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May 19, 2014

Honorable Kimberly D. Bose  
Secretary  
Federal Energy Regulatory Commission  
888 First Street, N.E.  
Room 1A  
Washington, D.C. 20426

Re: *PJM Interconnection, L.L.C.*  
Docket No. ER14-381-001  
Variable Energy Resources Compliance Filing

Dear Ms. Bose:

PJM Interconnection, L.L.C. (“PJM”) submits this filing in compliance with the Federal Energy Regulatory Commission’s (“Commission”) Order Accepting in Part and Rejecting in Part Proposed Tariff Revisions issued on April 17, 2014, in this proceeding.<sup>1</sup> PJM submits revisions to the PJM Open Access Transmission Tariff (the “Tariff”) to require a 20-minute prior notification period for the submission of each 15-minute interval for transmission schedules rather than 20-minutes before the start of the next clock hour. While not codified in the Tariff and not included as an attachment to this filing, PJM informs the Commission of revisions to PJM’s Regional Practices which comply with the Commission’s directive to remove the requirement that all PJM interchange transactions be at least 45-minutes in duration.

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<sup>1</sup> *PJM Interconnection, L.L.C.*, 147 FERC ¶ 61,045 (2014) (“April 17 Order”).

Finally, PJM submits proposed revisions to the *pro forma* Interconnection Service Agreement (“ISA”) and other related *pro forma* service agreements. The proposed revisions (i) remove “Subject to specific requirements in Manual 14D” and instead memorialize site specific meteorological and forced outage data reporting requirements, and (ii) address how any additional requirements not specified in the Tariff should be handled by the Interconnection Customer and PJM.

## **I. BACKGROUND**

On June 22, 2012, the Commission issued the Final Rule on the Integration of Variable Energy Resources (“VERs”).<sup>2</sup> Order No. 764 requiring each public utility transmission provider to: (1) offer intra-hourly transmission scheduling; and, (2) incorporate provisions into the *pro forma* Large Generator Interconnection Agreement (LGIA) requiring interconnection customers whose generating facilities are VERs to provide meteorological and forced outage data to the public utility transmission provider for the purpose of power production forecasting.

On November 12, 2013, PJM submitted proposed revisions to sections 13.8 and 14.6 of the PJM Open Access Transmission Tariff (the “Tariff”) to (i) add intra-hour transmission (four equal intervals each consisting of 15-minutes) schedules; and (ii) require a 20-minute prior notification period for the submission of transmission schedules in conformity with the Final Rule<sup>3</sup> and PJM’s market rules (the “November 12 Compliance Filing”). In the November 12 Compliance Filing, PJM also proposed amends its *pro forma* ISA<sup>4</sup> to add the specific meteorological data requirements applicable to VERs.

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<sup>2</sup> *Integration of Variable Energy Resources*, Order No. 764, 139 FERC ¶ 61,246 (2012), *order on reh’g*, Order No. 764-A, 141 FERC ¶ 61231 (2012) (Order No. 764).

<sup>3</sup> Order No. 764 P 118.

<sup>4</sup> PJM Tariff, Form Attachment O.

In the April 17 Order, the Commission accepts in part and rejects in part PJM's proposed Tariff revisions submitted in the November 12 Compliance Filing. Regarding the intra-hour scheduling requirements, the Commission finds PJM's proposed Tariff language does not comply with the scheduling requirements of Order No. 764 for two reasons. First, PJM's proposed language would restrict scheduling changes to 20 minutes before the hour, rather than 20 minutes before each 15-minute interval, and therefore is not consistent with Order No. 764.<sup>5</sup> Second, the Commission finds PJM's practice in the manuals of requiring interchange transactions to have a minimum duration of 45 minutes inconsistent with Order No. 764 because it does not allow a generator to schedule for less than three consecutive 15-minute intervals.<sup>6</sup>

Regarding PJM's proposed Interconnection Service Agreement ("ISA") meteorological and forced outage data reporting requirements, the Commission conditionally accepted PJM's proposed Tariff revisions. However, the Commission found PJM did not fully comply with the meteorological reporting requirements of Order No. 764.<sup>7</sup>

## **II. DESCRIPTION OF FILING AND PROPOSED TARIFF REVISIONS**

### **A. Intra-Hour Scheduling Requirements**

#### **i. Introduction**

As stated in the November 12 Compliance Filing, PJM's existing business rules as embodied in its Manuals and Regional Practices already comply with the Commission's 15-minute scheduling intervals and 20-minute prior notice of schedule submission rules. To comply with Order No. 764, PJM proposed to amend Sections 13.8 and 14.6 of the PJM Tariff in compliance with Order No. 764's intra-hour scheduling requirements to bring those intra-hour scheduling rules into the PJM Tariff. PJM proposed to revise the scheduling rules for both Firm

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<sup>5</sup> April 17 Order P 11.

<sup>6</sup> April 17 Order P 12.

<sup>7</sup> April 17 Order P 17.

Point-to-Point Transmission Service (PJM Tariff Section 13.8) and Non-Firm Point-to-Point Transmission Service (PJM Tariff Section 14.6) by (i) adding the option for transmission customers to submit intra-hour transmission (four intervals consisting of 15-minute schedules) schedules; and (ii) requiring a 20-minute prior notification period for the submission of transmission schedules.<sup>8</sup>

**ii. Proposed Tariff Revisions**

In order to fully comply with the Commission's directives, PJM submits additional revisions to PJM Tariff Sections 13.8 and 14.6 requiring a 20-minute prior notification period for the submission of each 15-minute interval for transmission schedules rather than 20-minutes before the start of the next clock hour. As stated in the November 12 Compliance filing, PJM's Regional Practices already comply with the 15-minute scheduling intervals and 20-minute prior notice of schedules submission rules set forth in Order No. 764. The November 12 Compliance Filing made those rules formally part of PJM's compliance filing.<sup>9</sup> It was PJM's intent to adhere to the Commission's directives without variation by including Tariff revisions which required a 20-minute notification before the start of the next scheduling interval rather than 20 minutes before the hour.<sup>10</sup> PJM now corrects this inadvertent oversight.

**iii. 45-Minute Minimum Duration for Interchange Transactions**

PJM's Regional Practices require all PJM interchange transactions be at least 45-minutes in duration to ensure against market abuses.<sup>11</sup> In the November 12 Compliance Filing, PJM

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<sup>8</sup> PJM's Tariff Sections 13.8 and 14.6 currently require up to 30 minutes prior notice for the submission of transmission schedules but the market rules in PJM's Regional Practices and Manuals require 20 minutes prior notice for the submission of transmission schedules. It was not PJM's intent to vary from the Commission's directive in Order No. 764 to provide that scheduling changes will be permitted twenty minutes before the start of the next scheduling interval. The failure to propose scheduling changes be permitted 20 minutes *before the start of the next scheduling interval* was an inadvertent oversight.

<sup>9</sup> November 12 Compliance Filing at page 5.

<sup>10</sup> See November 12 Compliance Filing at pages 1 and 5.

<sup>11</sup> Regional Practices at page 38.

proposed to retain the 45-minute minimum duration for interchange transactions market rule.<sup>12</sup> To support this proposal, PJM relied on the “consistent with or superior to” standard under Order No. 764.<sup>13</sup>

In the April 17 Order, the Commission finds PJM’s practice of requiring interchange transactions to have a minimum duration of 45-minutes is inconsistent with Order No. 764 because it does not allow a generator to schedule for less than three consecutive 15-minute intervals.<sup>14</sup> While not codified in the Tariff, PJM informs the Commission of revisions to PJM’s Regional Practices which comply with the Commission’s directive to remove the requirement that all PJM interchange transactions be at least 45-minutes in duration. PJM revises the Regional Practices to remove the language which requires interchange transactions to have a minimum duration of 45-minutes as of May 19, 2014, to correspond with the proposed effective date of the Tariff revisions submitted. To implement this market rule change, PJM will also remove the 45-minute code restriction in the Enhanced Energy Scheduler.

PJM remains concerned with the potential for inappropriate scheduling behavior caused by removing the 45-minutes minimum duration rule because of a return in the PJM region to the market and reliability issues identified in the November 12 Compliance Filing. PJM will monitor and, if necessary, engage its stakeholder on long term mitigation measures to address potential inappropriate scheduling behavior including potentially manipulative conduct leading to operational or market issues.<sup>15</sup>

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<sup>12</sup> November 12 Compliance Filing at pages 5-7.

<sup>13</sup> November 12 Compliance Filing at pages 5-12; *citing* Order No. 764 PP 107 and 374.

<sup>14</sup> April 17 Order P 12.

<sup>15</sup> This is not an immediate concern for PJM because (i) the Commission granted the Midcontinent Independent System Operator, Inc. (“MISO”) an extension until June 1, 2015, to maintain its existing restrictions that disallows the submission of schedules past the start of the hour (147 FERC ¶ 61,046) and (ii) the New York Independent System Operator, Inc. (“NYISO”) submitted and FERC accepted new rules which requires interchange imports and exports to submit their offers and bids at least 75 minutes before each operating hour (146 FERC ¶ 61,208). Thus,

## **B. Data Reporting to Support Power Production Forecasting**

### **i. Introduction**

In the April 17 Order, the Commission requires PJM to revise Schedule H of the Form of Interconnection Service Agreement (“*pro forma* ISA”)<sup>16</sup> to remove the reference “Subject to specific requirements in Manual 14D” so PJM is not unilaterally imposing requirements not memorialized in the *pro forma* LGIA. In addition, the Commission requires PJM to include in Attachment H to the *pro forma* ISA a provision that addresses how any additional requirements not specified in the Tariff should be handled by the Interconnection Customer and PJM. The Commission finds PJM’s revision to Schedule H omits the *pro forma* language in Order No. 764 that reads: “The Transmission Provider and Interconnection Customer whose Generating Facility is a Variable Energy Resource shall mutually agree to any additional meteorological data that are required for the development and deployment of a power production forecast.”<sup>17</sup>

### **ii. Proposed Tariff Revisions**

PJM revises the *pro form* ISA, to include the meteorological and forced outage data reporting requirements included in Manual 14D without referencing “Subject to specific requirements in Manual 14D.” Because Manual 14D designates wind speed and wind direction as required but temperature and atmospheric pressure as “preferred,” PJM will also update Manual 14D to be consistent with the *pro form* ISA revisions submitted with this filing. As directed by the Commission, PJM adds the following provision that addresses how any additional requirements not specified in the Tariff should be handled by the Interconnection Customer and PJM:

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vast majority of interchange transactions into and out of the PJM Region are subject to longer scheduling requirements until at least June 1, 2015.

<sup>16</sup> PJM Tariff, Attachment O.

<sup>17</sup> April 17 Order P 17.

“The Transmission Provider and Interconnection Customer whose Generating Facility is a Variable Energy Resource shall mutually agree to any additional meteorological data that are required for the development and deployment of a power production forecast.”

PJM also makes identical revisions to: (i) Tariff, Attachment O-1, Form of Interim Interconnection Service Agreement (the “*pro form* IISA”), Schedule B “Interconnection Requirements For A Wind Generation Facility” and (ii) Tariff, Attachment P, Form of Interconnection Construction Service Agreement (“*pro form* ICSA”), Schedule N “Interconnection Requirements For A Wind Generation Facility.” These changes are necessary to align the wind power forecasting and generator outage reporting requirements in the ISA with all the *pro form* service agreements in the PJM Tariff which address the interconnection requirements for wind generation facilities.<sup>18</sup>

### **III. EFFECTIVE DATE**

PJM requests an effective date of May 19, 2014, for the proposed Tariff revisions attached to this transmittal letter.<sup>19</sup>

### **IV. DOCUMENTS ENCLOSED**

PJM includes with this transmittal letter the clean and redline revised PJM Tariff sections.

