

# APPENDIX A

Middletown-Norwalk Project Steering Committee Process

- Steering Committee Members: Stephen Whitley – ISO-NE  
Roger Zaklukiewicz – Northeast Utilities
- Technical Support: Technical representatives from ISO-NE, Northeast Utilities, and The United Illuminating Company
- Lead Organization: ISO-NE
- Mission: To utilize the Companies' existing proposed route as a starting point for determining the maximum linear length of under grounding of the proposed 345-kV line that is technologically feasible, reliably operable and meets system need as defined by RTEP for the Middletown to Norwalk Project, consistent with ISO-NE's responsibilities of assuring the reliable day-to-day operation of New England's bulk power system and with the designing and planning of that system in accordance with Good Utility Practice and national and regional reliability criteria. The goal of the Steering Committee is to file with the Connecticut Siting Council by August 16, 2004 a document that sets forth project modifications that would be supported by ISO-NE through the Restated NEPOOL Agreement, Section 18.4 process.
- Plan: The Steering Committee will begin this process by investigating effective mitigation (from an electric system standpoint) to the Companies' current proposal for approximately 24 linear miles of underground 345-kV lines (such as the use of 345-kV XLPE cable rather than HPFF cable).
- Communication: A weekly conference call will be held, open to all parties and intervenors in Docket 272. This conference call be held at the same time each week and will provide an opportunity for ISO-NE, NU and UI to provide a progress update. Additionally, a bi-weekly status report will be prepared and filed in Docket 272 that will provide a summary of ongoing work activities. To the extent permitted by law, a member of the Council's staff will be invited to participate in the conference call.
- Studies: In the first bi-weekly report, the Steering Committee will list the studies that will be undertaken and the expected schedule for the completion of the studies.

# APPENDIX B

**McDermott, Bruce L.**

---

**From:** Brian T. Henebry [bhenebry@carmodylaw.com]  
**ent:** Monday, August 16, 2004 9:52 AM  
**To:** McDermott, Bruce L.  
**Subject:** FW: Docket 272: Conference Call Agenda for 7/20/04

## -----Original Message-----

**From:** Brian T. Henebry  
**Sent:** Monday, July 19, 2004 4:15 PM  
**To:** 'dball@cohenandwolf.com'; 'mfrank@cohenandwolf.com'; 'mboord@townofdurham.ct.org'; 'boucher@halloran-sage.com'; 'curto@halloran-sage.com'; 'towngovwallingford@snet.net'; 'egilson@snet.net'; 'ahanks@uks.com'; 'howlem0@ci.bridgeport.ct.us'; 'Bruce.Johnson@po.state.ct.us'; 'rkemp@ci.meriden.ct.us'; 'dmoore@ci.meriden.ct.us'; 'alord@murthalaw.com'; 'Tim.Lynch@CityOfMiddletown.com'; 'dmonz@uks.com'; 'kcarrigan@iso-ne.com'; 'efoley@iso-ne.com'; 'jdesilets@iso-ne.com'; 'amacleod@wbamct.com'; 'dschaefer@bswlaw.com'; 'dschlissel@synapse-energy.com'; 'petelanz@lanzalotta.com'; 'rfs100@sbcglobal.net'; 'po.state.ct.us'; 'Michael.Wertheimer@po.state.ct.us'; 'swhitley@iso-ne.com'; 'texann@optonline.net'; 'lgolden@pullcom.com'  
**Cc:** Anthony M. Fitzgerald; Brian T. Henebry; 'lrاندell@wiggin.com'; 'bmcdermott@wiggin.com'; 'john.prete@uinet.com'; 'zaklurc@nu.com'; 'bartoab@nu.com'; 'createaw@nu.com'; 'scarfaw@nu.com'; 'oberlbk@nu.com'  
**Subject:** Docket 272: Conference Call Agenda for 7/20/04

The following topics will be discussed during tomorrow's conference call:

1. Letter from Chairman Katz
2. Report on Case 6 studies (Harmonics and Thermal/Voltage)
3. DC
4. Next series of studies

Copies of the Case 6 studies have been sent electronically under separate cover.

