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Subject: Reevaluation of Seismic Scope for NRC Generic Letter Number
88-20, Supplement 4, Individual Plant Examination of External
Events (IPEEE) for Severe Accident Vulnerabilities

Ref.(a): "Justification For Reduction in IPEEE Program Based on
Revised LLNL Seismic Hazard Results," Nuclear Energy
Institute, April 1994.

Gentlemen:

The purpose of this letter is to revise Toledo Edison's commitments related to the Davis-Besse Nuclear Power Station's IPEEE effort and explain the reasons for doing so at this time. Toledo Edison is revising its plans to address the seismic portion of the IPEEE by performing a reduced-scope Seismic Margins Assessment (SMA) rather than a focused-scope SMA. Toledo Edison realizes that the NRC Staff, as discussed in Information Notice 94-32, "Revised Seismic Hazards", dated April 24, 1994, is reevaluating the appropriate SMA scope for all plants and expects to complete their reevaluation by December 1994. The NRC Staff will then notify licensees of their conclusions. However, due to the upcoming refueling outage commencing on October 1, 1994, Toledo Edison at this time must decide whether it will remain a focused-scope SMA plant or implement a reduced-scope SMA, in order to determine the appropriate extent of information gathering to be performed during the upcoming outage walkdowns. Since Toledo Edison is not only responsible to its customers for the safe operation of the Davis-Besse Nuclear Power Station (DBNPS), but also for ensuring it is operated cost-effectively, Toledo Edison is obligated to make a SMA scope determination at this time. Based on the information discussed below, Toledo Edison is confident that the NRC Staff will conclude, as Toledo Edison has, that a reduced-scope SMA is appropriate.

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As also discussed below, the IPEEE submittal schedule is being extended from September 1, 1995 until March 1, 1996, to enable Toledo Edison to further emphasize the use of its internal resources rather than external resources to perform the reduced-scope SMA at the DBNPS.

Background

Generic Letter (GL) 88-20, Supplement 4 (Toledo Edison Log Number 3509), requested utilities to perform a plant-specific IPEEE to identify any vulnerabilities associated with external events. As one of the external events, an earthquake greater than the design-basis earthquake was to be used for assessing the seismic hazard. The NRC performed a binning analysis for plant sites east of the Rocky Mountains based on the 1989 Lawrence Livermore National Laboratory (LLNL) study NUREG/CR-5250, "Seismic Hazard Characterization of 69 Nuclear Plant Sites East of the Rocky Mountains." The 1989 LLNL study was used in NUREG-1407, "Procedural and Submittal Guidance for the Individual Plant Examination of External Events (IPEEE) for Severe Accident Vulnerabilities," (June 1991, Toledo Edison Log Number 3507) which placed the DBNPS site in the focused-scope category for a 0.3g Review Level Earthquake.

On September 18, 1992, Toledo Edison responded to GL 88-20, Supplement 4, regarding the methodology to be used for the seismic portion of the IPEEE (Toledo Edison letter Serial Number 2089). In that response, Toledo Edison stated it would perform a focused-scope SMA using the Electric Power Research Institute (EPRI) Seismic Margins Methodology with the enhancements discussed in Section 3.2.4 of NUREG-1407. The EPRI methodology is described in EPRI Report NP-6041-SL, Revision 1, "A Methodology for Assessment of Nuclear Power Plant Seismic Margin." Based on the reasons provided below, Toledo Edison is revising its plans to address the seismic portion of the IPEEE by performing a reduced-scope SMA as outlined in Section 3 of NUREG-1407.

Recent Seismic Hazard Information

The NRC issued Information Notice (IN) 94-32, "Revised Seismic Hazard Estimates", (Toledo Edison Log Number 1-3020) in order to disseminate the information contained in NUREG-1488, "Revised Livermore Seismic Hazard Estimates for 69 Nuclear Power Plant Sites East of the Rocky Mountains" performed by LLNL in 1993. This NUREG identifies that the LLNL revised seismic hazard results corroborate those previously developed by EPRI. Furthermore, this NUREG confirms that the seismic hazard at most eastern U.S. plants is low, comparable to the 1989 LLNL seismic hazard results at 10 sites which were binned as reduced-scope plants in NUREG-1407.