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<sup>18</sup> As stated in the November 12 Compliance filing, PJM is not including in the *pro form* service agreements data reporting requirement for other VERs such as solar power resources because PJM does not currently have solar power production forecasting tools (*See* Order No. 764 P 174).

<sup>19</sup> In the November 12 Compliance Filing PJM requested a January 13, 2014 effective date for the proposed Tariff revisions. To implement the present compliance filing directives, PJM must use a prospective effective date for the Tariff revisions submitted to comply with the Commission’s directives in the April 17 Order. Given that the April 17 Order is specific with respect to the changes to be made, PJM implements the proposed the Tariff changes before the Commission issues an order formally accepting the proposed Tariff revisions.

## V. CORRESPONDENCE AND COMMUNICATIONS

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## VI. SERVICE

PJM has served a copy of this filing on all PJM Members and on all state utility regulatory commissions in the PJM Region by posting this filing electronically. Under the Commission's regulations,<sup>20</sup> PJM will post a copy of this filing to the FERC filings section of its internet site, at the following link: <http://www.pjm.com/documents/ferc-manuals/ferc-filings.aspx> with a specific link to the newly-filed document, and will send an e-mail on the same date as this filing to all PJM Members and all state utility regulatory commissions in the PJM Region<sup>21</sup> alerting them this filing has been made by PJM and is available by following such link. If the document is not immediately available by using the referenced link, the document will be available through the referenced link within 24 hours of the filing. Also, a copy of this filing will be available on the FERC's eLibrary website at the following link: <http://www.ferc.gov/docs-filing/elibrary.asp> in accordance with the Commission's regulations and Order No. 714.

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<sup>20</sup> See 18C.F.R §§ 35.2(e) and 385.2010(f)(3).

<sup>21</sup> PJM already maintains, updates and regularly uses e-mail lists for all PJM Members and affected state commissions.

Respectfully submitted,

*/s/ Steven R. Pincus*

Steven R. Pincus  
Assistant General Counsel  
Craig Glazer  
Vice President – Federal Government Policy  
PJM Interconnection, L.L.C.

xc: Jignasa Gadani, Director Division of Tariffs & Market Development – East, FERC

**CERTIFICATE OF SERVICE**

I hereby certify that I this day served the foregoing document upon each person designated on the official service list compiled by the Secretary in this proceeding.

Dated at Norristown, PA this 19<sup>th</sup> day of May 2014.

/s/ Steven R. Pincus

Steven R. Pincus  
Assistant General Counsel

# Attachment A

Revisions to Section(s) of the  
PJM Open Access Transmission Tariff

(Marked / Redline Format)

### **13.8 Scheduling of Firm Point-To-Point Transmission Service:**

Schedules for the Transmission Customer's Firm Point-To-Point Transmission Service must be submitted to the Transmission Provider no later than 10:00 a.m. (eastern) of the day prior to commencement of such service. Schedules submitted after 10:00 a.m. (eastern) will be accommodated, if practicable. Hour-to-hour and intra-hour (four intervals consisting of fifteen minute schedules) schedules of any capacity and energy that is to be delivered must be stated in increments of 1,000 kW per hour. Transmission Customers within the PJM Region with multiple requests for Transmission Service at a Point of Receipt, each of which is under 1,000 kW per hour, may consolidate their service requests at a common point of receipt into units of 1,000 kW per hour for scheduling and billing purposes. Scheduling changes will be permitted up to twenty (20) minutes before the start of the next scheduling interval ~~clock-hour~~ provided that the Delivering Party and Receiving Party also agree to the schedule modification. The Transmission Provider will furnish to the Delivering Party's system operator, hour-to-hour schedules equal to those furnished by the Receiving Party and shall deliver the capacity and energy provided by such schedules. Should the Transmission Customer, Delivering Party or Receiving Party revise or terminate any schedule, such party shall immediately notify the Transmission Provider, and the Transmission Provider shall have the right to adjust accordingly the schedule for capacity and energy to be received and to be delivered.

#### **14.6 Scheduling of Non-Firm Point-To-Point Transmission Service:**

Schedules for Non-Firm Point-To-Point Transmission Service must be submitted to the Transmission Provider no later than 2:00 p.m. (eastern) of the day prior to the commencement of such service. Schedules submitted after 2:00 p.m. (eastern) will be accommodated, if practicable. Hour-to-hour and intra-hour (four intervals consisting of fifteen minute schedules) schedules of energy that is to be delivered must be stated in increments of 1,000 kW per hour. Transmission Customers within the PJM Region with multiple requests for Transmission Service at a Point of Receipt, each of which is under 1,000 kW per hour, may consolidate their schedules at a common Point of Receipt into units of 1,000 kW per hour. Scheduling changes will be permitted up to twenty (20) minutes before the start of the next scheduling interval~~lock hour~~ provided that the Delivering Party and Receiving Party also agree to the schedule modification. The Transmission Provider will furnish to the Delivering Party's system operator, hour-to-hour schedules equal to those furnished by the Receiving Party and shall deliver the capacity and energy provided by such schedules. Should the Transmission Customer, Delivering Party or Receiving Party revise or terminate any schedule, such party shall immediately notify the Transmission Provider, and the Transmission Provider shall have the right to adjust accordingly the schedule for capacity and energy to be received and to be delivered.

**SCHEDULE H**  
**INTERCONNECTION REQUIREMENTS FOR A**  
**WIND GENERATION FACILITY**

{ Include the appropriate language from the alternatives below }

{ Include the following language if the Customer Facility is not a wind generation facility }

Not Required

[OR]

{ Include the following language when the Customer Facility is a wind generation facility }

Schedule H sets forth requirements and provisions specific to the interconnection of a wind generation facility that is greater than 20 MW. All other requirements pertaining to the interconnection of generation facilities above 20 MW set forth in Appendix 2 of this ISA and Part IV of the Tariff continue to apply to wind generation facility interconnections.

**A. Technical Standards Applicable to a Wind Generation Facility**

**i. Low Voltage Ride-Through (LVRT) Capability**

A wind generation facility 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 Schedule H 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 generation facilities subject to Commission Order No. 661 that have either: (i) Interconnection Service 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 generation turbines subject to a wind turbine procurement contract executed prior to December 31, 2005, for delivery through 2007.

1. Wind generation facilities 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 generation facility substation location, as determined by and documented by the transmission provider. The maximum

clearing time the wind generation facility 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 generation facility 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 generation facility 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 generation facilities may be tripped after the fault period if this action is intended as part of a special protection system.

4. Wind generation facilities 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 generation facility 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 initial effective date of the Schedule H LVRT standard are exempt from meeting the Schedule H LVRT standard for the remaining life of the existing generation equipment. Existing individual generator units that are replaced are required to meet the Schedule H LVRT standard.

### **Post-transition Period LVRT Standard**

All wind generation facilities subject to Commission Order No. 661 and not covered by the transition period described above must meet the following requirements:

1. Wind generation facilities 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 pre-fault 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 generation facility substation location, as determined by and documented by the transmission provider. The maximum clearing time the wind generation facility 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 generation facility may disconnect from the transmission system. A wind generation facility 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 generation facilities may be tripped after the fault period if this action is intended as part of a special protection system.

4. Wind generation facilities 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 generation facility 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 initial effective date of the Schedule H LVRT standard are exempt from meeting the Schedule H LVRT Standard for the remaining life of the existing generation equipment. Existing individual generator units that are replaced are required to meet the Schedule H LVRT Standard.

**ii. Power Factor Design Criteria (Reactive Power)**

The power factor requirements for wind generation facilities set forth in section 4.7 of Appendix 2 to Attachment O of the Tariff can be met by using, for example, power electronic devices 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 generation facility is in operation. Wind generation facilities 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 generation facility shall provide SCADA capability to transmit data and receive instructions from the Transmission Provider to protect system reliability. The Transmission Provider and the wind generation facility Interconnection Customer shall determine what SCADA information is essential for the proposed wind generation facility, taking into account the size of the facility and its characteristics, location, and importance in maintaining generation resource adequacy and transmission system reliability in its area.

**iv. Meteorological Data Reporting Requirement**

~~Subject to specific requirements in Manual 14D, the~~ wind generation facility shall, at a minimum, be required to provide the Transmission Provider with site-specific meteorological data including: ~~temperature, wind speed, wind direction, and atmospheric pressure.~~

- Temperature (degrees Fahrenheit)
- Wind speed (meters/second)
- Wind direction (degrees from True North)
- Atmospheric pressure (hectopascals)

- Forced outage data (wind turbine and MW unavailability)

The Transmission Provider and Interconnection Customer may mutually agree to any additional meteorological data that are required for the development and deployment of a power production forecast. All requirements for meteorological and forced outage data must be commensurate with the power production forecasting employed by the Transmission Provider. Such additional mutually agreed upon requirements for meteorological and forced outage data are set forth below:

[SPECIFICY AGREED UPON METEOROLOGICAL AND FORCED OUTAGE DATA REQUIREMENTS]

OR

[NOT APPLICABLE FOR THIS ISA]

**ATTACHMENT O-1**

**FORM OF  
INTERIM INTERCONNECTION SERVICE AGREEMENT**

**By and Among  
PJM Interconnection, L.L.C.  
and**

\_\_\_\_\_  
**and**  
\_\_\_\_\_

**(PJM Queue Position #\_\_\_\_)**

- 1.0 This Interim Interconnection Service Agreement (“Interim ISA”), including the Specifications attached hereto and incorporated herein, is entered into by and among PJM Interconnection, L.L.C. (“Transmission Provider” or “PJM”), [\_\_\_\_\_] (“Interconnection Customer” [OPTIONAL: or [“short name”]]), and [\_\_\_\_\_] (“Interconnected Transmission Owner” [OPTIONAL: or [“short name”]]). [Use as/when applicable: This Interim ISA supersedes the \_\_\_\_\_ {insert details to identify the agreement being superseded, such as whether it is an Interim Interconnection Service Agreement, Interconnection Service Agreement, or Interconnection Agreement, the effective date of the agreement, the service agreement number designation, and the FERC docket number, if applicable, for the agreement being superseded.}]]
- 2.0 Attached are Specifications for the Customer Facility that Interconnection Customer proposes to interconnect to the Transmission Provider’s Transmission System. Interconnection Customer represents and warrants that, upon completion of their construction, it will own or control the facilities identified in the Specifications attached hereto and made a part hereof. In the event that Interconnection Customer will not own the facilities, Interconnection Customer represents and warrants that it is authorized by the owners of such facilities to enter into this Interim ISA and to represent such control.
- 3.0 In order to advance the completion of its interconnection under the PJM Open Access Transmission Tariff (“Tariff”), Interconnection Customer has requested an Interim ISA and Transmission Provider has determined that Interconnection Customer is eligible under the Tariff to obtain this Interim ISA.
- 4.0 (a) In accord with Section 211 of the Tariff, Interconnection Customer, on or before the effective date of this Interim ISA, shall provide Transmission Provider (for the benefit of the Interconnected Transmission Owner) with a letter of credit from an agreed provider or other form of security reasonably acceptable to Transmission Provider in the amount of \$ \_\_\_\_\_, which amount equals the estimated costs, determined in

accordance with Section 217 of the Tariff, of acquiring, designing, constructing and/or installing the facilities described in section 3.0 of the Attached Specifications. Should Interconnection Customer fail to provide such security in the amount or form required, this Interim ISA shall be terminated. Interconnection Customer acknowledges (1) that it will be responsible for the actual costs of the facilities described in the Specifications, whether greater or lesser than the amount of the payment security provided under this section, and (2) that the payment security under this section does not include any additional amounts that it will owe in the event that it executes a final Interconnection Service Agreement, as described in section 7.0(a) below.