-----  
 This electronic message contains information from Carmody & Torrance LLP, or its attorneys which may be confidential, privileged or otherwise protected from disclosure. The information is intended to be used solely by the recipient(s) named. If you are not an intended recipient, be aware that any review, disclosure, copying, distribution or use of this transmission or its contents is prohibited. If you have received this transmission in error, please notify us immediately at (203) 573-1200 or at the reply email address. For more information about Carmody & Torrance, please go to: <http://www.carmodylaw.com>  
 -----

**Amendola, Gloria J.**

---

**From:** Brian T. Henebry [bhenebry@carmodylaw.com]  
**Sent:** Monday, August 09, 2004 1:16 PM  
**To:** 'dball@cohenandwolf.com'; 'mfrank@cohenandwolf.com'; 'mboord@townofdurhamct.org'; 'boucher@halloran-sage.com'; 'curto@halloran-sage.com'; 'towngovwallingford@snet.net'; 'egilson@snet.net'; 'ahanks@uks.com'; 'howlem0@ci.bridgeport.ct.us'; 'Bruce.Johnson@po.state.ct.us'; 'rkemp@ci.meriden.ct.us'; 'dmoore@ci.meriden.ct.us'; 'alord@murthalaw.com'; 'Tim.Lynch@CityOfMiddletown.com'; 'dmonz@uks.com'; 'kcarrigan@iso-ne.com'; 'efoley@iso-ne.com'; 'jdesilets@iso-ne.com'; 'amacleod@wbamct.com'; 'dschaefer@bswlaw.com'; 'dschlissel@synapse-energy.com'; 'petelanz@lanzalotta.com'; 'rfs100@sbcglobal.net'; 'charles.walsh@po.state.ct.us'; 'eileen.meskill@po.state.ct.us'; 'Michael.Wertheimer@po.state.ct.us'; 'swhitley@iso-ne.com'; 'texann@optonline.net'; 'lgolden@pullcom.com'; 'paul.hannah@wiltonct.org'; 'HALvord@norwalkct.org'; 'tranmn345docket272@nu.com'; Anthony M. Fitzgerald; Randell, Linda L.; McDermott, Bruce L.; 'john.prete@uinet.com'; 'marcia.wellman@uinet.com'; 'deformw@nu.com'; 'poiroy@nu.com'; 'grossms@nu.com'; 'ecederbaum@wsdb.com'; 'ejohnson@iso-ne.com'; 'scarfaw@nu.com'; 'oberlbk@nu.com'; 'rich.pinto@uinet.com'  
**Cc:** Brian T. Henebry  
**Subject:** Dkt. 272: Agenda for 8/10/04 ROC Conference Call

The agenda for the weekly ROC conference call on Tuesday, 8/10, will be:

1. Discussion of Studies for cases 5b, 5c, and 5d (filed on 8/6)
2. Report on Meeting with ABB
3. Next Steps

The call will begin promptly at 10:00 AM. Please call in by 9:55 AM to avoid interruption of the discussion. The call in number is 1-866-297-6315. Please ask to be connected to the Middletown-Norwalk Conference Call (Confirmation #9375502).

Brian Henebry  
Carmody & Torrance

-----  
This electronic message contains information from Carmody & Torrance LLP, or its attorneys which may be confidential, privileged or otherwise protected from disclosure. The information is intended to be used solely by the recipient(s) named. If you are not an intended recipient, be aware that any review, disclosure, copying, distribution or use of this transmission or its contents is prohibited. If you have received this transmission in error, please notify us immediately at (203) 573-1200 or at the reply email address. For more information about Carmody & Torrance, please go to: <http://www.carmodylaw.com>  
-----

