

Application of Groton Wind, LLC

Docket No. 2010-01

Record Request: Size, dimensions and possible locations of new step-up transformer station and 115kV connection facilities.

Response:

Below are the estimated footprints of the expected collector station, three-breaker ring bus station, and the short 115 kV line segments.

Power from the project site will flow at 34.5 kV along wires within the New Hampshire Electric Cooperative's distribution system corridor. It will then enter a collector station which would occupy an area approximately 100 feet by 150 feet (fenced area). The collector station would likely be owned by Groton Wind. It will be located either immediately proximate to the Beebe River Substation or at a location along and in close proximity to the existing 115 kV transmission line owned by Northeast Utilities. Total land use area for the collector station would be approximately 1 acre:

A short 115 kV line will run from the collector station to an abutting three-breaker ring bus station. It is expected that only two or three poles would be needed for this line. They would be standard "H-frame" pole design, consistent with the design of the current 115 kV line poles.

The three-breaker ring bus station would occupy an area of approximately 250 feet by 250 feet (fenced area). Total land use for grading, setbacks, etc. would be approximately 2 acres. This would be owned by NU/PSNH. It will be located either within the existing Beebe River Substation or at a location along and in close proximity to the existing 115 kV transmission line.

A short 115 kV line from the three-breaker ring bus station to the NU 115 kV line would be designed and built by PSNH. It would be located adjacent to the existing 115 kV line, and would be expected to require only one or two pole structures. Presumably the design would be standard "H-frame" poles, but that determination will ultimately be made by PSNH. These structures would likely be wooden, unguyed, and approximately 60 feet above grade level.

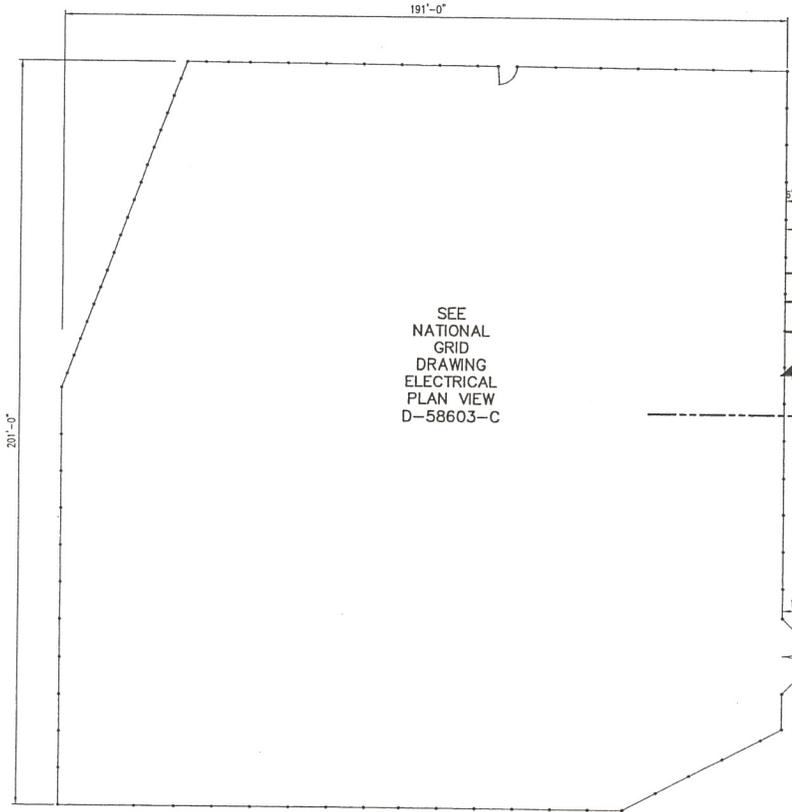
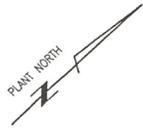
The precise locations of these interconnection facilities have not been finalized because the study period required by ISO-NE has not yet concluded. Locations will be determined through the on-going ISO-NE interconnection study involving ISO-NE, Northeast Utilities/Public Service New Hampshire (NU/PSNH), and Groton Wind. The facilities are expected to remain in close proximity to NU/PSNH's existing transmission and related interconnection facilities, i.e. within or near the Beebe River Substation, or in

the area proximate to the 115 kV transmission line that runs between the Ashland Substation and Beebe River Substation.