(b) Interconnection Customer acknowledges (1) that the purpose of this Interim ISA is to expedite, at Interconnection Customer's request, the acquisition, design, construction and/or installation of certain materials and equipment, as described in the Specifications, necessary to interconnect its proposed facilities with Transmission Provider's Transmission System; and (2) that Transmission Provider's Interconnection Studies related to such facilities have not been completed, but that the [identify completed feasibility and/or system impact study(ies)], dated [\_\_\_\_\_], that included Interconnection Customer's project sufficiently demonstrated, in Interconnection Customer's sole opinion, the necessity of facilities additions to the Transmission System to accommodate Interconnection Customer's project to warrant, in Interconnection Customer's sole judgment, its request that the Interconnected Transmission Owner acquire, design, construct and/or install the equipment indicated in the Specifications for use in interconnecting Interconnection Customer's project with the Transmission System.

5.0 This Interim ISA shall be effective on the date it is executed by all Interconnection Parties and shall terminate upon the execution and delivery by Interconnection Customer and Transmission Provider of the final Interconnection Service Agreement described in section 7.0(a) below, or on such other date as mutually agreed upon by the parties, unless earlier terminated in accordance with the Tariff.

6.0 In addition to the milestones stated in Section 212.5 of the Tariff, during the term of this Interim ISA, Interconnection Customer shall ensure that its generation project meets each of the following development milestones:

[ SPECIFY MILESTONES ]

OR

[ NOT APPLICABLE FOR THIS INTERIM ISA ]

OR

[ MILESTONE REQUIREMENTS WILL BE SPECIFIED IN THE FURTHER INTERCONNECTION SERVICE AGREEMENT DESCRIBED IN SECTION 7.0(a) ]

7.0 (a) Transmission Provider and the Interconnected Transmission Owner agree to provide for the acquisition, design, construction and/or installation of the facilities identified, and to the extent described, in Section 3.0 of the Specifications in accordance with Part IV of the Tariff, as amended from time to time, and this Interim ISA. Except to the extent for which the Specifications provide for interim interconnection rights for the Interconnection Customer, the parties agree that (1) this Interim ISA shall not provide for or authorize Interconnection Service for the Interconnection Customer, and (2) Interconnection Service will commence only after Interconnection Customer has entered into a final Interconnection Service Agreement with Transmission Provider and the Interconnection Transmission Owner (or, alternatively, has exercised its right to initiate dispute resolution or to have the final Interconnection Service Agreement filed with the FERC unexecuted) after completion of the Facilities Study related to Interconnection Customer's Interconnection Request and otherwise in accordance with the Tariff. The final Interconnection Service Agreement may further provide for construction of, and payment for, transmission facilities additional to those identified in the attached Specifications. Should Interconnection Customer fail to enter into such final Interconnection Service Agreement (or, alternatively, to initiate dispute resolution or request that the agreement be filed with the FERC unexecuted) within the time prescribed by the Tariff, Transmission Provider shall have the right, upon providing written notice to Interconnection Customer, to terminate this Interim ISA.

(b) In the event that Interconnection Customer decides not to interconnect its proposed facilities, as described in Section 1.0 of the Specifications to the Transmission System, it shall immediately give Transmission Provider written notice of its determination. Interconnection Customer shall be responsible for the Costs incurred pursuant to this Interim ISA by Transmission Provider and/or by the Interconnected Transmission Owner (1) on or before the date of such notice, and (2) after the date of such notice, if the costs could not reasonably be avoided despite, or were incurred by reason of, Interconnection Customer's determination not to interconnect. Interconnection Customer's liability under the preceding sentence shall include all Cancellation Costs in connection with the acquisition, design, construction and/or installation of the facilities described in section 3.0 of the Specifications. In the event the Interconnected Transmission Owner incurs Cancellation Costs, it shall provide the Transmission Provider, with a copy to the Interconnection Customer, with a written demand for payment and with reasonable documentation of such Cancellation Costs. Within 60 days after the date of Interconnection Customer's notice, Transmission Provider shall provide an accounting of, and the appropriate party shall make any payment to the other that is necessary to resolve, any difference between (i) Interconnection Customer's cost responsibility under this Interim ISA and the Tariff for Costs, including Cancellation Costs, of the facilities described in section 3.0 of the Specifications and (ii) Interconnection Customer's previous payments under this Interim ISA. Notwithstanding the foregoing, however, Transmission Provider shall not be obligated to make any payment that the preceding sentence requires it to make unless and until the Interconnected Transmission Owner has returned to it the portion of Interconnection Customer's previous payments that Transmission Provider must pay under that sentence.

This Interim ISA shall be deemed to be terminated upon completion of all payments required under this paragraph (b).

(c) Disposition of the facilities related to this Interim ISA after receipt of Interconnection Customer's notice of its determination not to interconnect shall be decided in accordance with Section 211.1 of the Tariff.

- 8.0 Interconnection Customer agrees to abide by all rules and procedures pertaining to generation in the PJM Region, including but not limited to the rules and procedures concerning the dispatch of generation set forth in the Operating Agreement and the PJM Manuals.
- 9.0 In analyzing and preparing the Facilities Study or the System Impact Study if no Facilities Study is required, and in designing and constructing the Attachment Facilities, Local Upgrades and/or Network Upgrades described in the Specifications attached to this Interim ISA, Transmission Provider, the Interconnected Transmission Owner(s), and any other subcontractors employed by Transmission Provider have had to, and shall have to, rely on information provided by Interconnection Customer and possibly by third parties and may not have control over the accuracy of such information. Accordingly, NEITHER TRANSMISSION PROVIDER, THE INTERCONNECTED TRANSMISSION OWNER(S), NOR ANY OTHER SUBCONTRACTORS EMPLOYED BY TRANSMISSION PROVIDER OR INTERCONNECTED TRANSMISSION OWNER MAKES ANY WARRANTIES, EXPRESS OR IMPLIED, WHETHER ARISING BY OPERATION OF LAW, COURSE OF PERFORMANCE OR DEALING, CUSTOM, USAGE IN THE TRADE OR PROFESSION, OR OTHERWISE, INCLUDING WITHOUT LIMITATION IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, WITH REGARD TO THE ACCURACY, CONTENT, OR CONCLUSIONS OF THE FACILITIES STUDY OR THE SYSTEM IMPACT STUDY IF NO FACILITIES STUDY IS REQUIRED OR OF THE ATTACHMENT FACILITIES, LOCAL UPGRADES AND/OR NETWORK UPGRADES, PROVIDED, HOWEVER, that Transmission Provider warrants that the transmission facilities described in Section 3.0 of the Specifications will be designed, constructed and operated in accordance with Good Utility Practice, as such term is defined in the Operating Agreement. Interconnection Customer acknowledges that it has not relied on any representations or warranties not specifically set forth herein and that no such representations or warranties have formed the basis of its bargain hereunder.
- 10.0 Within 120 days after the Interconnected Transmission Owner completes acquisition, design, construction and/or installation of the facilities described in Section 3.0 of the Specifications, Transmission Provider shall provide Interconnection Customer with an accounting of, and the appropriate party shall make any payment to the other that is necessary to resolve, any difference between (a) Interconnection Customer's responsibility under this Interim ISA and the Tariff for the actual cost of such equipment, and (b) Interconnection Customer's previous aggregate payments to Transmission Provider and the Interconnected Transmission Owner hereunder. Notwithstanding the

foregoing, however, Transmission Provider shall not be obligated to make any payment that the preceding sentence requires it to make unless and until the Interconnected Transmission Owner has returned to it the portion of Interconnection Customer's previous payments that Transmission Provider must pay under that sentence.

- 11.0 No third party beneficiary rights are created under this Interim ISA, provided, however, that payment obligations imposed on Interconnection Customer hereunder are agreed and acknowledged to be for the benefit of the Interconnected Transmission Owner actually performing the services associated with the interconnection of the generating facilities and any associated upgrades of other facilities.
- 12.0 No waiver by either party of one or more defaults by the other in performance of any of the provisions of this Interim ISA shall operate or be construed as a waiver of any other or further default or defaults, whether of a like or different character.
- 13.0 This Interim ISA or any part thereof, may not be amended, modified, assigned, or waived other than by a writing signed by all parties hereto.
- 14.0 This Interim ISA shall be binding upon the parties hereto, their heirs, executors, administrators, successors, and assigns.
- 15.0 This Interim ISA shall not be construed as an application for service under Part II or Part III of the Tariff.
- 16.0 Any notice or request made to or by either Party regarding this Interim ISA shall be made to the representative of the other Party as indicated below.

**Transmission Provider**

PJM Interconnection, L.L.C.  
955 Jefferson Avenue  
Valley Forge Corporate Center  
Norristown, PA 19403-2497

**Interconnection Customer**

[ CONTACT NAME/ADDRESS ]

**Interconnected Transmission Owner**

[ CONTACT NAME/ADDRESS ]

- 17.0 All portions of the Tariff and the Operating Agreement pertinent to the subject of this Interim ISA are incorporated herein and made a part hereof.
- 18.0 This Interim ISA is entered into pursuant to Part IV of the Tariff.

19.0 Neither party shall be liable for consequential, incidental, special, punitive, exemplary or indirect damages, lost profits or other business interruption damages, by statute, in tort or contract, under any indemnity provision or otherwise with respect to any claim, controversy or dispute arising under this Interim ISA.

20.0 Addendum of Interconnection Customer's Agreement to Conform with IRS Safe Harbor Provisions for Non-Taxable Status. To the extent required, in accordance with Section 20.1, Schedule A to this Interim ISA shall set forth the Interconnection Customer's agreement to conform with the IRS safe harbor provisions for non-taxable status.

## 20.1 Tax Liability

### 20.1.1 Safe Harbor Provisions:

This Section 20.1.1 is applicable only to Generation Interconnection Customers. Provided that Interconnection Customer agrees to conform to all requirements of the Internal Revenue Service ("IRS") (e.g., the "safe harbor" provisions of IRS Notices 2001-82 and 88-129) that would confer nontaxable status on some or all of the transfer of property, including money, by Interconnection Customer to the Interconnected Transmission Owner for payment of the Costs of construction of the Transmission Owner Interconnection Facilities, the Interconnected Transmission Owner, based on such agreement and on current law, shall treat such transfer of property to it as nontaxable income and, except as provided in Section 20.1.2 below, shall not include income taxes in the Costs of Transmission Owner Interconnection Facilities that are payable by Interconnection Customer under the Interim Interconnection Service Agreement, the Interconnection Service Agreement or the Interconnection Construction Service Agreement. Interconnection Customer shall document its agreement to conform to IRS requirements for such non-taxable status in the Interconnection Service Agreement, the Interconnection Construction Service Agreement, and/or the Interim Interconnection Service Agreement.