**Amendola, Gloria J.**

---

**From:** createaw@NU.COM  
**Sent:** Monday, August 02, 2004 4:16 PM  
**To:** dball@cohenandwolf.com; mfrank@cohenandwolf.com; mboord@townofdurhamct.org; boucher@halloran-sage.com; curto@halloran-sage.com; towngovwallingford@snet.net; egilson@snet.net; ahanks@uks.com; howlem0@ci.bridgeport.ct.us; Bruce.Johnson@po.state.ct.us; rkemp@ci.meriden.ct.us; dmoore@ci.meriden.ct.us; alord@murthalaw.com; Tim.Lynch@CityOfMiddletown.com; dmonz@uks.com; kcarrigan@iso-ne.com; efoley@iso-ne.com; jdesilets@iso-ne.com; amacleod@wbamct.com; dschaefer@bswlaw.com; dschlissel@synapse-energy.com; petelanz@lanzalotta.com; rfs100@sbcglobal.net; charles.walsh@po.state.ct.us; eileen.meskill@po.state.ct.us; Michael.Wertheimer@po.state.ct.us; swhitley@iso-ne.com; texann@optonline.net; lgolden@pullcom.com; paul.hannah@wiltonct.org; HALvord@norwalkct.org; tranmn345docket272@nu.com; Randell, Linda L.; McDermott, Bruce L.; john.prete@uinet.com; marcia.wellman@uinet.com; deforrw@nu.com; poiroy@nu.com; grossms@nu.com; ecederbaum@wsdb.com; ejohnson@iso-ne.com; scarfaw@nu.com; oberlbk@nu.com; rich.pinto@uinet.com; afitzgerald@carmodylaw.com; bhenebry@carmodylaw.com  
**Subject:** Dkt. 272: Agenda for 8/03/04 Conference Call

The agenda for the August 3, 2004 weekly ROC conference call will be discussion of the status of ongoing case studies. The call will begin promptly at 10:00 AM. Please call in by 9:55 AM to avoid interruption of the discussion. The call in number is 1-866-297-6315. Please ask to be connected to the Middletown-Norwalk Conference Call (Confirmation # 9375502).

Albert W. Cretella, III  
Project Manager  
Transmission Business  
Northeast Utilities  
(860) 665-2288  
createaw@nu.com

\*\*\*\*\*  
This e-mail, including any files or attachments transmitted with it, is confidential and intended for a specific purpose and for use only by the individual or entity to whom it is addressed. Any disclosure, copying or distribution of this e-mail or the taking of any action based on its contents, other than for its intended purpose, is strictly prohibited. If you have received this e-mail in error, please notify the sender immediately and delete it from your system. Any views or opinions expressed in this e-mail are not necessarily those of Northeast Utilities, its subsidiaries and affiliates (NU). E-mail transmission cannot be guaranteed to be error-free or secure or free from viruses, and NU disclaims all liability for any resulting damage, errors, or omissions.  
\*\*\*\*\*

**Amendola, Gloria J.**

---

**From:** Brian T. Henebry [bhenebry@carmodylaw.com]  
**Sent:** Monday, July 26, 2004 3:24 PM  
**To:** 'dball@cohenandwolf.com'; 'mfrank@cohenandwolf.com'; 'mboord@townofdurhamct.org'; 'boucher@halloran-sage.com'; 'curto@halloran-sage.com'; 'tongovwallingford@snet.net'; 'egilson@snet.net'; 'ahanks@uks.com'; 'howlem0@ci.bridgeport.ct.us'; 'Bruce.Johnson@po.state.ct.us'; 'rkemp@ci.meriden.ct.us'; 'dmoore@ci.meriden.ct.us'; 'alord@murthalaw.com'; 'Tim.Lynch@CityOfMiddletown.com'; 'dmonz@uks.com'; 'kcarrigan@iso-ne.com'; 'efoley@iso-ne.com'; 'jdesilets@iso-ne.com'; 'amacleod@wbamct.com'; 'dschaefer@bswlaw.com'; 'dschlissel@synapse-energy.com'; 'petelanz@lanzalotta.com'; 'rfs100@sbcglobal.net'; 'charles.walsh@po.state.ct.us'; 'eileen.meskill@po.state.ct.us'; 'Michael.Wertheimer@po.state.ct.us'; 'swhitley@iso-ne.com'; 'texann@optonline.net'; 'lgolden@pullcom.com'; 'paul.hannah@wiltonct.org'; 'HALvord@norwalkct.org'; 'tranmn345docket272@nu.com'; Anthony M. Fitzgerald; Randell, Linda L.; McDermott, Bruce L.; 'john.prete@uinet.com'; 'marcia.wellman@uinet.com'; 'defforw@nu.com'; 'poirofj@nu.com'; 'grossms@nu.com'  
**Cc:** Brian T. Henebry; Doreen A. Black  
**Subject:** Dkt. 272: Agenda for 7/27/04 Conference Call



M-N Project Study  
Cases revisl...

<<M-N Project Study Cases revision 1.xls>>  
Additional M-N project study cases will be discussed during tomorrow's call (see cases 5a, 5b, 5c, and 5d on attached revision of Middletown-Norwalk Project Study Cases). The call will begin at 8:30. Parties and intervenors attending the hearing in New Britain can participate in person.