For more information please refer to the following attachments submitted with this response:

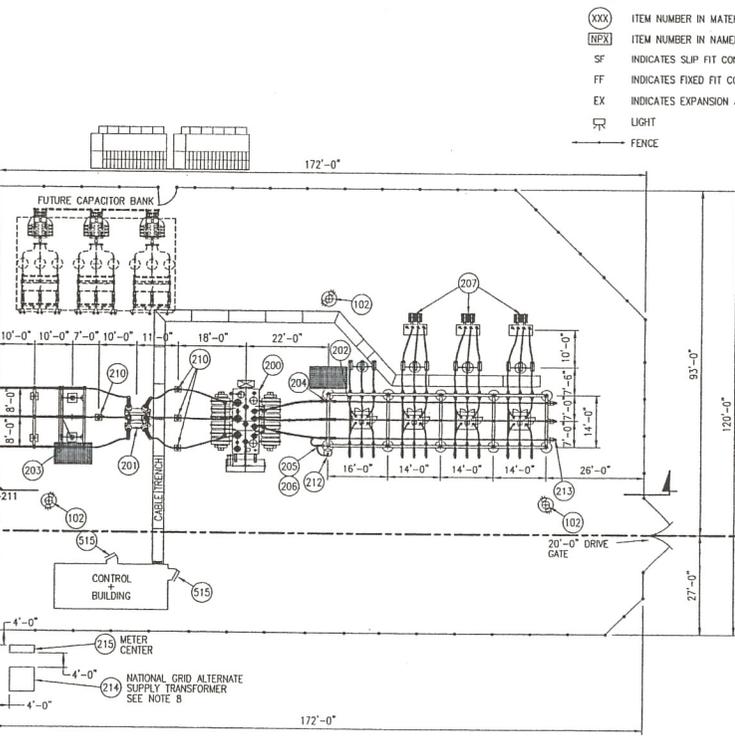
- Location map showing Beebe River Substation and two voltage step-up station locations (one near Beebe River and the other in Holderness)
-
- Standard/representative design schematic for 34.5kV/115kV step-up station

703865_1.DOC



SEE
NATIONAL
GRID
DRAWING
ELECTRICAL
PLAN VIEW
D-58603-C

E-W
BASELINE



GENERAL ARRANGEMENT
SCALE: 1/16" = 1'-0"



LEGEND

- (XXX) ITEM NUMBER IN MATERIAL LIST
- (NFX) ITEM NUMBER IN NAMEPLATE SCHEDULE
- SF INDICATES SLIP FIT CONNECTION FOR BUS AT INSULATOR
- FF INDICATES FIXED FIT CONNECTION FOR BUS AT INSULATOR
- EX INDICATES EXPANSION JOINT
- LIGHT
- FENCE

NOTES

1. REFER TO SPECIFICATIONS FOR MATERIAL, ERECTION AND INSTALLATION REQUIREMENTS.
2. DRILL 1/4" WEEP HOLES IN ALL BUS RISERS, BENDS AND HORIZONTAL RUNS AT LOWEST PRACTICAL POINT TO DRAIN MOISTURE ACCUMULATION. DEBUR ALL HOLES.
3. RIGID BUS COUPLERS SHALL BE INSTALLED WITHIN THE FIRST QUARTER OF A SPAN BETWEEN BUS SUPPORTS.
4. FIELD CLEAN AND COAT W/NO-OXIDE GREASE ALL CONNECTION SURFACES ACCORDING TO THE SPECIFICATIONS JUST PRIOR TO INSTALLATION OF CONNECTORS.
5. COORDINATE THE POSITION OF ALL SINGLE COLUMN STRUCTURES AND GROUND LEADS SO THAT THE GROUND PAD AT THE BASE IS IN DIRECT LINE WITH THE 4/0 COPPER GROUND LEAD FROM THE BURIED GRID.
6. PLACE GROUT UNDER STRUCTURE BASE PLATES PER SPECIFICATIONS.
7. ON PAINTED STRUCTURES, APPLY PAINT TO EXPOSED GROUND PAD SURFACES AFTER GROUND CONNECTION IS MADE.
8. COORDINATE LOCATION OF TRANSFORMER WITH IBER & NATIONAL GRID. INSTALL PER NATIONAL GRID ESS 750 & ESS 754-A.
9. INSERT 336.4 KCMIL AAC DAMPER CABLE INSIDE IN ALL HORIZONTAL TUBULAR ALUMINUM BUS, OVER 4' IN LENGTH.
10. FOR YARD SURFACING SEE DRAWING D-58547-C.

NO.	ISSUED FOR CONSTRUCTION	REVISION	DATE	BY
0			07/27/10	RD

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Senior Project Manager
Phone: (610) 230-0371

**IBERDROLA
RENEWABLES**

330 Provincetown Rd., Skillman, NJ 08558



**POWER
ENGINEERS**
www.powereng.com

DESIGNED: RD | DRAWN BY: JYW | CHECKED: JM

HARDSCRABLE WIND POWER PROJECT
TOWNS OF NORWAY, FAIRFIELD & LITTLE FALLS
HERKIMER COUNTY, NEW YORK

115/34.6KV COLLECTOR SUBSTATION
GENERAL ARRANGEMENT

DATE: 12/09/10 | P.E. NO.: 119797 | SCALE: 1/16" = 1'-0"

HSC E-210

SHEET NUMBER 1 of 1

Let Drawn By: JYW, Checked: JYW
P.E. No.: 119797, License No.: 119797, State of New Jersey



Legend	N	Interconnect Map Groton Wind Project
<ul style="list-style-type: none"> - - - Proposed 34.5kV Interconnect Route Existing 115kV Transmission ROW Holderness Property Beebe River Substation Beebe River Property 	<p>Meters</p>	

Modify Date: 11/8/2010