Based on tabulated results, the DBNPS's licensed Safe Shutdown Earthquake (SSE) for frequencies less than 25 Hz (Appendix C of NUREG-1488) envelopes the 1993 revised LLNL spectral hazard estimate for an earthquake with a 10,000 year return period (Appendix B of NUREG-1488 (50th percentile)). Additionally, reference (a) shows that the 1989 LLNL probability for exceeding a 0.3g NUREG/CR-0098 spectrum

was approximately $3.0\text{E}-04$ per year, whereas the 1993 revised LLNL hazard results show the annual probability of exceedance for the DBNPS's SSE (0.15g peak ground acceleration) to be approximately $8.0\text{E}-05$. This clearly indicates that the perceived seismic hazard risk is much less than what was originally estimated. In addition, good agreement is shown between the results of NUREG-1488 and the 1989 EPRI seismic hazard analyses (EPRI-NP-6395-D "Probabilistic Seismic Hazard Evaluations at Nuclear Plant Sites in the Central and Eastern United States: Resolution of the Charleston Earthquake Issue"), which further reinforces the low risk associated with the seismic hazard.

The Nuclear Energy Institute developed a white paper (ref. a) which discusses the implication of NUREG-1488. This white paper discusses the evolution of seismic hazard studies, basis for the NRC site binning process, and conservative estimates for core damage frequency. It was shown that in using the data in NUREG-1488 for the DBNPS the result for the seismic hazard probability (probability of exceeding the 5 and 10 Hz spectral velocity) is lower than the probability calculated for all reduced-scope plants using the 1989 LLNL data.

Effect on the DBNPS

Based on NUREG-1407, the walkdown requirements for a reduced-scope program are the same rigorous requirements used for the full and focused-scope SMA reviews. Due to the importance of the walkdown task, the same high level of review team competence and activities are included into the requirements for each of the reviews. The only difference is in the extent of information gathering activities that are performed. In focused-scope reviews, where high-confidence-low-probability-of-failure (HCLPF) calculations are required for seismic margin assessment work, additional information is required for these calculations. This information gathering process is often one of the more expensive parts of the walkdown.

The cost savings for Toledo Edison to perform a reduced-scope IPEEE study instead of the focused-scope analysis is estimated to be in excess of \$250,000. This takes into account eliminating those evaluations required for a focused-scope plant, such as HCLPF calculations, evaluation of low-seismic-ruggedness relays, soil-structure interaction analysis, and the additional effort required for more detailed walkdown information. As discussed in Section 3.2.4.2 of NUREG-1407 and because the DBNPS is also an Unresolved Safety Issue (USI) A-46, "Verification of Seismic Adequacy of Mechanical and Electrical Equipment in Operating Plants," plant, completion of the USI A-46 relay review will also satisfy the intent of the relay chatter evaluation for the IPEEE.

In addition, Toledo Edison plans on extending its submittal date to March 1, 1996. It has been determined that in changing the scope of study to that of a reduced-scope, a further reduction in reliance on resources external to Toledo Edison is possible, therefore creating an even greater emphasis on performing most of the work in-house to further control costs and retain the insight and knowledge gained from such a study.

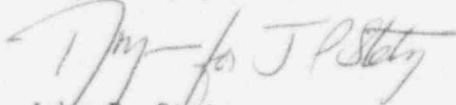
As discussed earlier, Toledo Edison is aware that the NRC Staff is reviewing the new LLNL Study and the criteria used in its binning process. The NRC Staff in SECY-94-166, dated June 17, 1994 stated that, "licensees who believe that the new information may benefit their IPEEE efforts may request an extension to their submittal schedule." Toledo Edison believes that in using the new study, the seismic portion of the IPEEE can be performed at reduced costs with no reduction in the level of safety. If it is determined by the NRC Staff that the DBNPS is in the focused-scope category, Toledo Edison will evaluate this issue and its impact on the IPEEE submittal schedule. However, in order to perform the additional walkdowns as required to gather supplemental information, perform the required HCLPF analyses, and also conduct a relay evaluation separate from USI A-46, a significant extension to the schedule would be required so as to include the next planned outage in Spring, 1996.

Summary

In summary, Toledo Edison, as a result of the impending refueling outage, must determine the appropriate SMA scope for the DBNPS at this time. Based on the latest seismic hazard information, Toledo Edison is changing its seismic margin study from a focused-scope to a reduced-scope for performance of the seismic portion of the IPEEE, and is extending the submittal date from September 1, 1995 to March 1, 1996.

Should you have any questions or require additional information, please contact Mr. William T. O'Connor, Manager - Regulatory Affairs, at (419) 249-2366.

Very truly yours,



John P. Stetz
Vice President - Nuclear
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