(See attached file: M-N Project Study Cases revision 1.xls)

<<M-N Project Study Cases revision 1.xls>>

---

This electronic message contains information from Carmody & Torrance LLP, or its attorneys which may be confidential, privileged or otherwise protected from disclosure. The information is intended to be used solely by the recipient(s) named. If you are not an intended recipient, be aware that any review, disclosure, copying, distribution or use of this transmission or its contents is prohibited. If you have received this transmission in error, please notify us immediately at (203) 573-1200 or at the reply email address. For more information about Carmody & Torrance, please go to: <http://www.carmodylaw.com>

---

# Northeast Utilities

(800) 266-3373

## Participant List: Northeast Utilities

Arranger: Sharon Castater (860) 665-5024

Host: Albert Cretella III

08/03/2004

9:00 AM CT

Middletown Norwalk Conference Call

Name	Phone Number	Company
Hal Alvord		2038547791
Ruth Ann		2038583557
Ann Bartofewitz		8606656392
Eugene Cederbaum		2032279545
Al Cretella		2032392186
Alan Curtel		8602974694
Beth Gilson		2037891846
Amy Hanks		2037868311
Paul Hannah		2035630101
Nancy Harnick		8608272916
Eric Johnson		4135404515
Laura Kennedy		
Eric Knapp		8606593735
Julie Kohler		2038778000
Richard Kowalski		413-535-4127
Christina Lepage		860-827-2944
Andrew Lord		8602406180
Tony Madeod		2038622458
Derick Phelps		8608272935
David Schlissel		6176613248
Raymond Smith		2032942263
Brian Stone		2039298283
Richard Wakefield		7036316912
Charles Walsh		8608085090
Michael Wertheimer		8608272603
Steve Whitley		4135354361



Middletown Norwalk Conference Call

Northeast Utilities

9375502

Albert Grateja

7/27/2004

8:30 AM ET

First Name	Last Name	Affiliation
Tony	Fitzgerald	Carmody and Torrance
Linda	Randell	Wiggin and Dana
Richard	Pinto	UI
Brent	Oberlin	NU
Tony	Macleod	Whitman Breed (ISO-NE)
Roger	Zaklukiewicz	NU
Beth	Gilson	City of New Haven
Eileen	Meskill	Atty General's Office - DOT
David	Ball	Towns of Wilton, Weston and Woodbridge
Monte	Frank	Towns of Wilton, Weston and Woodbridge
Amy	Hanks	Town of North Haven
Fred	Cunliffe	Siting Council Staff
Eric	Knapp	Town of Middlefield
Michael	Wertheimer	AG
Raymond	Smith	Town of Wallingford
Peter	Boucher	Towns of Durham and Wallingford

# Northeast Utilities

(800) 266-3373

---

## Participant List: Northeast Utilities

07/27/2004  
7:30 AM CT

Arranger: Sharon Castater (860) 665-5024  
Host: Albert Cretella III

Middletown Norwalk Conference Call

---

Name	Phone Number	Company
Hal Alvord	(203) 854-7990	
Ruth Ann Wiesenthal	(203) 226-5886	
Eugene Cederbaum	(203) 227-9545	
Al Cretella	(860) 665-2288	
Alan Curto	(860) 297-4694	
Paul Hannah	(508) 548-8456	
Bruce Johnson	(860) 827-2904	
Eric Johnson	(413) 540-4515	
Julie Kohler	(203) 641-2542	
Richard Kowalski	(413) 535-4127	Steve Whitley
Peter Lanzallta	(240) 456-0899	
Brian Stone	(203) 915-2267	
Dick Wakefield	(703) 631-6912	

