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August 2, 2004

VIA HAND-DELIVERY

Ms. Pamela Katz
Chairman
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06501

Re: Docket No. 272

Dear Chairman Katz:

Enclosed are an original and twenty (20) copies of the Second Biweekly Report of the Reliability and Operability Committee.

Very truly yours,

Brian T. Henebry

BTH/dab
Enclosures

cc: Service List

{W1311060}

STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

APPLICATION OF THE CONNECTICUT AND POWER COMPANY AND THE UNITED ILLUMINATING COMPANY TO THE CONNECTICUT SITING COUNCIL FOR A CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY AND PUBLIC NEED ("CERTIFICATE") FOR THE CONSTRUCTION OF A NEW 345-KV ELECTRIC TRANSMISSION LINE FACILITY AND ASSOCIATED FACILITIES BETWEEN SCOVILL ROCK SWITCHING STATION IN MIDDLETOWN AND NORWALK SUBSTATION IN NORWALK, INCLUDING PORTIONS OF EXISTING 115-KV AND 345-KV ELECTRIC TRANSMISSION LINES, THE CONSTRUCTION OF BESECK SWITCHING STATION IN WALLINGFORD, EAST DEVON SUBSTATION IN MILFORD, AND SINGER SUBSTATION IN BRIDGEPORT, MODIFICATIONS AT SCOVILL ROCK SWITCHING STATION AND NORWALK SUBSTATION, AND THE RECONFIGURATION OF CERTAIN INTERCONNECTIONS	:	DOCKET NO. 272
	:	August 2, 2004

SECOND BIWEEKLY REPORT OF THE RELIABILITY AND OPERABILITY COMMITTEE

I. SUMMARY OF WORK ACTIVITIES

On July 19, 2004, the Reliability and Operability Committee ("ROC") provided the Siting Council and all parties and intervenors with copies of a resonance study performed by GE and a thermal and voltage analysis regarding Case 6 from the table of M-N Project Study Cases. (Case 6 involved replacing both 345-kV HPFF cables between East Devon and Singer with XLPE, replacing both 345-kV HPFF cables between Singer and Norwalk with XLPE, removing one of the 345-kV HPFF cables in the Bethel to Norwalk Project from service, removing the 115-kV capacitors at Plumtree from service, reducing the capacitors at Glenbrook to 75 Mvar, and reducing the capacitors at Frost Bridge to 205 Mvar in the "all caps in-service" case.) During the July 20th conference call, ROC reported that, based upon the results of GE's resonance study of Case 6, this

case does not provide an acceptable configuration because system resonance is not above the third harmonic.

On July 26th, ROC issued a revised version of the M-N Project Study Cases to add cases 5a, 5b, 5c, and 5d as the next cases to be studied. (A copy of the revised table of case studies is attached.) The additional cases are described below:

- Case 5a: Start with the M-N proposed Project, replace both 345-kV HPFF cables between East Devon and Singer and Singer to Norwalk with XLPE, replace 345-kV overhead between Beseck and East Devon with HVDC lines, and remove one of the 345-kV HPFF cables in the Bethel to Norwalk Project from service

- Case 5b: Start with the M-N proposed Project, replace both 345-kV HPFF cables between East Devon and Singer with XLPE, replace both 345-kV HPFF cables between Singer and Norwalk with HVDC lines, and between Beseck and East Devon with HVDC lines, and remove one of the 345-kV HPFF cables in the Bethel to Norwalk Project from service.

- Case 5c: Start with the M-N proposed Project, replace both 345-kV HPFF cables between East Devon and Singer with XLPE, replace both 345-kV HPFF cables between Singer and Norwalk with XLPE, remove one of the 345-kV HPFF cables in the Bethel to Norwalk Project from service, and add a 500 MVA synchronous condensor at East Devon

- Case 5d: Start with the M-N proposed Project, replace both 345-kV HPFF cables between East Devon and Singer with XLPE, replace both 345-kV HPFF cables between Singer and Norwalk with XLPE, remove one of the 345-kV HPFF cables in the Bethel to Norwalk Project from service, add a 500 MVA synchronous condensor at East Devon, and add a 500 MVA synchronous condensor at Singer

The goal of ROC is to issue a report to the Council by August 16, 2004.

