STATE OF CONNECTICUT

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TO: Parties and Intervenors

FROM: Pamela B. Katz, PE, Chairman PBK/

RE: **DOCKET NO. 272** - The Connecticut Light and Power Company and The United Illuminating Company application for a Certificate of Environmental Compatibility and Public Need for the construction of a new 345-kV electric transmission line and associated facilities between the Scovill Rock Switching Station in Middletown and the Norwalk Substation in Norwalk, Connecticut. This includes construction of the Beseck Switching Station in Wallingford, East Devon Substation in Milford, and Singer Substation in Bridgeport and modifications to the Scovill Rock Switching Station and the Norwalk Substation and certain interconnections.

As is well known by the participants in the above-referenced proceeding, a "working group" has been assembled to develop a revision to the application that is the subject of this action, otherwise known as the Phase II 345-kV transmission line project proposed jointly by CL&P and UI (Phase II Project). This working group was composed subsequent to the testimony given by ISO-New England during the most recent evidentiary hearings calling into question the amount of underground construction proposed by the applicant's design.

Under the auspices of the working group process, technical staffs of ISO-New England, UI, and CL&P have begun the process of collaborating on a weekly basis to assess various underground transmission technologies, and their feasibility, to ultimately provide a revised proposal that will maximize the amount of underground construction in this application. The applicant has indicated that the working group expects to provide such a proposal to the Council by August 16, 2004.

At the first meeting of the working group a document was distributed by the applicant (see attached table) that lists twelve proposed study cases for evaluation and consideration. The Council notes that none of the study cases listed includes any proposed underground construction between East Devon and Middletown. Moreover, the Council has monitored the weekly meetings that have occurred thus far and is troubled that there has been virtually no discussion about efforts to design an underground route north of East Devon. Thus, given its current course, it appears that the efforts of the working group will likely result in a proposal that involves no more than 24 miles (or 34 percent) of underground construction relative to the overall route.

The Council wishes to remind the key participants of the working group that the expressed purpose of the collaborative effort between ISO-New England and the applicant – as stated during the June 23 process meeting at which the concept of the working group process was

discussed – is to maximize the amount of proposed underground construction. Indeed, the transcript of the June 23 process meeting contains the following comment made by Anthony M. Macleod, Esq., counsel for ISO-New England:

> MR. ANTHONY MACLEOD:
>
> "Good morning, Madam Chair. I just wanted to follow on Mayor Knopp's comments and perhaps clarify for everybody's benefit that I think it's important in this process that we make sure that we are putting all of the right eggs in the right baskets. And it may be a comfort to Mayor Knopp to know that, as Miss Randell stated at the outset, the goal of this committee, however it ends up being named, is to see how we can maximize the underground portions of the line -- I shouldn't say line, I should say the transmission facility."
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> (Tr. June 23, 2004 Process Meeting, pp. 31-32)

Accordingly, the Council wishes to take this opportunity to underscore the importance of the working group adhering to its expressed purposes and mission of making a good-faith effort to fully develop the potential for designing a route that accedes to the reliability concerns of ISO-New England while also assembling a route that maximizes underground construction. To that end, cases which prove successful for segments three and four should be extended in order to evaluate the extent of comparable underground construction potential that may be viable within segments one and two.

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.

		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
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