---

# Northeast Utilities

(800) 266-3373

## Participant List: Northeast Utilities

Arranger: Sharon Castater (860) 665-5024

Host: Albert Cretella III

07/20/2004

9:00 AM CT

Middletown Norwalk Conference Call

Name	Phone Number	Company
Hal Alvord	(203) 854-7791	
Ruth Ann	(203) 226-5886	
Anne Bartosewicz	(860) 665-2771	
Brent Berlin	(860) 250-4304	
Woody Bliss	(203) 222-2656	
Maryann Boord	(860) 349-3625	
Richard Buturla	(203) 783-1200	
Eugene Cederbaum	(203) 227-9545	
Fred Cunliffe	(860) 827-2935	
Alan Curto	(860) 297-4694	
Monte Frank	(203) 749-5564	
Beth Gilson	(203) 777-4050	
Larry Golden	(860) 424-4346	
Amy Hanks	(203) 786-8311	
Paul Hannah	(203) 563-0104	
Eric Johnson	(413) 540-4515	
Bruce Johnson	(860) 827-2904	
Laura Kennedy	(203) 574-3636	
Eric Knapp	(860) 659-3735	
Julie Kohler	(203) 877-8000	
Richard Kowalski	(413) 535-4127	
Peter Lanzalotta	(240) 456-0899	
Tony Maccleod	(203) 912-3041	
Jim Murphy	(203) 849-1321	
Brent Oberlin	(860) 250-4304	
David Schlissel	(617) 661-3248	
Raymond Smith	(203) 294-2263	
Brian Stone	(203) 929-8283	
Dick Wakefield	(703) 631-6912	
Charles Walsh	(860) 808-5090	
Michael Wertheimer	(860) 827-2603	
Steve Whitley	(413) 535-4361	
Alan Curto		

# Time & Charges Summary

**1-800-CONFERENCE(R)**

For questions regarding this or any other  
service, please call (800) 266-3373

**Northeast Utilities**

Call Title **Middletown Norwalk Conference Call**

Host : Albert Cretella III

Call Date **7/13/2004**

Arranged by : Sharon Castater at (860) 665-5024

Call Time **9:00 AM Central**

Order #9453307

Name	Phone	Type	Start	Setup	Duration	Unit	Ext.Cost	Cost
ALAN CURTO	(860) 297-4694	800 Meet Me	08:56	0.00	41	0.1450	5.95	5.95
BRENT OBERLIN	(860) 250-4304	800 Meet Me	08:54	0.00	4	0.1450	0.58	0.58
AMY HANKS	(203) 786-8311	800 Meet Me	08:59	0.00	36	0.1450	5.22	5.22
BRIAN STONE	(203) 929-8283	800 Meet Me	09:03	0.00	32	0.1450	4.64	4.64
RICHARD BUTURLA	(203) 783-1200	800 Meet Me	08:56	0.00	39	0.1450	5.66	5.66
PETER LAMZALOTTA	(240) 460-899	800 Meet Me	09:00	0.00	35	0.1450	5.08	5.08
ERIC KNAPP	(860) 659-3735	800 Meet Me	08:55	0.00	40	0.1450	5.80	5.80
JULIE KOHLER	(203) 877-8000	800 Meet Me	08:57	0.00	38	0.1450	5.51	5.51
BRUCE JOHNSON	(860) 827-2904	800 Meet Me	09:01	0.00	34	0.1450	4.93	4.93
ANDREW LORD	(860) 240-6480	800 Meet Me	08:59	0.00	36	0.1450	5.22	5.22
RAYMOND SMITH	(203) 294-2263	800 Meet Me	08:55	0.00	40	0.1450	5.80	5.80
DAVID SCHLISSEL	(617) 661-3248	800 Meet Me	09:02	0.00	33	0.1450	4.79	4.79
CHARLES WALSH	(860) 808-5090	800 Meet Me	08:58	0.00	37	0.1450	5.37	5.37
RICHARD KOWALSKI	(413) 535-4127	800 Meet Me	09:01	0.00	34	0.1450	4.93	4.93
ELIZABETH GILSON	(203) 789-1846	800 Meet Me	08:57	0.00	39	0.1450	5.66	5.66
BETH GILSON	( ) -	800 Meet Me	09:20	0.00	16	0.1450	2.32	2.32
BARBARA CURRIER-BELL	(203) 874-8298	800 Meet Me	09:01	0.00	36	0.1450	5.22	5.22
MONTE FRANK	(203) 749-5564	800 Meet Me	08:56	0.00	41	0.1450	5.95	5.95
TRISH BRADLEY	(860) 349-9137	800 Meet Me	08:56	0.00	41	0.1450	5.95	5.95
MICHAEL WERTHEIMER	(860) 827-2603	800 Meet Me	08:59	0.00	38	0.1450	5.51	5.51
EUGENE CEDERBAUM	(203) 227-9545	800 Meet Me	09:00	0.00	37	0.1450	5.37	5.37
STEVE WHITLEY	(413) 535-4361	800 Meet Me	09:04	0.00	33	0.1450	4.79	4.79
ANNE BARTOSEWICZ	(860) 665-6880	800 Meet Me	08:54	0.00	43	0.1450	6.24	6.24
LAURA KENNEDY	(203) 574-3636	800 Meet Me	09:07	0.00	30	0.1450	4.35	4.35
TONI MCCLLOUD	(203) 862-2458	800 Meet Me	09:10	0.00	27	0.1450	3.92	3.92
LESLIE HUTCHISON	( ) -	800 Meet Me	09:00	0.00	37	0.1450	5.37	5.37
RICHARD WAKEFIELD	(703) 631-8494	800 Meet Me	09:01	0.00	36	0.1450	5.22	5.22
ERIC JOHNSON	(413) 540-4515	800 Meet Me	09:00	0.00	37	0.1450	5.37	5.37
BRENT OBERLIN	( ) -	800 Meet Me	08:58	0.00	39	0.1450	5.66	5.66
	( ) -	Participant List		0.00	1	3.0000	3.00	3.00
	( ) -	Full time monitoring		0.00	1009	0.0000	0.00	0.00
To: Sharon Castater	( ) -	CD Charge		0.00	1	30.0000	30.00	30.00
	( ) -	Time & Charges		0.00	1	5.0000	5.00	5.00
FUSF Charge	( ) -	Fed Universal Servic		0.00	1	12.7285	12.73	12.73
<b>\$0.00</b>						<b>2022</b>	<b>\$197.03</b>	<b>\$197.03</b>