### 20.1.2 Tax Indemnity:

Interconnection Customer shall indemnify the Interconnected Transmission Owner for any costs that Interconnected Transmission Owner incurs in the event that the IRS and/or a state department of revenue (State) determines that the property, including money, transferred by Interconnection Customer to the Interconnected Transmission Owner with respect to the construction of the Transmission Owner Interconnection Facilities and/or any Merchant Network Upgrades is taxable income to the Interconnected Transmission Owner. Interconnection Customer shall pay to the Interconnected Transmission Owner, on demand, the amount of any income taxes that the IRS or a State assesses to the Interconnected Transmission Owner in connection with such transfer of property and/or money, plus any applicable interest and/or penalty charged to the Interconnected Transmission Owner. In the event that the Interconnected Transmission Owner chooses to contest such assessment, either at the request of Interconnection Customer or on its

own behalf, and prevails in reducing or eliminating the tax, interest and/or penalty assessed against it, the Interconnected Transmission Owner shall refund to Interconnection Customer the excess of its demand payment made to the Interconnected Transmission Owner over the amount of the tax, interest and penalty for which the Interconnected Transmission Owner is finally determined to be liable. Interconnection Customer's tax indemnification obligation under this section shall survive any termination of the Interim Interconnection Service Agreement or Interconnection Construction Service Agreement.

#### 20.1.3 Taxes Other Than Income Taxes:

Upon the timely request by Interconnection Customer, and at Interconnection Customer's sole expense, the Interconnected Transmission Owner shall appeal, protest, seek abatement of, or otherwise contest any tax (other than federal or state income tax) asserted or assessed against the Interconnected Transmission Owner for which Interconnection Customer may be required to reimburse Transmission Provider under the terms of this Interim Interconnection Service Agreement or Part VI of the Tariff. Interconnection Customer shall pay to the Interconnected Transmission Owner on a periodic basis, as invoiced by the Interconnected Transmission Owner, the Interconnected Transmission Owner's documented reasonable costs of prosecuting such appeal, protest, abatement, or other contest. Interconnection Customer and the Interconnected Transmission Owner shall cooperate in good faith with respect to any such contest. Unless the payment of such taxes is a prerequisite to an appeal or abatement or cannot be deferred, no amount shall be payable by Interconnection Customer to the Interconnected Transmission Owner for such contested taxes until they are assessed by a final, non-appealable order by any court or agency of competent jurisdiction. In the event that a tax payment is withheld and ultimately due and payable after appeal, Interconnection Customer will be responsible for all taxes, interest and penalties, other than penalties attributable to any delay caused by the Interconnected Transmission Owner.

#### 20.1.4 Income Tax Gross-Up

##### 20.1.4.1 Additional Security:

In the event that Interconnection Customer does not provide the safe harbor documentation required under Section 20.1.1 prior to execution of this Interim Interconnection Service Agreement, within 15 days after such execution, Transmission Provider shall notify Interconnection Customer in writing of the amount of additional Security that Interconnection Customer must provide. The amount of Security that a Transmission Interconnection Customer must provide initially pursuant to this Interim Interconnection Service Agreement shall include any amounts described as additional Security under this Section 20.1.4 regarding income tax gross-up.

##### 20.1.4.2 Amount:

The required additional Security shall be in an amount equal to the amount necessary to gross up fully for currently applicable federal and state income taxes the estimated Costs of

Local Upgrades and Network Upgrades for which Interconnection Customer previously provided Security. Accordingly, the additional Security shall equal the amount necessary to increase the total Security provided to the amount that would be sufficient to permit the Interconnected Transmission Owner to receive and retain, after the payment of all applicable income taxes (“Current Taxes”) and taking into account the present value of future tax deductions for depreciation that would be available as a result of the anticipated payments or property transfers (the "Present Value Depreciation Amount"), an amount equal to the estimated Costs of Local Upgrades and Network Upgrades for which Interconnection Customer is responsible under the Interconnection Service Agreement. For this purpose, Current Taxes shall be computed based on the composite federal and state income tax rates applicable to the Interconnected Transmission Owner at the time the additional Security is received, determined using the highest marginal rates in effect at that time (the "Current Tax Rate"), and (ii) the Present Value Depreciation Amount shall be computed by discounting the Interconnected Transmission Owner’s anticipated tax depreciation deductions associated with such payments or property transfers by its current weighted average cost of capital.

#### 20.1.4.3 Time for Payment:

Interconnection Customer must provide the additional Security, in a form and with terms as required by Sections 212.4 of the Tariff, within 15 days after its receipt of Transmission Provider’s notice under this section. The requirement for additional Security under this section shall be treated as a milestone included in the Interconnection Service Agreement pursuant to Section 212.5 of the Tariff.

#### 20.1.5 Tax Status:

Each Party shall cooperate with the other to maintain the other Party’s tax status. Nothing in this Interim Interconnection Service Agreement or the Tariff is intended to adversely affect any Interconnected Transmission Owner’s tax exempt status with respect to the issuance of bonds including, but not limited to, local furnishing bonds.

21.0 Addendum of Interconnection Requirement for a Wind Generation Facility. To the extent required, Schedule B to this Interim ISA sets forth interconnection requirements for a wind generation facility and is hereby incorporated by reference and made a part of this Interim ISA.

22.0 Infrastructure security of electric system equipment and operations and control hardware and software is essential to ensure day-to-day reliability and operational security. All Transmission Providers, Interconnected Transmission Owners, market participants, and Interconnection Customers interconnected with electric systems are to comply with the recommendations offered by the President's Critical Infrastructure Protection Board and best practice recommendations from the electric reliability authority. All public utilities are expected to meet basic standards for electric system infrastructure and operational security, including physical, operational, and cyber-security practices.

IN WITNESS WHEREOF, Transmission Provider, Interconnection Customer and Interconnected Transmission Owner have caused this Interim ISA to be executed by their respective authorized officials.

(PJM Queue Position #\_\_\_)

Transmission Provider: PJM Interconnection, L.L.C.

By: \_\_\_\_\_  
Name Title Date

Printed name of signer: \_\_\_\_\_

Interconnection Customer: [Name of Party]

By: \_\_\_\_\_  
Name Title Date

Printed name of signer: \_\_\_\_\_

Interconnected Transmission Owner: [Name of Party]

By: \_\_\_\_\_  
Name Title Date

Printed name of signer: \_\_\_\_\_

**SPECIFICATIONS FOR  
INTERIM INTERCONNECTION SERVICE AGREEMENT**

**By and Among  
PJM INTERCONNECTION, L.L.C.**

**And**

\_\_\_\_\_  
**And**  
\_\_\_\_\_

**(PJM Queue Position #\_\_\_)**

1.0 Description of Customer Facility to be interconnected with the Transmission System in the PJM Region:

a. Name of Customer Facility:

\_\_\_\_\_  
\_\_\_\_\_

b. Location of Customer Facility:

\_\_\_\_\_  
\_\_\_\_\_

c. Size in megawatts of Customer Facility:

{The following language should be included only for generating units

For Generation Interconnection Customer:

Maximum Facility Output of \_\_\_\_\_MW }

{The following language applies when a Generation Interconnection Request involves an increase of the capacity of an existing generating facility: The stated size of the generating unit includes an increase in the Maximum Facility Output of the generating unit of \_\_ MW over Interconnection Customer's previous interconnection. This increase is a result of the Interconnection Request associated with this Interim Interconnection Service Agreement. }

{The following language should be included only for Merchant Transmission Facilities for Transmission Interconnection Customer:

Nominal Rated Capability: \_\_\_\_\_MW }

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2.0 Interconnection Rights: Interconnection Customer shall obtain Capacity Interconnection Rights in accordance with Subpart C of Part VI of the Tariff at the location specified in section 1.0b upon its execution of the final Interconnection Service Agreement described in section 7.0(a) of this Interim ISA. **[if applicable, add: , provided, however, that pending execution of the final Interconnection Service Agreement, Interconnection Customer shall be entitled to the following interim rights:**

Pursuant to and subject to the applicable terms of the Tariff, Interconnection Customer shall have Capacity Interconnection Rights as a Capacity Resource at the Point of Interconnection specified in this Interim ISA in the amount of \_\_ MW, for the time period of \_\_\_\_\_ to \_\_\_\_\_. To the extent that the Customer Facility described in section 1.0 is not a Capacity Resource with Capacity Interconnection Rights, such Customer Facility shall be an Energy Resource. Pursuant to this Interim ISA, the Customer Facility will be permitted to inject \_\_ MW (nominal) into the system. PJM reserves the right to limit injections to this quantity in the event reliability would be affected by output greater than such quantity.]

3.0.A Facilities to be acquired, designed, constructed and/or installed by the Interconnected Transmission Owner under this Interim ISA:

3.0.B Facilities to be acquired, designed, constructed and/or installed by the Interconnection Customer under this Interim ISA:

4.0 Interconnection Customer shall be subject to the charges detailed below:

4.1 Attachment Facilities Charge:

4.2 Local Upgrades Charge:

4.3 Network Upgrades Charge:

4.4 Cost Breakdown:

\$	Direct Labor
\$	Direct Material
\$	Indirect Labor
\$	Indirect Material
\$	Total

SCHEDULES: {Note: Schedules A and B are required, others are optional; add if applicable and desirable for clarity.}

SCHEDULE A – INTERCONNECTION CUSTOMER’S AGREEMENT TO CONFORM WITH IRS SAFE HARBOR PROVISIONS FOR NON-TAXABLE STATUS

SCHEDULE B - INTERCONNECTION REQUIREMENTS FOR A WIND GENERATION FACILITY

SCHEDULE \_\_\_ - CUSTOMER FACILITY LOCATION/SITE PLAN

SCHEDULE \_\_\_ - SINGLE-LINE DIAGRAM

## SCHEDULE A

### INTERCONNECTION CUSTOMER'S AGREEMENT TO CONFORM WITH IRS SAFE HARBOR PROVISIONS FOR NON-TAXABLE STATUS

{Include the appropriate language from the alternatives below: }

{Include the following language if not required:}  
Not Required.

[OR]

{Include the following language if applicable to Interconnection Customer: }

As provided in Section 20.1 of this Interim ISA and subject to the requirements thereof, Interconnection Customer represents that it meets all qualifications and requirements as set forth in Section 118(a) and 118(b) of the Internal Revenue Code of 1986, as amended and interpreted by Notice 88-129, 1988-2 C.B. 541, and as amplified and modified in Notices 90-60, 1990-2 C.B. 345, and 2001-82, 2001-2 C.B. 619 (the "IRS Notices"). Interconnection Customer agrees to conform with all requirements of the safe harbor provisions specified in the IRS Notices, as they may be amended, as required to confer non-taxable status on some or all of the transfer of property, including money, by Interconnection Customer to Interconnected Transmission Owner with respect to the payment of the Costs of construction and installation of the Transmission Owner Interconnection Facilities and/or Merchant Network Upgrades specified in this Interim ISA.

Nothing in Interconnection Customer's agreement pursuant to this Schedule A shall change Interconnection Customer's indemnification obligations under Section 20.1 of this Interim ISA.

