KEMA

Memo

To: S. Derek Phelps, Executive Director, Connecticut Siting Council

From: Richard A. Wakefield

Date: 1/10/2005

Re: **Recommended Additional Study Work by KEMA, Inc.**

As requested, KEMA submits the following recommendations addressing additional study work that should be undertaken in light of the recent findings of the Applicant and the Reliability and Operability Committee (ROC). While the ROC Report provides valuable information on the size, nature and location of temporary overvoltages (TOVs) for alternative Phase 2 system configurations, it does not adequately address the possibilities for *mitigating* such problems. As a consequence, two additional areas of work should be undertaken, one area by KEMA, and one area by the Applicant. Both of these areas address the potential for mitigating TOVs identified by the ROC Group's recently completed transient network analyses (TNAs) and increasing the amount of feasible transmission undergrounding.

The recommended areas of additional work include:

1. Additional Harmonic Impedance Studies by KEMA

   - Update KEMA's existing system model and conduct harmonic studies of various methods for mitigating the TOVs observed by the ROC Group.
   - Time required: 4 weeks, including report (but excluding discovery and cross-examination)
   - Cost: $ 48,000 (Study only)

     $ 15,000 (Interrogatories and cross-examination)

2. Additional Transient Network Analyses by the Applicant

   - Conduct additional TNA studies to evaluate the potential for mitigating problems observed by the ROC Group and increasing the amount of undergrounding. Specifically, evaluate the most promising methods identified by KEMA (in Task 1, above) and any other types of mitigation proposed by the Applicant or its consultants.
   - Time required: To be completed by Applicant (estimated at 4 weeks to study and 2 weeks to prepare report)
   - Cost: To be completed by Applicant (KEMA will require 1 week and $7,000 to review and critique the Applicant's results)

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