***The charges detailed in this summary are Preliminary and are subject to review by our billing department. A separate invoice will be sent using your normal billing procedure. Taxes, if applicable, are not included.***

## Time & Charges Summary

**1-800-CONFERENCE(R)**

For questions regarding this or any other  
service, please call (800) 266-3373

Northeast Utilities

Call Title **Middletown Norwalk Conference Call**

Host : Albert Cretella III

Call Date **7/6/2004**

Arranged by : Sharon Castater at (860) 665-5024

Call Time **9:00 AM Central**

Order #9403464

Name	Phone	Type	Start	Setup	Duration	Unit	Ext.Cost	Cost
AL CRETELLA	(860) 665-2288	800 Meet Me	09:00	0.00	52	0.1450	7.54	7.54
MARYANN BOORD	(860) 349-3625	800 Meet Me	08:59	0.00	19	0.1450	2.76	2.76
JOAQUINA BORGES KING	(203) 287-7053	800 Meet Me	09:04	0.00	20	0.1450	2.90	2.90
MARY ANN BOORD	( ) -	800 Meet Me	09:20	0.00	32	0.1450	4.64	4.64
AMY HANKS	(203) 786-8311	800 Meet Me	08:58	0.00	54	0.1450	7.83	7.83
CHARLES WALSH	(860) 808-5090	800 Meet Me	09:01	0.00	51	0.1450	7.40	7.40
EUGENE CEDERBAUM	(203) 227-9545	800 Meet Me	09:00	0.00	52	0.1450	7.54	7.54
MATTHEW GOLDBERG	( ) -	800 Meet Me	08:56	0.00	56	0.1450	8.12	8.12
PAUL HANNAH	(203) 563-0100	800 Meet Me	09:09	0.00	43	0.1450	6.24	6.24
JOAQUINA BORGES-KING	(203) 287-7053	800 Meet Me	09:24	0.00	28	0.1450	4.06	4.06
ELIZABETH GILSON	(203) 777-4050	800 Meet Me	08:58	0.00	54	0.1450	7.83	7.83
MICHAEL A.AHERN	( ) -	800 Meet Me	09:30	0.00	23	0.1450	3.34	3.34
IRA BLOOM	(203) 227-9545	800 Meet Me	09:02	0.00	50	0.1450	7.25	7.25
RICHARD WAKEFIELD	(703) 631-6912	800 Meet Me	08:59	0.00	53	0.1450	7.69	7.69
FRANK POIROT	(860) 665-3409	800 Meet Me	09:14	0.00	38	0.1450	5.51	5.51
	( ) -	Participant List		0.00	1	3.0000	3.00	3.00
	( ) -	Full time monitoring		0.00	625	0.0000	0.00	0.00
To: Sharon Castater	( ) -	CD Charge		0.00	1	30.0000	30.00	30.00
	( ) -	Time & Charges		0.00	1	5.0000	5.00	5.00
	( ) -	FAX Confirmation		0.00	1	0.0000	0.00	0.00
FUSF Charge	( ) -	Fed Universal Servic		0.00	1	7.8844	7.88	7.88
<b>\$0.00</b>						<b>1255</b>	<b>\$136.51</b>	<b>\$136.51</b>

