The Narragansett Electric Company

Standards for Connecting Distributed Generation

**Exhibit C –** **Expedited/Standard Process Interconnection Application**

Instructions (*please do not submit this page*)

**General Information**

If you wish to submit an application to interconnect your generating facility using the Expedited or Standard Process, please fill out all pages of the attached application form (not including this page of instructions). Once complete, please sign, attach the supporting documentation requested and enclose an application fee of $3/kW (minimum of $300 and maximum of $2,500).

Contact Information: You must provide as a minimum the contact information of the legal applicant. If another party is responsible for interfacing with the Company (utility), you may optionally provide their contact information as well.

Ownership Information: Please enter the legal names of the owner or owners of the generating facility. Include the percentage ownership (if any) by any electric service company (utility) or public utility holding company, or by any entity owned by either.

**Generating Facility Information**

Account and Meter Numbers: Please consult an actual electric bill from the Electric Service Company and enter the correct Account Number and Meter Number on this application. If the facility is to be installed in a new location, a temporary number may be assigned by the Electric Company.

UL 1741 Listed? The standard UL 1741, “Inverters, Converters, and Controllers for Use in Independent Power Systems,” addresses the electrical interconnection design of various forms of generating equipment. Many manufacturers choose to submit their equipment to a Nationally Recognized Testing Laboratory (NRTL) that verifies compliance with UL 1741. This “listing” is then marked on the equipment and supporting documentation.

DEM Air Pollution Control Permit Needed? A generating facility may be considered a point source of emissions of concern by the Rhode Island Department of Environmental Management (RIDEM). Therefore, when submitting this application, please indicate whether your generating facility will require an Air Pollution Control Permit. You must answer these questions, however, your specific answers will not affect whether your application is deemed complete. Please contact the RIDEM to determine whether the generating technology planned for your facility qualifies for a RIDEM waiver or requires a permit.

Jurisdictional Statement: The Company is a public utility subject to the concurrent jurisdiction of the Federal Energy Regulatory Commission (FERC) and the Rhode Island Public Utilities Commission (RIPUC). Pursuant to the Federal Power Act, FERC has jurisdiction over the transmission and sale of electric energy at wholesale in interstate commerce, including jurisdiction over certain generator interconnections. All of the Company’s transmission facilities (including distribution facilities and certain generator interconnection facilities serving a FERC-jurisdictional transmission function) are: (1) subject to FERC jurisdiction; (2) under the operating authority of the regional transmission operator ISO New England Inc. (ISO-NE); and (3) subject to the terms and conditions of the ISO-NE Transmission, Markets and Services Tariff (ISO-NE Tariff).

As the result of this application for interconnection service, the Company may determine that the interconnection is under FERC jurisdiction. If this is the case, the Company may direct the Interconnecting Customer to submit an Interconnection Request to ISO-NE under the ISO-NE Tariff or, if an Interconnection Service Agreement (ISA) is executed between the Company and the Interconnecting Customer under this RIPUC Tariff, the Company may file a copy of the ISA with FERC.

Generating Facility Expedited/Standard Process Interconnection Application

**Contact Information** Date Prepared:      \_\_\_\_\_\_\_

**Legal Name and address of Interconnecting Customer (or, Company name, if appropriate)**

Customer or Company Name:      Contact Name:

Mailing Address:

City:       State:       Zip Code:

Telephone (Primary):       Telephone (Secondary):

Fax:       E-Mail (s):

**Alternative Contact Information (e.g. system installation contractor or coordinating company)**

Name:

Mailing Address:

City:       State:       Zip Code:

Telephone (Primary):       Telephone (Secondary):

Fax:       E-Mail (s):

**Ownership** (include % ownership by any electric utility:     \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Generating Facility Information**

Address of Facility (if different from above):

City:       State:       Zip Code:

Electric Service Company: National Grid Account Number:      \_\_\_\_\_\_\_\_ Meter Number:      \_\_\_\_\_\_\_\_\_\_\_

Work Request Number (For Upgrades or New Service):      \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Type of Generating Unit: Synchronous [ ]  Induction [ ]  Inverter [ ]

Manufacturer:       \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Model:       \_\_\_\_\_\_\_\_\_\_\_

Nameplate Rating:       (kW)       (kVAr)       (Volts) Single[ ]  or Three[ ]  Phase

Prime Mover: Fuel Cell [ ]  Recip Engine [ ]  Turbine [ ]  Photo Voltaic [ ]  Other [ ]  Specify:     \_\_\_\_\_\_\_\_

Energy Source: Solar [ ]  Wind [ ]  Hydro[ ]  Diesel [ ]  Natural Gas [ ]  Fuel Oil [ ]  Other [ ]  Specify: \_\_\_\_

For Solar PV provide system DCC-STC rating:      \_\_\_\_\_\_ (kW) Requesting Feasibility Study? Yes[ ]  No[ ]

Please fill out required fields in the form below for the type of system specified above, the application will not be considered complete unless all required fields are filled out accurately