**SCHEDULE B**  
**INTERCONNECTION REQUIREMENTS FOR A**  
**WIND GENERATION FACILITY**

{Include the appropriate language from the alternatives below }

{Include the following language if the Customer Facility is not a wind generation facility }

Not Required

[OR]

{Include the following language when the Customer Facility is a wind generation facility }

Schedule B sets forth requirements and provisions specific to the interconnection of a wind generation facility that is greater than 20 MW. All other requirements pertaining to the interconnection of generation facilities above 20 MW set forth in Part IV of the Tariff continue to apply to wind generation facility interconnections.

**A. Technical Standards Applicable to a Wind Generation Facility**

**i. Low Voltage Ride-Through (LVRT) Capability**

A wind generation facility 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 Schedule B 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 generation facilities subject to Commission Order No. 661 that have either: (i) Interconnection Service 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 generation turbines subject to a wind turbine procurement contract executed prior to December 31, 2005, for delivery through 2007.

1. Wind generation facilities 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 generation facility substation location, as determined by and documented by the transmission provider. The maximum

clearing time the wind generation facility 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 generation facility 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 generation facility 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 generation facilities may be tripped after the fault period if this action is intended as part of a special protection system.

4. Wind generation facilities 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 generation facility 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 initial effective date of the Schedule B LVRT standard are exempt from meeting the Schedule B LVRT standard for the remaining life of the existing generation equipment. Existing individual generator units that are replaced are required to meet the Schedule B LVRT standard.

### **Post-transition Period LVRT Standard**

All wind generation facilities subject to Commission Order No. 661 and not covered by the transition period described above must meet the following requirements:

1. Wind generation facilities 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 generation facility substation location, as determined by and documented by the transmission provider. The maximum clearing time the wind generation facility 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 generation facility may disconnect from the transmission system. A wind generation facility 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 generation facilities may be tripped after the fault period if this action is intended as part of a special protection system.

4. Wind generation facilities 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 generation facility 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 initial effective date of the Schedule B LVRT standard are exempt from meeting the Schedule B LVRT Standard for the remaining life of the existing generation equipment. Existing individual generator units that are replaced are required to meet the Schedule B LVRT Standard.

**ii. Power Factor Design Criteria (Reactive Power)**

The power factor requirements for wind generation facilities set forth in section 4.7.1 of Appendix 2 to Attachment O of the Tariff can be met by using, for example, power electronic devices 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 generation facility is in operation. Wind generation facilities 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 generation facility shall provide SCADA capability to transmit data and receive instructions from the Transmission Provider to protect system reliability. The Transmission Provider and the wind generation facility Interconnection Customer shall determine what SCADA information is essential for the proposed wind generation facility, taking into account the size of the facility and its characteristics, location, and importance in maintaining generation resource adequacy and transmission system reliability in its area.

**iv. Meteorological Data Reporting Requirement**

The wind generation facility shall, at a minimum, be required to provide the Transmission Provider with site-specific meteorological data including:

- Temperature (degrees Fahrenheit)
- Wind speed (meters/second)
- Wind direction (degrees from True North)
- Atmospheric pressure (hectopascals)
- Forced outage data (wind turbine and MW unavailability)

The Transmission Provider and Interconnection Customer may mutually agree to any additional meteorological data that are required for the development and deployment of a power production forecast. All requirements for meteorological and forced outage data must be commensurate with the power production forecasting employed by the Transmission Provider. Such additional mutually agreed upon requirements for meteorological and forced outage data are set forth below:

[SPECIFICY AGREED UPON METEOROLOGICAL AND FORCED OUTAGE DATA REQUIREMENTS]

OR

[NOT APPLICABLE FOR THIS INTERIM ISA]

**SCHEDULE N**  
**INTERCONNECTION REQUIREMENTS FOR A**  
**WIND GENERATION FACILITY**

{ Include the appropriate language from the alternatives below }

{ Include the following language if the Customer Facility is not a wind generation facility }

Not Required

[OR]

{ Include the following language when the Customer Facility is a wind generation facility }

Schedule N sets forth requirements and provisions specific to the interconnection of a wind generation facility that is greater than 20 MW. All other requirements pertaining to the interconnection of generation facilities above 20 MW set forth in Part IV of the Tariff continue to apply to wind generation facility interconnections.

**A. Technical Standards Applicable to a Wind Generation Facility**

**i. Low Voltage Ride-Through (LVRT) Capability**

A wind generation facility 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 Schedule N 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 generation facilities subject to Commission Order No. 661 that have either: (i) Interconnection Service 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 generation turbines subject to a wind turbine procurement contract executed prior to December 31, 2005, for delivery through 2007.

1. Wind generation facilities 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 generation facility substation location, as determined by and documented by the transmission provider. The maximum clearing time the wind generation facility 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 generation facility 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 generation facility 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 generation facilities may be tripped after the fault period if this action is intended as part of a special protection system.

4. Wind generation facilities 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 generation facility 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 initial effective date of the Schedule N LVRT standard are exempt from meeting the Schedule N LVRT standard for the remaining life of the existing generation equipment. Existing individual generator units that are replaced are required to meet the Schedule N LVRT standard.

### **Post-transition Period LVRT Standard**

All wind generation facilities subject to Commission Order No. 661 and not covered by the transition period described above must meet the following requirements:

1. Wind generation facilities 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 pre-fault 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 generation facility substation location, as determined by and documented by the transmission provider. The maximum clearing time the wind generation facility 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 generation facility may disconnect from the transmission system. A wind generation facility 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 generation facilities may be tripped after the fault period if this action is intended as part of a special protection system.

4. Wind generation facilities 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 generation facility 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 initial effective date of the Schedule N LVRT standard are exempt from meeting the Schedule N LVRT Standard for the remaining life of the existing generation equipment. Existing individual generator units that are replaced are required to meet the Schedule N LVRT Standard.

**ii. Power Factor Design Criteria (Reactive Power)**

The power factor requirements for wind generation facilities set forth in section 4.7 of Appendix 2 to Attachment O of the Tariff can be met by using, for example, power electronic devices 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 generation facility is in operation. Wind generation facilities 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 generation facility shall provide SCADA capability to transmit data and receive instructions from the Transmission Provider to protect system reliability. The Transmission Provider and the wind generation facility Interconnection Customer shall determine what SCADA information is essential for the proposed wind generation facility, taking into account the size of the facility and its characteristics, location, and importance in maintaining generation resource adequacy and transmission system reliability in its area.

**iv. Meteorological Data Reporting Requirement**

The wind generation facility shall, at a minimum, be required to provide the Transmission Provider with site-specific meteorological data including:

- Temperature (degrees Fahrenheit)
- Wind speed (meters/second)
- Wind direction (degrees from True North)
- Atmospheric pressure (hectopascals)
- Forced outage data (wind turbine and MW unavailability)

The Transmission Provider and Interconnection Customer may mutually agree to any additional meteorological data that are required for the development and deployment of a power production forecast. All requirements for meteorological and forced outage data must be commensurate with the power production forecasting employed by the Transmission Provider. Such additional mutually agreed upon requirements for meteorological and forced outage data are set forth below:

[SPECIFICY AGREED UPON METEOROLOGICAL AND FORCED OUTAGE DATA REQUIREMENTS]

OR

[NOT APPLICABLE FOR THIS CSA]

# Attachment B

Revisions to Section(s) of the  
PJM Open Access Transmission Tariff

(Clean Format)

### **13.8 Scheduling of Firm Point-To-Point Transmission Service:**

Schedules for the Transmission Customer's Firm Point-To-Point Transmission Service must be submitted to the Transmission Provider no later than 10:00 a.m. (eastern) of the day prior to commencement of such service. Schedules submitted after 10:00 a.m. (eastern) will be accommodated, if practicable. Hour-to-hour and intra-hour (four intervals consisting of fifteen minute schedules) schedules of any capacity and energy that is to be delivered must be stated in increments of 1,000 kW per hour. Transmission Customers within the PJM Region with multiple requests for Transmission Service at a Point of Receipt, each of which is under 1,000 kW per hour, may consolidate their service requests at a common point of receipt into units of 1,000 kW per hour for scheduling and billing purposes. Scheduling changes will be permitted up to twenty (20) minutes before the start of the next scheduling interval provided that the Delivering Party and Receiving Party also agree to the schedule modification. The Transmission Provider will furnish to the Delivering Party's system operator, hour-to-hour schedules equal to those furnished by the Receiving Party and shall deliver the capacity and energy provided by such schedules. Should the Transmission Customer, Delivering Party or Receiving Party revise or terminate any schedule, such party shall immediately notify the Transmission Provider, and the Transmission Provider shall have the right to adjust accordingly the schedule for capacity and energy to be received and to be delivered.

#### **14.6 Scheduling of Non-Firm Point-To-Point Transmission Service:**

Schedules for Non-Firm Point-To-Point Transmission Service must be submitted to the Transmission Provider no later than 2:00 p.m. (eastern) of the day prior to the commencement of such service. Schedules submitted after 2:00 p.m. (eastern) will be accommodated, if practicable. Hour-to-hour and intra-hour (four intervals consisting of fifteen minute schedules) schedules of energy that is to be delivered must be stated in increments of 1,000 kW per hour. Transmission Customers within the PJM Region with multiple requests for Transmission Service at a Point of Receipt, each of which is under 1,000 kW per hour, may consolidate their schedules at a common Point of Receipt into units of 1,000 kW per hour. Scheduling changes will be permitted up to twenty (20) minutes before the start of the next scheduling interval provided that the Delivering Party and Receiving Party also agree to the schedule modification. The Transmission Provider will furnish to the Delivering Party's system operator, hour-to-hour schedules equal to those furnished by the Receiving Party and shall deliver the capacity and energy provided by such schedules. Should the Transmission Customer, Delivering Party or Receiving Party revise or terminate any schedule, such party shall immediately notify the Transmission Provider, and the Transmission Provider shall have the right to adjust accordingly the schedule for capacity and energy to be received and to be delivered.

**SCHEDULE H**  
**INTERCONNECTION REQUIREMENTS FOR A**  
**WIND GENERATION FACILITY**

{ Include the appropriate language from the alternatives below }

{ Include the following language if the Customer Facility is not a wind generation facility }

Not Required

[OR]

{ Include the following language when the Customer Facility is a wind generation facility }

Schedule H sets forth requirements and provisions specific to the interconnection of a wind generation facility that is greater than 20 MW. All other requirements pertaining to the interconnection of generation facilities above 20 MW set forth in Appendix 2 of this ISA and Part IV of the Tariff continue to apply to wind generation facility interconnections.

**A. Technical Standards Applicable to a Wind Generation Facility**

**i. Low Voltage Ride-Through (LVRT) Capability**

A wind generation facility 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 Schedule H 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 generation facilities subject to Commission Order No. 661 that have either: (i) Interconnection Service 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 generation turbines subject to a wind turbine procurement contract executed prior to December 31, 2005, for delivery through 2007.

1. Wind generation facilities 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 generation facility substation location, as determined by and documented by the transmission provider. The maximum

clearing time the wind generation facility 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 generation facility 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 generation facility 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 generation facilities may be tripped after the fault period if this action is intended as part of a special protection system.

4. Wind generation facilities 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 generation facility 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 initial effective date of the Schedule H LVRT standard are exempt from meeting the Schedule H LVRT standard for the remaining life of the existing generation equipment. Existing individual generator units that are replaced are required to meet the Schedule H LVRT standard.