***The charges detailed in this summary are Preliminary and are subject to review by our billing department. A separate Invoice will be sent using your normal billing procedure. Taxes, if applicable, are not included.***

August 10, 2004 Conference Call Participants

ALAN CURTO  
STEVE WHITLEY  
RICHARD KOWALSKI  
LAURA KENNEDY  
NANCY HARNICK  
RUTH ANN WIESENTHAL  
ANDREW LORD  
EUGENE CEDERBAUM  
MICHAEL WERTHEIMER  
DAVID BALL  
ERIC KNAPP  
AMY HANKS  
RICHARD WAKEFIELD  
TONY MACLEOD  
EILEEN MESKILL  
BRIAN STONE  
RAYMOND SMITH  
DAVID SCHLISSEL  
BILL YELENAK  
JULIE KOHLER  
PAUL HANNAH  
ELIZABETH GILSON  
MARYANN BOORD  
AL ALVORD  
ANN BARTOSEWICZ

# APPENDIX C

STATE OF CONNECTICUT  
CONNECTICUT SITING COUNCIL

NORTHEAST UTILITIES SERVICE	:	DOCKET NO. 272
COMPANY APPLICATION 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	:	JULY 16, 2004

**FIRST BIWEEKLY REPORT OF THE  
RELIABILITY AND OPERABILITY COMMITTEE**

**I. SUMMARY OF WORK ACTIVITIES**

The Reliability and Operability Committee ("the Committee") was formed by ISO-NE and the Applicants in this proceeding, The Connecticut Light and Power Company and The United Illuminating Company (collectively, "the Companies"), following the June hearings in this docket with the goal of filing with the Siting Council by August 16, 2004 a document that sets forth project modifications that would (a) reflect the maximum amount of undergrounding possible between Middletown and Norwalk, consistent with the need to assure reliable operation of the bulk power system,<sup>1</sup> and (b) be supported by ISO-NE through the Restated NEPOOL Agreement, Section 18.4 process.

---

<sup>1</sup> As indicated at the June 23, 2004 Process Meeting, the Committee's stated mission is as follows:



In accordance with its planned study approach,<sup>2</sup> The Committee began its work by preparing the attached table entitled "Middletown-Norwalk Project Study Cases." This table describes twelve different system configurations, or "cases," and describes the technical studies. The first case considered by the Committee is Case #5, which utilizes the Companies' proposed route but substitutes XLPE for HPFF cable between East Devon, Singer, and Norwalk Substations, and removes one of two 10-mile 345-kV HPFF cables in the Bethel-Norwalk project from service. Cases 1-4 have higher levels of system capacitance than Case #5, while Cases 6-12 have progressively lower levels of capacitance than Case #5.

On July 12, 2004, the Companies filed a copy of the GE harmonic resonance study for Case #5 with the Siting Council. As discussed during the July 13<sup>th</sup> conference call, ISO-NE has indicated that Case 5 is not acceptable because the system operates below the third harmonic with all capacitor banks in service. However, the results of the harmonic study of Case #5 are encouraging because they demonstrate that the reduction of capacitance on the system has the effect of increasing system resonance, as the Committee had expected. Therefore, the Committee has commissioned harmonic, thermal, and voltage studies of Case #6, which modifies Case #5 by taking additional measures to reduce capacitance. Specifically, Case #6 includes removing the 115-kV capacitors at Plumtree Substation from service, reducing the capacitors at Glenbrook to 75 Mvar, and reducing the capacitors at Frost Bridge Substation to 205 Mvar in the "all capacitors in" cases. The Committee hopes to have these studies completed by July 20, 2004.