II. CONFERENCE CALLS

ROC held conference calls on July 20th and July 27th. All participating parties and intervenors were provided with an opportunity to ask questions regarding the results of the Case 6 studies and ROC's plan to study Cases 5a, 5b, 5c, and 5d.

Middletown - Norwalk Project Study Cases

07/26/2004
Revision 1

Sequencing of Case studies

Step 1. Harmonics – Start with Case 5 and perform a frequency scan to determine harmonic resonance. The results should provide an indication of which Cases would have a high likelihood of being acceptable to ISO-NE. If the results of Case 5 are acceptable to ISO-NE, then Case 4 would be investigated. If the results of Case 4 are acceptable to ISO-NE, then Case 3 would be evaluated, and so on. If the results of Case 5 are unacceptable to ISO-NE, then Case 6 would be evaluated. If the results of Case 6 are unacceptable to ISO-NE, then Case 7 would be evaluated, and so on.

Step 2. Transients – Perform transient analysis on a limited scope basis in an attempt to find fatal flaws on the Cases which have a high likelihood of being acceptable to ISO-NE. Once screening is completed, perform a detailed analysis of the final Case.
Thermal and voltage – Simultaneously perform these evaluations on the Cases which have a high likelihood of being acceptable to ISO-NE.

Step 3. Stability and Short Circuit - Perform these evaluations on the final Case.

		Responsible party to run cases under ISO-NE direction				
Case #	**Description**	**Harmonic**	**Transient**	**Thermal & Voltage**	**Stability**	**Short Circuit**
1	Start with the M-N proposed project, replace one 345-kV HPFF cable between East Devon and Singer with XLPE.	GE	GE	EPRO PowerGEM	EPRO	NU/UI
2	Start with the M-N proposed Project, replace both 345-kV HPFF cables between East Devon and Singer with XLPE.	GE	GE	EPRO PowerGEM	EPRO	NU/UI
3	Start with the M-N proposed Project, replace both 345-kV HPFF cables between East Devon and Singer with XLPE, and replace one 345-kV HPFF cable between Singer and Norwalk with XLPE.	GE	GE	EPRO PowerGEM	EPRO	NU/UI
4	Start with the M-N proposed Project, replace both 345-kV HPFF cables between East Devon and Singer with XLPE, and replace both 345-kV HPFF cables between Singer and Norwalk with XLPE.	GE	GE	EPRO PowerGEM	EPRO	NU/UI
5	Start with the M-N proposed Project, replace both 345-kV HPFF cables between East Devon and Singer with XLPE, replace both 345-kV HPFF cables between Singer and Norwalk with XLPE, and remove one of the 345-kV HPFF cables in the Bethel to Norwalk Project from service.	GE	GE	EPRO PowerGEM	EPRO	NU/UI
5a	Start with the M-N proposed Project, replace both 345-kV HPFF cables between East Devon and Singer and Singer to Norwalk with XLPE, replace 345-kV overhead between Beseck and East Devon with HVDC lines, and remove one of the 345-kV HPFF cables in the Bethel to Norwalk Project from service.	GE	GE	TBD	TBD	NU/UI
5b	Start with the M-N proposed Project, replace both 345-kV HPFF cables between East Devon and Singer with XLPE, replace both 345-kV HPFF cables between Singer and Norwalk with HVDC lines, and between Beseck and East Devon with HVDC lines, and remove one of the 345-kV HPFF cables in the Bethel to Norwalk Project from service.	GE	GE	TBD	TBD	NU/UI
5c	Start with the M-N proposed Project, replace both 345-kV HPFF cables between East Devon and Singer with XLPE, replace both 345-kV HPFF cables between Singer and Norwalk with XLPE, remove one of the 345-kV HPFF cables in the Bethel to Norwalk Project from service, and add a 500 MVA synchronous condensor at East Devon.	GE	GE	EPRO PowerGEM	EPRO	NU/UI
5d	Start with the M-N proposed Project, replace both 345-kV HPFF cables between East Devon and Singer with XLPE, replace both 345-kV HPFF cables between Singer and Norwalk with XLPE, remove one of the 345-kV HPFF cables in the Bethel to Norwalk Project from service, add a 500 MVA synchronous condensor at East Devon, and add a 500 MVA synchronous condensor at Singer.	GE	GE	EPRO PowerGEM	EPRO	NU/UI
6	Start with the M-N proposed Project, replace both 345-kV HPFF cables between East Devon and Singer with XLPE, replace both 345-kV HPFF cables between Singer and Norwalk with XLPE, remove one of the 345-kV HPFF cables in the Bethel to Norwalk Project from service, remove the 115-kV capacitors at Plumtree from service, reduce the capacitors at Glenbrook to 75 Mvar, and reduce the capacitors at Frost Bridge to 205 Mvar in the "all caps in" cases.	GE	GE	EPRO PowerGEM	EPRO	NU/UI

