Capability

A wind generating plant shall be able to remain online during voltage disturbances up to the time periods and associated voltage levels set forth in the standard below. The LVRT standard provides for a transition period standard and a post-transition period standard.

Transition Period LVRT Standard

The transition period standard applies to wind generating plants subject to FERC Order 661 that have either: (i) interconnection agreements signed and filed with the Commission, filed with the Commission in unexecuted form, or filed with the Commission as non-conforming agreements between January 1, 2006 and December 31, 2006, with a scheduled in-service date no later than December 31, 2007, or (ii) wind generating turbines subject to a wind turbine procurement contract executed prior to December 31, 2005, for delivery through 2007.

1. Wind generating plants are required to remain in-service during three-phase faults with normal clearing (which is a time period of approximately 4 - 9 cycles) and single line to ground faults with delayed clearing, and subsequent post-fault voltage recovery to prefault voltage unless clearing the fault effectively disconnects the generator from the system. The clearing time requirement for a three-phase fault will be specific to the wind generating plant substation location, as determined by and documented by the transmission provider. The maximum clearing time the wind generating plant shall be required to withstand for a

three-phase fault shall be 9 cycles at a voltage as low as 0.15 p.u., as measured at the high side of the wind generating plant step-up transformer (i.e. the transformer that steps the voltage up to the transmission interconnection voltage or "GSU"), after which, if the fault remains following the location-specific normal clearing time for three-phase faults, the wind generating plant may disconnect from the transmission system.

2. This requirement does not apply to faults that would occur between the wind generator terminals and the high side of the GSU or to faults that would result in a voltage lower than 0.15 per unit on the high side of the GSU serving the facility.

3. Wind generating plants may be tripped after the fault period if this action is intended as part of a special protection system.

4. Wind generating plants may meet the LVRT requirements of this standard by the performance of the generators or by installing additional equipment (e.g., Static VAr Compensator, etc.) within the wind generating plant or by a combination of generator performance and additional equipment.

5. Existing individual generator units that are, or have been, interconnected to the network at the same location at the effective date of the Appendix G LVRT Standard are exempt from meeting the Appendix G LVRT Standard for the remaining life of the existing generation equipment. Existing individual generator units that are replaced are required to meet the Appendix G LVRT Standard.

Post-transition Period LVRT Standard

All wind generating plants subject to FERC Order No. 661 and not covered by the transition period described above must meet the following requirements:

1. Wind generating plants are required to remain in-service during three-phase faults with normal clearing (which is a time period of approximately 4 – 9 cycles) and single line to ground faults with delayed clearing, and subsequent post-fault voltage recovery to prefault voltage unless clearing the fault effectively disconnects the generator from the system. The clearing time requirement for a three-phase fault will be specific to the wind generating plant substation location, as determined by and documented by the transmission provider. The maximum clearing time the wind generating plant shall be required to withstand for a three-phase fault shall be 9 cycles after which, if the fault remains following the location-specific normal clearing time for three-phase faults, the wind generating plant may disconnect from the transmission system. A wind generating plant shall remain interconnected during such a fault on the transmission system for a voltage level as low as zero volts, as measured at the high voltage side of the wind GSU.
2. This requirement does not apply to faults that would occur between the wind generator terminals and the high side of the GSU.
3. Wind generating plants may be tripped after the fault period if this action is intended as part of a special protection system.
4. Wind generating plants may meet the LVRT requirements of this standard by the performance of the generators or by installing additional equipment (e.g., Static VAr Compensator) within the wind generating plant or by a combination of generator performance and additional equipment.

5. Existing individual generator units that are, or have been, interconnected to the network at the same location at the effective date of the Appendix G LVRT Standard are exempt from meeting the Appendix G LVRT Standard for the remaining life of the existing generation equipment. Existing individual generator units that are replaced are required to meet the Appendix G LVRT Standard.

ii. Power Factor Design Criteria (Reactive Power)

The following reactive power requirements apply only to a newly interconnecting wind generating plant that has executed a Facilities Study Agreement as of the effective date of the Final Rule establishing the reactive power requirements for non-synchronous generators in section 9.6.1 of this LGIA (Order No. 827). A wind generating plant to which this provision applies shall maintain a power factor within the range of 0.95 leading to 0.95 lagging, measured at the Point of Interconnection as defined in this LGIA, if the Transmission Provider's System Impact Study shows that such a requirement is necessary to ensure safety or reliability. The power factor range standard can be met by using, for example, power electronics designed to supply this level of reactive capability (taking into account any limitations due to voltage level, real power output, etc.) or fixed and switched capacitors if agreed to by the Transmission Provider, or a combination of the two. The Interconnection Customer shall not disable power factor equipment while the wind plant is in operation. Wind plants shall also be able to provide sufficient dynamic voltage support in lieu of the power system stabilizer and automatic voltage regulation at the generator excitation system if the System Impact Study shows this to be required for system safety or reliability.

iii. Supervisory Control and Data Acquisition (SCADA) Capability

The wind plant shall provide SCADA capability to transmit data and receive instructions from the Transmission Provider to protect system reliability. The Transmission Provider and the

~~wind plant Interconnection Customer shall determine what SCADA information is essential for the proposed wind plant, taking into account the size of the plant and its characteristics, location, and importance in maintaining generation resource adequacy and transmission system reliability in its area.~~