## **II. CONFERENCE CALLS**

The Committee held conference calls on July 6<sup>th</sup> and July 13<sup>th</sup>. The purpose of these weekly calls is to provide all interested parties and intervenors with a periodic update on the nature and status of the studies that the Committee has commissioned. The general

---

To utilize the Companies' existing proposed route as the starting point for determining the maximum linear length of undergrounding of the proposed 345-kV line that is technologically feasible, reliably operable and meets system need as defined by RTEP for the Middletown to Norwalk Project, consistent with ISO-NE's responsibilities of assuring reliable day-to-day operation of New England's bulk power system and with the designing and planning of that system in accordance with Good Utility Practice and national and regional reliability criteria. The goal of the . . . Committee is to file with the Siting Council by August 16, 2004 a document that sets forth project modifications that would be supported by ISO-NE through the Restated NEPOOL Agreement, Section 18.4 process.

<sup>2</sup> As indicated at the June 23, 2004 Process Meeting, the Committee's stated plan, in determining the maximum amount of undergrounding possible consistent with the need for system reliability, was to begin by studying the Companies' current proposal and, based on such study, then determine how much more undergrounding might be feasible. The Committee's plan was stated as follows:

The . . . Committee will begin this process [of determining the maximum undergrounding reliably possible, as stated in its mission] by investigating effective mitigation (from an electric system standpoint) to the Companies' current proposal for approximately 24 linear miles of underground 345-kV lines (such as the use of 345-kV XLPE cable rather than HPFF cable).

format for these conference calls is a brief update provided by ISO-NE and/or by CL&P and UI regarding the status of the ongoing technical studies, followed by questions from the participants. (Attached is a copy of the protocol for these conference calls.) For purposes of the first session, held on July 6th, the parties and intervenors were invited to attend either in person at the CCSU Institute for Technology and Business Development in New Britain or by conference call.

## Middletown - Norwalk Project Study Cases

07/02/2004  
Revision 0

### 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 of the final Case.

Case #	Description	Responsible party to run cases under ISO-NE direction				
		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
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
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
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

## **Middletown to Norwalk 345-kV Transmission Line Project Weekly Conference Call**

- Day & Time:** Tuesday Mornings 10:00 – 11:00AM (*the initial conference call will take place on Tuesday July 6, 2004 at Central Connecticut State College Technology Center*)
- Call In Number:** 866-297-6315  
Participants must request to be added to the Middletown/Norwalk conference call – Operator will ask your name and affiliation and will announce you into the call. Should you have difficulties, the confirmation number is 9375502

### **Participation Rules**

1. The Applicants will facilitate the calls. The facilitator will lead the discussion
2. All speakers must state their name before speaking
3. All participants phones shall be put on mute when not speaking to minimize background noise
4. The Applicants will summarize the weekly conference call(s) and provide a summary of work activities and deliverables in a bi-weekly written report to be filed in Docket 272.

### **Conference Call Agenda**

1. The Applicants will initiate the call on Tuesday mornings at 10:00 AM
2. The Applicants and ISO-NE will provide an update of the status of the ongoing technical studies
3. The Applicants and ISO-NE will discuss any preliminary results that are available
4. Participants may ask questions related the status of the ongoing studies and any preliminary results that are provided
5. The Applicants and ISO-NE will review the additional studies to be performed and the expected schedule for completion
6. Participants may ask questions related to the additional studies to be performed and expected schedule for completion

The initial conference call will take place on Tuesday July 6, 2004 and will be conducted at the Central Connecticut State College Technology Center (where the Siting Council hearings have been held) in Room 319 to allow all participants to attend in person. This will be done for the first call only so that the facilitator can become familiar with the participants.

STATE OF CONNECTICUT  
CONNECTICUT SITING COUNCIL

APPLICATION OF THE CONNECTICUT AND : DOCKET NO. 272  
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 : 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 20<sup>th</sup> 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 condenser 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 condenser at East Devon, and add a 500 MVA synchronous condenser 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 20<sup>th</sup> and July 27<sup>th</sup>. 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.

# APPENDIX D

Middletown - Norwalk Project Study Cases07/26/2004  
Revision 1Sequencing 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.

Case #	Description	Responsible party to run cases under ISO-NE direction				
		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 condenser 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 condenser at East Devon, and add a 500 MVA synchronous condenser 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

**Middletown - Norwalk Project Study Cases**

07/02/2004  
Revision 0

**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 of the final Case.

Case #	Description	Responsible party to run cases under ISO-NE direction				
		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
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
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
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