### **Post-transition Period LVRT Standard**

All wind generation facilities subject to Commission Order No. 661 and not covered by the transition period described above must meet the following requirements:

1. Wind generation facilities 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 generation facility substation location, as determined by and documented by the transmission provider. The maximum clearing time the wind generation facility 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 generation facility may disconnect from the transmission system. A wind generation facility 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 generation facilities may be tripped after the fault period if this action is intended as part of a special protection system.

4. Wind generation facilities 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 generation facility 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 initial effective date of the Schedule H LVRT standard are exempt from meeting the Schedule H LVRT Standard for the remaining life of the existing generation equipment. Existing individual generator units that are replaced are required to meet the Schedule H LVRT Standard.

**ii. Power Factor Design Criteria (Reactive Power)**

The power factor requirements for wind generation facilities set forth in section 4.7 of Appendix 2 to Attachment O of the Tariff can be met by using, for example, power electronic devices 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 generation facility is in operation. Wind generation facilities 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 generation facility shall provide SCADA capability to transmit data and receive instructions from the Transmission Provider to protect system reliability. The Transmission Provider and the wind generation facility Interconnection Customer shall determine what SCADA information is essential for the proposed wind generation facility, taking into account the size of the facility and its characteristics, location, and importance in maintaining generation resource adequacy and transmission system reliability in its area.

**iv. Meteorological Data Reporting Requirement**

The wind generation facility shall, at a minimum, be required to provide the Transmission Provider with site-specific meteorological data including:

- Temperature (degrees Fahrenheit)
- Wind speed (meters/second)
- Wind direction (degrees from True North)
- Atmospheric pressure (hectopascals)
- Forced outage data (wind turbine and MW unavailability)

The Transmission Provider and Interconnection Customer may mutually agree to any additional meteorological data that are required for the development and deployment of a power production forecast. All requirements for meteorological and forced outage data must be commensurate with the power production forecasting employed by the Transmission Provider. Such additional mutually agreed upon requirements for meteorological and forced outage data are set forth below:

[SPECIFICY AGREED UPON METEOROLOGICAL AND FORCED OUTAGE DATA REQUIREMENTS]

OR

[NOT APPLICABLE FOR THIS ISA]

**ATTACHMENT O-1**

**FORM OF  
INTERIM INTERCONNECTION SERVICE AGREEMENT**

**By and Among  
PJM Interconnection, L.L.C.  
and**

\_\_\_\_\_  
**and**  
\_\_\_\_\_

**(PJM Queue Position #\_\_\_\_)**

- 1.0 This Interim Interconnection Service Agreement (“Interim ISA”), including the Specifications attached hereto and incorporated herein, is entered into by and among PJM Interconnection, L.L.C. (“Transmission Provider” or “PJM”), [\_\_\_\_\_] (“Interconnection Customer” [OPTIONAL: or [“short name”]]), and [\_\_\_\_\_] (“Interconnected Transmission Owner” [OPTIONAL: or [“short name”]]). [Use as/when applicable: This Interim ISA supersedes the \_\_\_\_\_ {insert details to identify the agreement being superseded, such as whether it is an Interim Interconnection Service Agreement, Interconnection Service Agreement, or Interconnection Agreement, the effective date of the agreement, the service agreement number designation, and the FERC docket number, if applicable, for the agreement being superseded.}]]
- 2.0 Attached are Specifications for the Customer Facility that Interconnection Customer proposes to interconnect to the Transmission Provider’s Transmission System. Interconnection Customer represents and warrants that, upon completion of their construction, it will own or control the facilities identified in the Specifications attached hereto and made a part hereof. In the event that Interconnection Customer will not own the facilities, Interconnection Customer represents and warrants that it is authorized by the owners of such facilities to enter into this Interim ISA and to represent such control.
- 3.0 In order to advance the completion of its interconnection under the PJM Open Access Transmission Tariff (“Tariff”), Interconnection Customer has requested an Interim ISA and Transmission Provider has determined that Interconnection Customer is eligible under the Tariff to obtain this Interim ISA.
- 4.0 (a) In accord with Section 211 of the Tariff, Interconnection Customer, on or before the effective date of this Interim ISA, shall provide Transmission Provider (for the benefit of the Interconnected Transmission Owner) with a letter of credit from an agreed provider or other form of security reasonably acceptable to Transmission Provider in the amount of \$ \_\_\_\_\_, which amount equals the estimated costs, determined in

accordance with Section 217 of the Tariff, of acquiring, designing, constructing and/or installing the facilities described in section 3.0 of the Attached Specifications. Should Interconnection Customer fail to provide such security in the amount or form required, this Interim ISA shall be terminated. Interconnection Customer acknowledges (1) that it will be responsible for the actual costs of the facilities described in the Specifications, whether greater or lesser than the amount of the payment security provided under this section, and (2) that the payment security under this section does not include any additional amounts that it will owe in the event that it executes a final Interconnection Service Agreement, as described in section 7.0(a) below.

(b) Interconnection Customer acknowledges (1) that the purpose of this Interim ISA is to expedite, at Interconnection Customer's request, the acquisition, design, construction and/or installation of certain materials and equipment, as described in the Specifications, necessary to interconnect its proposed facilities with Transmission Provider's Transmission System; and (2) that Transmission Provider's Interconnection Studies related to such facilities have not been completed, but that the [identify completed feasibility and/or system impact study(ies)], dated [\_\_\_\_\_], that included Interconnection Customer's project sufficiently demonstrated, in Interconnection Customer's sole opinion, the necessity of facilities additions to the Transmission System to accommodate Interconnection Customer's project to warrant, in Interconnection Customer's sole judgment, its request that the Interconnected Transmission Owner acquire, design, construct and/or install the equipment indicated in the Specifications for use in interconnecting Interconnection Customer's project with the Transmission System.

5.0 This Interim ISA shall be effective on the date it is executed by all Interconnection Parties and shall terminate upon the execution and delivery by Interconnection Customer and Transmission Provider of the final Interconnection Service Agreement described in section 7.0(a) below, or on such other date as mutually agreed upon by the parties, unless earlier terminated in accordance with the Tariff.

6.0 In addition to the milestones stated in Section 212.5 of the Tariff, during the term of this Interim ISA, Interconnection Customer shall ensure that its generation project meets each of the following development milestones:

[ SPECIFY MILESTONES ]

OR

[ NOT APPLICABLE FOR THIS INTERIM ISA ]

OR

[ MILESTONE REQUIREMENTS WILL BE SPECIFIED IN THE FURTHER INTERCONNECTION SERVICE AGREEMENT DESCRIBED IN SECTION 7.0(a) ]

7.0 (a) Transmission Provider and the Interconnected Transmission Owner agree to provide for the acquisition, design, construction and/or installation of the facilities identified, and to the extent described, in Section 3.0 of the Specifications in accordance with Part IV of the Tariff, as amended from time to time, and this Interim ISA. Except to the extent for which the Specifications provide for interim interconnection rights for the Interconnection Customer, the parties agree that (1) this Interim ISA shall not provide for or authorize Interconnection Service for the Interconnection Customer, and (2) Interconnection Service will commence only after Interconnection Customer has entered into a final Interconnection Service Agreement with Transmission Provider and the Interconnection Transmission Owner (or, alternatively, has exercised its right to initiate dispute resolution or to have the final Interconnection Service Agreement filed with the FERC unexecuted) after completion of the Facilities Study related to Interconnection Customer's Interconnection Request and otherwise in accordance with the Tariff. The final Interconnection Service Agreement may further provide for construction of, and payment for, transmission facilities additional to those identified in the attached Specifications. Should Interconnection Customer fail to enter into such final Interconnection Service Agreement (or, alternatively, to initiate dispute resolution or request that the agreement be filed with the FERC unexecuted) within the time prescribed by the Tariff, Transmission Provider shall have the right, upon providing written notice to Interconnection Customer, to terminate this Interim ISA.

(b) In the event that Interconnection Customer decides not to interconnect its proposed facilities, as described in Section 1.0 of the Specifications to the Transmission System, it shall immediately give Transmission Provider written notice of its determination. Interconnection Customer shall be responsible for the Costs incurred pursuant to this Interim ISA by Transmission Provider and/or by the Interconnected Transmission Owner (1) on or before the date of such notice, and (2) after the date of such notice, if the costs could not reasonably be avoided despite, or were incurred by reason of, Interconnection Customer's determination not to interconnect. Interconnection Customer's liability under the preceding sentence shall include all Cancellation Costs in connection with the acquisition, design, construction and/or installation of the facilities described in section 3.0 of the Specifications. In the event the Interconnected Transmission Owner incurs Cancellation Costs, it shall provide the Transmission Provider, with a copy to the Interconnection Customer, with a written demand for payment and with reasonable documentation of such Cancellation Costs. Within 60 days after the date of Interconnection Customer's notice, Transmission Provider shall provide an accounting of, and the appropriate party shall make any payment to the other that is necessary to resolve, any difference between (i) Interconnection Customer's cost responsibility under this Interim ISA and the Tariff for Costs, including Cancellation Costs, of the facilities described in section 3.0 of the Specifications and (ii) Interconnection Customer's previous payments under this Interim ISA. Notwithstanding the foregoing, however, Transmission Provider shall not be obligated to make any payment that the preceding sentence requires it to make unless and until the Interconnected Transmission Owner has returned to it the portion of Interconnection Customer's previous payments that Transmission Provider must pay under that sentence.

This Interim ISA shall be deemed to be terminated upon completion of all payments required under this paragraph (b).

(c) Disposition of the facilities related to this Interim ISA after receipt of Interconnection Customer's notice of its determination not to interconnect shall be decided in accordance with Section 211.1 of the Tariff.

- 8.0 Interconnection Customer agrees to abide by all rules and procedures pertaining to generation in the PJM Region, including but not limited to the rules and procedures concerning the dispatch of generation set forth in the Operating Agreement and the PJM Manuals.
- 9.0 In analyzing and preparing the Facilities Study or the System Impact Study if no Facilities Study is required, and in designing and constructing the Attachment Facilities, Local Upgrades and/or Network Upgrades described in the Specifications attached to this Interim ISA, Transmission Provider, the Interconnected Transmission Owner(s), and any other subcontractors employed by Transmission Provider have had to, and shall have to, rely on information provided by Interconnection Customer and possibly by third parties and may not have control over the accuracy of such information. Accordingly, NEITHER TRANSMISSION PROVIDER, THE INTERCONNECTED TRANSMISSION OWNER(S), NOR ANY OTHER SUBCONTRACTORS EMPLOYED BY TRANSMISSION PROVIDER OR INTERCONNECTED TRANSMISSION OWNER MAKES ANY WARRANTIES, EXPRESS OR IMPLIED, WHETHER ARISING BY OPERATION OF LAW, COURSE OF PERFORMANCE OR DEALING, CUSTOM, USAGE IN THE TRADE OR PROFESSION, OR OTHERWISE, INCLUDING WITHOUT LIMITATION IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, WITH REGARD TO THE ACCURACY, CONTENT, OR CONCLUSIONS OF THE FACILITIES STUDY OR THE SYSTEM IMPACT STUDY IF NO FACILITIES STUDY IS REQUIRED OR OF THE ATTACHMENT FACILITIES, LOCAL UPGRADES AND/OR NETWORK UPGRADES, PROVIDED, HOWEVER, that Transmission Provider warrants that the transmission facilities described in Section 3.0 of the Specifications will be designed, constructed and operated in accordance with Good Utility Practice, as such term is defined in the Operating Agreement. Interconnection Customer acknowledges that it has not relied on any representations or warranties not specifically set forth herein and that no such representations or warranties have formed the basis of its bargain hereunder.
- 10.0 Within 120 days after the Interconnected Transmission Owner completes acquisition, design, construction and/or installation of the facilities described in Section 3.0 of the Specifications, Transmission Provider shall provide Interconnection Customer with an accounting of, and the appropriate party shall make any payment to the other that is necessary to resolve, any difference between (a) Interconnection Customer's responsibility under this Interim ISA and the Tariff for the actual cost of such equipment, and (b) Interconnection Customer's previous aggregate payments to Transmission Provider and the Interconnected Transmission Owner hereunder. Notwithstanding the

foregoing, however, Transmission Provider shall not be obligated to make any payment that the preceding sentence requires it to make unless and until the Interconnected Transmission Owner has returned to it the portion of Interconnection Customer's previous payments that Transmission Provider must pay under that sentence.