Need an air quality permit from RIDEM? Yes[ ]  No [ ]  Not Sure [ ]

If “yes”, have you applied for it? Yes[ ]  No [ ]

For inverter based units – is the unit IEEE 1547.1 (UL 1741) Listed? Yes[ ]  No[ ]

Generating system already exists on current account? Yes[ ]  No[ ]

Planning to Export Power? Yes[ ]  No[ ]  A Cogeneration Facility? Yes[ ]  No[ ]

Will Customer generate more that 95% of their hourly consumption on an annual basis? Yes[ ]  No[ ]

Anticipated Export Power Purchaser:      \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Purpose of Generating Facility:**

PLEASE READ THE QUESTIONS BELOW CAREFULLY. YOU MUST NOTIFY THE COMPANY AS EARLY AS POSSIBLE IF YOUR ANSWERS TO THE QUESTIONS IN THIS SECTION WOULD BE DIFFERENT AT ANY POINT IN THE FUTURE.

1. Exporting Electricity?

Please check only a single response below.

[ ]  This Facility will never export any electricity to the electric grid.

OR

[ ]  This Facility will export electricity to the electric grid under the net metering tariff, and Schedule B is attached here.

OR

[ ]  This Facility will export electricity to the electric grid and plans to enroll in the Renewable Growth tariff. If so, does the Facility have site control? [ ]  Yes [ ]  No

OR

[ ]  This Facility will export electricity to the electric grid under the net metering tariff, and Schedule B is attached here, and plans to enroll in the Renewable Growth tariff.

If so, does the Facility have site control? [ ]  Yes [ ]  No

OR

[ ]  I do not yet know whether this Facility will export electricity to the electric grid.

2. Net Annual Exporter of Electricity?

Please check only a single response below.

[ ]  This Facility will never export more electricity than it will consume over the course of one year.

OR

[ ]  This Facility will export more electricity than it will consume over the course of one year.

OR

[ ]  I do not yet know whether this Facility will export more electricity than it will consume over the course of one year.

3. Selling Electricity?

Please check only a single response below.

[ ]  All of the electricity produced by this Facility will be sold to a customer who will seek net metering credits from the Company and use the credits on the customer’s electricity accounts.

OR

[ ]  All of the electricity produced by this Facility plans to be sold through the Renewble Energy Growth tariff. If so, does the Faciilty have site control? [ ]  Yes [ ]  No

OR

[ ]  All of the electricity from this Facility will be sold directly into the regional wholesale electricity market. (For more information, please see: [www.iso-ne.com/regulatory/tariff/sect\_3/index.html](http://www.iso-ne.com/regulatory/tariff/sect_3/index.html).)

4. Seeking Capacity Revenue?

Please check only a single response below.

[ ]  This Facility will never seek capacity credit from the FCM.

OR

[ ]  This Facility will seek capacity credit from the ISO-New England Forward Capacity Market (FCM). (For more information, please see: [www.iso-ne.com/markets/othrmkts\_data/fcm/index.html](http://www.iso-ne.com/markets/othrmkts_data/fcm/index.html).)

OR

[ ]  I do not yet know whether this Facility will seek capacity credit from the FCM.

5. Qualifying Facility Certification?

Please check only a single response below.

[ ]  This Facility will not seek QF status from FERC.

OR

[ ]  This Facility has already sought or will seek certification from the Federal Energy Regulatory Commission (FERC) as a Qualifying Facility (QF). (For more information, please see: www.ferc.gov/industries/electric/gen-info/qual-fac.asp.)

OR

[ ]  I do not yet know whether this Facility will seek QF status.

Est. Install Date:      \_\_\_\_\_\_\_\_\_ Est. In-Service Date:      \_\_\_\_\_\_\_\_ Agreement Needed By:      \_\_\_\_\_\_\_

Est. Install Date:       Est. In-Service Date:       Agreement Needed By:

**Application Process**

I hereby certify that, to the best of my knowledge, all of the information provided in this application is true:

Interconnecting Customer Signature: Title: Date:

National Grid Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Title: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_

**Generating Facility Technical Detail** Date:  **\_\_\_\_\_\_\_\_\_\_\_\_**

Information on components of the generating facility that are using UL Listed equipment (i.e., primarily solar, but if the proposed Facility is using a UL Listed inverter, please fill out below) :

Equipment Type Manufacturer Model National Standard

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

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

Total Number of Generating Units in Facility?

Generator Unit Power Factor Rating:

Max Adjustable Leading Power Factor? Max Adjustable Lagging Power Factor?