Middletown - Norwalk Project Study Cases

07/26/2004
Revision 1

Sequencing of Case studies

Step 1. Harmonics – Start with Case 5 and perform a frequency scan to determine harmonic resonance. The results should provide an indication of which Cases would have a high likelihood of being acceptable to ISO-NE. If the results of Case 5 are acceptable to ISO-NE, then Case 4 would be investigated. If the results of Case 4 are acceptable to ISO-NE, then Case 3 would be evaluated, and so on. If the results of Case 5 are unacceptable to ISO-NE, then Case 6 would be evaluated. If the results of Case 6 are unacceptable to ISO-NE, then Case 7 would be evaluated, and so on.

Step 2. Transients – Perform transient analysis on a limited scope basis in an attempt to find fatal flaws on the Cases which have a high likelihood of being acceptable to ISO-NE. Once screening is completed, perform a detailed analysis of the final Case.
Thermal and voltage – Simultaneously perform these evaluations on the Cases which have a high likelihood of being acceptable to ISO-NE.

Step 3. Stability and Short Circuit - Perform these evaluations on the final Case.

7	Start with the M-N proposed Project, replace both 345-kV HPFF cables between East Devon and Singer with XLPE, replace both 345-kV HPFF cables between Singer and Norwalk with XLPE, remove one of the 345-kV HPFF cables in the Bethel to Norwalk Project from service, remove the 115-kV capacitors at Plumtree from service, reduce the capacitors at Glenbrook to 75 Mvar, and reduce the capacitors at Frost Bridge to 205 Mvar in the "all caps in" cases, and investigate fixed capacitor replacements with dynamic reactive control devices.	GE	GE	EPRO PowerGEM	EPRO	NU/UI
8	Start with the M-N proposed Project, replace the 345-kV HPFF cables between East Devon and Singer with 2-1590 ACSR overhead construction from East Devon to Seaview and 345-kV XLPE cables between Seaview and Singer.	GE	GE	EPRO PowerGEM	EPRO	NU/UI
8a	Start with the M-N proposed Project, replace both 345-kV HPFF cables between East Devon and Singer with XLPE, replace both 345-kV HPFF cables between Singer and Norwalk, and Beseck to East Devon with HVDC underground cables, and remove one of the 345-kV HPFF cables in the Bethel to Norwalk Project from service.	GE	GE	EPRO PowerGEM	EPRO	NU/UI
9	Evaluate Alternative A from the application.	GE	GE	EPRO PowerGEM	EPRO	NU/UI
10	Start with Alternative A from the Application and replace the 345-kV HPFF cables between East Devon and Singer with XLPE.	GE	GE	EPRO PowerGEM	EPRO	NU/UI
11	Start with Alternative A from the Application and replace the 345-kV HPFF cables between East Devon and Singer with 2-1590 ACSR overhead construction from East Devon to Seaview and 345-kV XLPE cables between Seaview and Singer.	GE	GE	EPRO PowerGEM	EPRO	NU/UI
12	Evaluate Alternative B from the Application.	GE	GE	EPRO PowerGEM	EPRO	NU/UI