- 11.0 No third party beneficiary rights are created under this Interim ISA, provided, however, that payment obligations imposed on Interconnection Customer hereunder are agreed and acknowledged to be for the benefit of the Interconnected Transmission Owner actually performing the services associated with the interconnection of the generating facilities and any associated upgrades of other facilities.
- 12.0 No waiver by either party of one or more defaults by the other in performance of any of the provisions of this Interim ISA shall operate or be construed as a waiver of any other or further default or defaults, whether of a like or different character.
- 13.0 This Interim ISA or any part thereof, may not be amended, modified, assigned, or waived other than by a writing signed by all parties hereto.
- 14.0 This Interim ISA shall be binding upon the parties hereto, their heirs, executors, administrators, successors, and assigns.
- 15.0 This Interim ISA shall not be construed as an application for service under Part II or Part III of the Tariff.
- 16.0 Any notice or request made to or by either Party regarding this Interim ISA shall be made to the representative of the other Party as indicated below.

**Transmission Provider**

PJM Interconnection, L.L.C.  
955 Jefferson Avenue  
Valley Forge Corporate Center  
Norristown, PA 19403-2497

**Interconnection Customer**

[ CONTACT NAME/ADDRESS ]

**Interconnected Transmission Owner**

[ CONTACT NAME/ADDRESS ]

- 17.0 All portions of the Tariff and the Operating Agreement pertinent to the subject of this Interim ISA are incorporated herein and made a part hereof.
- 18.0 This Interim ISA is entered into pursuant to Part IV of the Tariff.

19.0 Neither party shall be liable for consequential, incidental, special, punitive, exemplary or indirect damages, lost profits or other business interruption damages, by statute, in tort or contract, under any indemnity provision or otherwise with respect to any claim, controversy or dispute arising under this Interim ISA.

20.0 Addendum of Interconnection Customer's Agreement to Conform with IRS Safe Harbor Provisions for Non-Taxable Status. To the extent required, in accordance with Section 20.1, Schedule A to this Interim ISA shall set forth the Interconnection Customer's agreement to conform with the IRS safe harbor provisions for non-taxable status.

## 20.1 Tax Liability

### 20.1.1 Safe Harbor Provisions:

This Section 20.1.1 is applicable only to Generation Interconnection Customers. Provided that Interconnection Customer agrees to conform to all requirements of the Internal Revenue Service ("IRS") (e.g., the "safe harbor" provisions of IRS Notices 2001-82 and 88-129) that would confer nontaxable status on some or all of the transfer of property, including money, by Interconnection Customer to the Interconnected Transmission Owner for payment of the Costs of construction of the Transmission Owner Interconnection Facilities, the Interconnected Transmission Owner, based on such agreement and on current law, shall treat such transfer of property to it as nontaxable income and, except as provided in Section 20.1.2 below, shall not include income taxes in the Costs of Transmission Owner Interconnection Facilities that are payable by Interconnection Customer under the Interim Interconnection Service Agreement, the Interconnection Service Agreement or the Interconnection Construction Service Agreement. Interconnection Customer shall document its agreement to conform to IRS requirements for such non-taxable status in the Interconnection Service Agreement, the Interconnection Construction Service Agreement, and/or the Interim Interconnection Service Agreement.

### 20.1.2 Tax Indemnity:

Interconnection Customer shall indemnify the Interconnected Transmission Owner for any costs that Interconnected Transmission Owner incurs in the event that the IRS and/or a state department of revenue (State) determines that the property, including money, transferred by Interconnection Customer to the Interconnected Transmission Owner with respect to the construction of the Transmission Owner Interconnection Facilities and/or any Merchant Network Upgrades is taxable income to the Interconnected Transmission Owner. Interconnection Customer shall pay to the Interconnected Transmission Owner, on demand, the amount of any income taxes that the IRS or a State assesses to the Interconnected Transmission Owner in connection with such transfer of property and/or money, plus any applicable interest and/or penalty charged to the Interconnected Transmission Owner. In the event that the Interconnected Transmission Owner chooses to contest such assessment, either at the request of Interconnection Customer or on its

own behalf, and prevails in reducing or eliminating the tax, interest and/or penalty assessed against it, the Interconnected Transmission Owner shall refund to Interconnection Customer the excess of its demand payment made to the Interconnected Transmission Owner over the amount of the tax, interest and penalty for which the Interconnected Transmission Owner is finally determined to be liable. Interconnection Customer's tax indemnification obligation under this section shall survive any termination of the Interim Interconnection Service Agreement or Interconnection Construction Service Agreement.

### 20.1.3 Taxes Other Than Income Taxes:

Upon the timely request by Interconnection Customer, and at Interconnection Customer's sole expense, the Interconnected Transmission Owner shall appeal, protest, seek abatement of, or otherwise contest any tax (other than federal or state income tax) asserted or assessed against the Interconnected Transmission Owner for which Interconnection Customer may be required to reimburse Transmission Provider under the terms of this Interim Interconnection Service Agreement or Part VI of the Tariff. Interconnection Customer shall pay to the Interconnected Transmission Owner on a periodic basis, as invoiced by the Interconnected Transmission Owner, the Interconnected Transmission Owner's documented reasonable costs of prosecuting such appeal, protest, abatement, or other contest. Interconnection Customer and the Interconnected Transmission Owner shall cooperate in good faith with respect to any such contest. Unless the payment of such taxes is a prerequisite to an appeal or abatement or cannot be deferred, no amount shall be payable by Interconnection Customer to the Interconnected Transmission Owner for such contested taxes until they are assessed by a final, non-appealable order by any court or agency of competent jurisdiction. In the event that a tax payment is withheld and ultimately due and payable after appeal, Interconnection Customer will be responsible for all taxes, interest and penalties, other than penalties attributable to any delay caused by the Interconnected Transmission Owner.

### 20.1.4 Income Tax Gross-Up

#### 20.1.4.1 Additional Security:

In the event that Interconnection Customer does not provide the safe harbor documentation required under Section 20.1.1 prior to execution of this Interim Interconnection Service Agreement, within 15 days after such execution, Transmission Provider shall notify Interconnection Customer in writing of the amount of additional Security that Interconnection Customer must provide. The amount of Security that a Transmission Interconnection Customer must provide initially pursuant to this Interim Interconnection Service Agreement shall include any amounts described as additional Security under this Section 20.1.4 regarding income tax gross-up.

#### 20.1.4.2 Amount:

The required additional Security shall be in an amount equal to the amount necessary to gross up fully for currently applicable federal and state income taxes the estimated Costs of

Local Upgrades and Network Upgrades for which Interconnection Customer previously provided Security. Accordingly, the additional Security shall equal the amount necessary to increase the total Security provided to the amount that would be sufficient to permit the Interconnected Transmission Owner to receive and retain, after the payment of all applicable income taxes (“Current Taxes”) and taking into account the present value of future tax deductions for depreciation that would be available as a result of the anticipated payments or property transfers (the "Present Value Depreciation Amount"), an amount equal to the estimated Costs of Local Upgrades and Network Upgrades for which Interconnection Customer is responsible under the Interconnection Service Agreement. For this purpose, Current Taxes shall be computed based on the composite federal and state income tax rates applicable to the Interconnected Transmission Owner at the time the additional Security is received, determined using the highest marginal rates in effect at that time (the "Current Tax Rate"), and (ii) the Present Value Depreciation Amount shall be computed by discounting the Interconnected Transmission Owner’s anticipated tax depreciation deductions associated with such payments or property transfers by its current weighted average cost of capital.

#### 20.1.4.3 Time for Payment:

Interconnection Customer must provide the additional Security, in a form and with terms as required by Sections 212.4 of the Tariff, within 15 days after its receipt of Transmission Provider’s notice under this section. The requirement for additional Security under this section shall be treated as a milestone included in the Interconnection Service Agreement pursuant to Section 212.5 of the Tariff.

#### 20.1.5 Tax Status:

Each Party shall cooperate with the other to maintain the other Party’s tax status. Nothing in this Interim Interconnection Service Agreement or the Tariff is intended to adversely affect any Interconnected Transmission Owner’s tax exempt status with respect to the issuance of bonds including, but not limited to, local furnishing bonds.

21.0 Addendum of Interconnection Requirement for a Wind Generation Facility. To the extent required, Schedule B to this Interim ISA sets forth interconnection requirements for a wind generation facility and is hereby incorporated by reference and made a part of this Interim ISA.

22.0 Infrastructure security of electric system equipment and operations and control hardware and software is essential to ensure day-to-day reliability and operational security. All Transmission Providers, Interconnected Transmission Owners, market participants, and Interconnection Customers interconnected with electric systems are to comply with the recommendations offered by the President's Critical Infrastructure Protection Board and best practice recommendations from the electric reliability authority. All public utilities are expected to meet basic standards for electric system infrastructure and operational security, including physical, operational, and cyber-security practices.

IN WITNESS WHEREOF, Transmission Provider, Interconnection Customer and Interconnected Transmission Owner have caused this Interim ISA to be executed by their respective authorized officials.

(PJM Queue Position #\_\_\_)

Transmission Provider: PJM Interconnection, L.L.C.