Generator Characteristic Data (for all inverter-based machines)

Max Design Fault Contribution Current? Instantaneous [ ]  or RMS? [ ]

Harmonics Characteristics:

Start-up power requirements:

Generator Characteristic Data (for all rotating machines)

Rotating Frequency: (rpm) Neutral Grounding Resistor (If Applicable):

Additional Information for Synchronous Generating Units

Synchronous Reactance, Xd: (PU) Transient Reactance, X’d: (PU)

Subtransient Reactance, X”d: (PU) Neg Sequence Reactance, X2: (PU)

Zero Sequence Reactance, Xo: (PU) kVA Base:

Field Voltage: (Volts) Field Current: (Amps)

Additional information for Induction Generating Units

Rotor Resistance, Rr: Stator Resistance, Rs:

Rotor Reactance, Xr: Stator Reactance, Xs:

Magnetizing Reactance, Xm: Short Circuit Reactance, Xd”:

Exciting Current: Temperature Rise:

Frame Size:

Total Rotating Inertia, H: Per Unit on kVA Base:

Reactive Power Required In Vars (No Load):

Reactive Power Required In Vars (Full Load):

Additional information for Induction Generating Units that are started by motoring

Motoring Power: Design Letter:

Additional information needed for Wind turbines:

Manufacturer’s voltage flicker data (please provide source documents): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Estimated generation data (kW output) in ten (10) second increments based on actual or estimated wind data at the proposed site location (please provide source documents and analysis to support). **Interconnection Equipment Technical Detail** Date: \_\_\_\_\_\_\_\_\_\_

Will a transformer or a grounding bank be used between the generator and the point of interconnection? Yes [ ]  No [ ]

Will the transformer be provided by Interconnecting Customer? Yes [ ]  No [ ]

Transformer Data (if applicable, for all Interconnecting Customer-Owned Transformers including if a grounding bank is proposed, please provide data on each transformer or grounding bank):

Nameplate Rating: (kVA) Single [ ]  or Three [ ]  Phase

Transformer Impedance: (%) on a kVA Base

Transformer Primary: (Volts) Delta [ ]  Wye [ ]  Wye Grounded [ ]  Other [ ]

Transformer Secondary: (Volts) Delta [ ]  Wye [ ]  Wye Grounded [ ]  Other [ ]

Transformer Fuse Data (if applicable, for Interconnecting Customer-Owned Fuse):

 (Attach copy of fuse manufacturer’s Minimum Melt & Total Clearing Time-Current Curves)

Manufacturer: \_ Type: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Size: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Speed: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Will a Neutral grounding reactor be installed? Yes [ ]  No [ ] , if yes, please provide the following:

Thermal current rating: \_\_\_\_\_\_(amps)

Continous current rating: \_\_\_\_\_(amps), at a rated time of \_\_\_\_\_\_\_(seconds)

Impedance: \_\_\_\_\_\_(ohms)

Rated volage: \_\_\_\_\_(kV)

Interconnecting Circuit Breaker (if applicable):

Manufacturer: Type: Load Rating: Interrupting Rating: Trip Speed:

 (Amps) (Amps) (Cycles)

Interconnection Protective Relays (if applicable):

(If microprocessor-controlled)

List of Functions and Adjustable Set points for the protective equipment or software:

 Setpoint Function Minimum Maximum

1.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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3.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

5.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

6.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(If discrete components)

(Enclose copy of any proposed Time Over-current Coordination Curves)

Manufacturer: Type: Style/Catalog No.: Proposed Setting:

Manufacturer: Type: Style/Catalog No.: Proposed Setting:

Manufacturer: Type: Style/Catalog No.: Proposed Setting:

Manufacturer: Type: Style/Catalog No.: Proposed Setting:

Manufacturer: Type: Style/Catalog No.: Proposed Setting:

Manufacturer: Type: Style/Catalog No.: Proposed Setting:

Current Transformer Data (if applicable):

(Enclose copy of Manufacturer’s Excitation & Ratio Correction Curves)

Manufacturer: Type: Accuracy Class: Proposed Ratio Connection:

Manufacturer: Type: Accuracy Class: Proposed Ratio Connection:

Potential Transformer Data (if applicable):

Manufacturer: Type: Accuracy Class: Proposed Ratio Connection:

Manufacturer: Type: Accuracy Class: Proposed Ratio Connection:

**General Technical Detail** Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_

**E-mail a copy of the following to** **Distributed.Generation@nationalgrid.com**

Site electrical One-Line Diagram (relay settings should appear on one-line when applicable) showing the configuration of all generating facility equipment, current and potential circuits, and protection and control schemes with a stamp from a professional engineer (PE) registered in the state where the facility is located.

Site plan that indicates the precise physical location of the following: a) proposed generating facility, b) external utility disconnect, c) all utility meters, d) location of proposed access to the facility, and, e) any public ways in the area (refer to the sample site plan on the National Grid website). If any of these locations change, provide an updated site plan prior to energizing the Facility

Three-line diagram for non UL-1741 certified generator or multiple inverter projects, stamped by a Rhode Island Electrical Professional Engineer.

Links or PDF copies of the specification sheets for the generator, protection equipment, transformer (s) and any other pieces of equipment deemed appropriate.

Mail the Interconnection Application (IA) fees check and first page of the signed IA to:

 National Grid

 Attn: Distributed Generation

 40 Sylvan Rd (E3.571A)

 Waltham, MA 02451-1120