By: \_\_\_\_\_  
Name Title Date

Printed name of signer: \_\_\_\_\_

Interconnection Customer: [Name of Party]

By: \_\_\_\_\_  
Name Title Date

Printed name of signer: \_\_\_\_\_

Interconnected Transmission Owner: [Name of Party]

By: \_\_\_\_\_  
Name Title Date

Printed name of signer: \_\_\_\_\_

**SPECIFICATIONS FOR  
INTERIM INTERCONNECTION SERVICE AGREEMENT**

**By and Among  
PJM INTERCONNECTION, L.L.C.**

**And**

\_\_\_\_\_  
**And**  
\_\_\_\_\_

**(PJM Queue Position #\_\_\_)**

1.0 Description of Customer Facility to be interconnected with the Transmission System in the PJM Region:

a. Name of Customer Facility:

\_\_\_\_\_  
\_\_\_\_\_

b. Location of Customer Facility:

\_\_\_\_\_  
\_\_\_\_\_

c. Size in megawatts of Customer Facility:

{The following language should be included only for generating units

For Generation Interconnection Customer:

Maximum Facility Output of \_\_\_\_\_MW }

{The following language applies when a Generation Interconnection Request involves an increase of the capacity of an existing generating facility: The stated size of the generating unit includes an increase in the Maximum Facility Output of the generating unit of \_\_ MW over Interconnection Customer's previous interconnection. This increase is a result of the Interconnection Request associated with this Interim Interconnection Service Agreement. }

{The following language should be included only for Merchant Transmission Facilities for Transmission Interconnection Customer:

Nominal Rated Capability: \_\_\_\_\_MW }

---

2.0 Interconnection Rights: Interconnection Customer shall obtain Capacity Interconnection Rights in accordance with Subpart C of Part VI of the Tariff at the location specified in section 1.0b upon its execution of the final Interconnection Service Agreement described in section 7.0(a) of this Interim ISA. **[if applicable, add: , provided, however, that pending execution of the final Interconnection Service Agreement, Interconnection Customer shall be entitled to the following interim rights:**

Pursuant to and subject to the applicable terms of the Tariff, Interconnection Customer shall have Capacity Interconnection Rights as a Capacity Resource at the Point of Interconnection specified in this Interim ISA in the amount of \_\_ MW, for the time period of \_\_\_\_\_ to \_\_\_\_\_. To the extent that the Customer Facility described in section 1.0 is not a Capacity Resource with Capacity Interconnection Rights, such Customer Facility shall be an Energy Resource. Pursuant to this Interim ISA, the Customer Facility will be permitted to inject \_\_ MW (nominal) into the system. PJM reserves the right to limit injections to this quantity in the event reliability would be affected by output greater than such quantity.]

3.0.A Facilities to be acquired, designed, constructed and/or installed by the Interconnected Transmission Owner under this Interim ISA:

3.0.B Facilities to be acquired, designed, constructed and/or installed by the Interconnection Customer under this Interim ISA:

4.0 Interconnection Customer shall be subject to the charges detailed below:

4.1 Attachment Facilities Charge:

4.2 Local Upgrades Charge:

4.3 Network Upgrades Charge:

4.4 Cost Breakdown:

\$	Direct Labor
\$	Direct Material
\$	Indirect Labor
\$	Indirect Material
\$	Total

SCHEDULES: {Note: Schedules A and B are required, others are optional; add if applicable and desirable for clarity.}

SCHEDULE A – INTERCONNECTION CUSTOMER’S AGREEMENT TO CONFORM WITH IRS SAFE HARBOR PROVISIONS FOR NON-TAXABLE STATUS

SCHEDULE B - INTERCONNECTION REQUIREMENTS FOR A WIND GENERATION FACILITY

SCHEDULE \_\_\_ - CUSTOMER FACILITY LOCATION/SITE PLAN

SCHEDULE \_\_\_ - SINGLE-LINE DIAGRAM

## SCHEDULE A

### INTERCONNECTION CUSTOMER'S AGREEMENT TO CONFORM WITH IRS SAFE HARBOR PROVISIONS FOR NON-TAXABLE STATUS

{Include the appropriate language from the alternatives below: }

{Include the following language if not required:}  
Not Required.

[OR]

{Include the following language if applicable to Interconnection Customer: }

As provided in Section 20.1 of this Interim ISA and subject to the requirements thereof, Interconnection Customer represents that it meets all qualifications and requirements as set forth in Section 118(a) and 118(b) of the Internal Revenue Code of 1986, as amended and interpreted by Notice 88-129, 1988-2 C.B. 541, and as amplified and modified in Notices 90-60, 1990-2 C.B. 345, and 2001-82, 2001-2 C.B. 619 (the "IRS Notices"). Interconnection Customer agrees to conform with all requirements of the safe harbor provisions specified in the IRS Notices, as they may be amended, as required to confer non-taxable status on some or all of the transfer of property, including money, by Interconnection Customer to Interconnected Transmission Owner with respect to the payment of the Costs of construction and installation of the Transmission Owner Interconnection Facilities and/or Merchant Network Upgrades specified in this Interim ISA.

Nothing in Interconnection Customer's agreement pursuant to this Schedule A shall change Interconnection Customer's indemnification obligations under Section 20.1 of this Interim ISA.

**SCHEDULE B**  
**INTERCONNECTION REQUIREMENTS FOR A**  
**WIND GENERATION FACILITY**

{ Include the appropriate language from the alternatives below }

{ Include the following language if the Customer Facility is not a wind generation facility }

Not Required

[OR]

{ Include the following language when the Customer Facility is a wind generation facility }

Schedule B sets forth requirements and provisions specific to the interconnection of a wind generation facility that is greater than 20 MW. All other requirements pertaining to the interconnection of generation facilities above 20 MW set forth in Part IV of the Tariff continue to apply to wind generation facility interconnections.

**A. Technical Standards Applicable to a Wind Generation Facility**

**i. Low Voltage Ride-Through (LVRT) Capability**

A wind generation facility 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 Schedule B 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 generation facilities subject to Commission Order No. 661 that have either: (i) Interconnection Service 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 generation turbines subject to a wind turbine procurement contract executed prior to December 31, 2005, for delivery through 2007.

1. Wind generation facilities 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 generation facility substation location, as determined by and documented by the transmission provider. The maximum clearing time the wind generation facility 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 generation facility 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 generation facility 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 generation facilities may be tripped after the fault period if this action is intended as part of a special protection system.

4. Wind generation facilities 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 generation facility 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 initial effective date of the Schedule B LVRT standard are exempt from meeting the Schedule B LVRT standard for the remaining life of the existing generation equipment. Existing individual generator units that are replaced are required to meet the Schedule B LVRT standard.

### **Post-transition Period LVRT Standard**

All wind generation facilities subject to Commission Order No. 661 and not covered by the transition period described above must meet the following requirements:

1. Wind generation facilities 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 generation facility substation location, as determined by and documented by the transmission provider. The maximum clearing time the wind generation facility 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 generation facility may disconnect from the transmission system. A wind generation facility 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 generation facilities may be tripped after the fault period if this action is intended as part of a special protection system.

4. Wind generation facilities 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 generation facility 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 initial effective date of the Schedule B LVRT standard are exempt from meeting the Schedule B LVRT Standard for the remaining life of the existing generation equipment. Existing individual generator units that are replaced are required to meet the Schedule B LVRT Standard.

**ii. Power Factor Design Criteria (Reactive Power)**

The power factor requirements for wind generation facilities set forth in section 4.7.1 of Appendix 2 to Attachment O of the Tariff can be met by using, for example, power electronic devices 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 generation facility is in operation. Wind generation facilities 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 generation facility shall provide SCADA capability to transmit data and receive instructions from the Transmission Provider to protect system reliability. The Transmission Provider and the wind generation facility Interconnection Customer shall determine what SCADA information is essential for the proposed wind generation facility, taking into account the size of the facility and its characteristics, location, and importance in maintaining generation resource adequacy and transmission system reliability in its area.

**iv. Meteorological Data Reporting Requirement**

The wind generation facility shall, at a minimum, be required to provide the Transmission Provider with site-specific meteorological data including:

- Temperature (degrees Fahrenheit)
- Wind speed (meters/second)
- Wind direction (degrees from True North)
- Atmospheric pressure (hectopascals)
- Forced outage data (wind turbine and MW unavailability)

The Transmission Provider and Interconnection Customer may mutually agree to any additional meteorological data that are required for the development and deployment of a power production forecast. All requirements for meteorological and forced outage data must be commensurate with the power production forecasting employed by the Transmission Provider. Such additional mutually agreed upon requirements for meteorological and forced outage data are set forth below:

[SPECIFICY AGREED UPON METEOROLOGICAL AND FORCED OUTAGE DATA REQUIREMENTS]

OR

[NOT APPLICABLE FOR THIS INTERIM ISA]

**SCHEDULE N**  
**INTERCONNECTION REQUIREMENTS FOR A**  
**WIND GENERATION FACILITY**

{ Include the appropriate language from the alternatives below }

{ Include the following language if the Customer Facility is not a wind generation facility }

Not Required

[OR]

{ Include the following language when the Customer Facility is a wind generation facility }

Schedule N sets forth requirements and provisions specific to the interconnection of a wind generation facility that is greater than 20 MW. All other requirements pertaining to the interconnection of generation facilities above 20 MW set forth in Part IV of the Tariff continue to apply to wind generation facility interconnections.

**A. Technical Standards Applicable to a Wind Generation Facility**

**i. Low Voltage Ride-Through (LVRT) Capability**

A wind generation facility 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 Schedule N 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 generation facilities subject to Commission Order No. 661 that have either: (i) Interconnection Service 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 generation turbines subject to a wind turbine procurement contract executed prior to December 31, 2005, for delivery through 2007.

1. Wind generation facilities 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 generation facility substation location, as determined by and documented by the transmission provider. The maximum clearing time the wind generation facility 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 generation facility 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 generation facility 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 generation facilities may be tripped after the fault period if this action is intended as part of a special protection system.

4. Wind generation facilities 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 generation facility 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 initial effective date of the Schedule N LVRT standard are exempt from meeting the Schedule N LVRT standard for the remaining life of the existing generation equipment. Existing individual generator units that are replaced are required to meet the Schedule N LVRT standard.

### **Post-transition Period LVRT Standard**

All wind generation facilities subject to Commission Order No. 661 and not covered by the transition period described above must meet the following requirements:

1. Wind generation facilities 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 generation facility substation location, as determined by and documented by the transmission provider. The maximum clearing time the wind generation facility 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 generation facility may disconnect from the transmission system. A wind generation facility 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 generation facilities may be tripped after the fault period if this action is intended as part of a special protection system.

4. Wind generation facilities 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 generation facility 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 initial effective date of the Schedule N LVRT standard are exempt from meeting the Schedule N LVRT Standard for the remaining life of the existing generation equipment. Existing individual generator units that are replaced are required to meet the Schedule N LVRT Standard.

**ii. Power Factor Design Criteria (Reactive Power)**

The power factor requirements for wind generation facilities set forth in section 4.7 of Appendix 2 to Attachment O of the Tariff can be met by using, for example, power electronic devices 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 generation facility is in operation. Wind generation facilities 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 generation facility shall provide SCADA capability to transmit data and receive instructions from the Transmission Provider to protect system reliability. The Transmission Provider and the wind generation facility Interconnection Customer shall determine what SCADA information is essential for the proposed wind generation facility, taking into account the size of the facility and its characteristics, location, and importance in maintaining generation resource adequacy and transmission system reliability in its area.

**iv. Meteorological Data Reporting Requirement**

The wind generation facility shall, at a minimum, be required to provide the Transmission Provider with site-specific meteorological data including:

- Temperature (degrees Fahrenheit)
- Wind speed (meters/second)
- Wind direction (degrees from True North)
- Atmospheric pressure (hectopascals)
- Forced outage data (wind turbine and MW unavailability)

The Transmission Provider and Interconnection Customer may mutually agree to any additional meteorological data that are required for the development and deployment of a power production forecast. All requirements for meteorological and forced outage data must be commensurate with the power production forecasting employed by the Transmission Provider. Such additional mutually agreed upon requirements for meteorological and forced outage data are set forth below:

[SPECIFICY AGREED UPON METEOROLOGICAL AND FORCED OUTAGE DATA REQUIREMENTS]

OR

[NOT APPLICABLE FOR THIS CSA]