

The Light company

Houston Lighting & Power South Texas Project Electric Generating Station P. O. Box 289 Wadsworth, Texas 77483

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U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555

South Texas Project Electric Generating Station
Units 1 and 2
Docket Nos. STN 50-498, STN 50-499
Individual Plant Examination (IPE) for
Severe Accident Vulnerabilities - Comments
on Generic Letter 88-20 and NUREG-1335

- Reference 1: Generic Letter 88-20, "Individual Plant Examination for Severe Accident Vulnerabilities - 10CFR50.54f", dated November 23, 1988.
- 2: NUREG-1335, "Individual Plant Examination: Submittal Guidance, Draft Report for Comment", January 1989.
- 3: Letter ST-HL-AE-3059 from M. A. McBurnett to Document Control Desk dated April 14, 1989.

On November 23, 1988 the Nuclear Regulatory Commission (NRC) issued Generic Letter (GL) 88-20 (Reference 1) which requires each licensee to perform an IPE on its plant(s) on a schedule yet to be established. In January, as indicated in the generic letter, the NRC issued a draft guidance document, NUREG-1335 (Reference 2), for review and comment by the licensees. This letter is in response to the NRC's request for industry comments regarding those documents.

Background

Many utilities, including Houston Lighting & Power Company (HL&P), do not plan to use the IDCOR "IPEM" methodology to satisfy the requirements of Generic Letter 88-20. HL&P will provide an IPE on the South Texas Project Electric Generating Station (STPEGS) which uses a methodology which may be referenced in the 10 CFR 50.54(f) letter. By Reference 3, HL&P has recently submitted a "South Texas Project Probabilistic Safety Assessment (PSA) Summary Report". This report summarizes the results of a Level 1 Probabilistic Risk Assessment (PRA) performed on STPEGS which includes external events and an uncertainty analysis. The methodology utilized is the same as that in studies previously submitted to the NRC, such as the Zion and Seabrook studies. This Level 1 PRA satisfies the "front end" requirements for an IPE on STPEGS. In a

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future submittal this PSA will be referenced as such and will be supplemented with a containment performance analysis as required to meet the generic letter.

Comments

1. In most respects, the methodology used in the STPEGS PSA goes well beyond the level of detail provided by the IDCOR IPEM. However, the PSA methodology may in some ways deviate from the IPEM; for example, the data base utilized, the non-use of templates, the approach and methodology for incorporating the effect of common cause failures, the level of detail and documentation for success criteria, human recovery factors and external events. Therefore, it is important that the IPEM methodology be considered only as one method for meeting the generic letter requirements. That is, the NRC's review of the IPEM approach should not set precedent for or have the effect of establishing the requirements for those not utilizing the IPEM.

The IDCOR IPEM has received NRC review specifically in the context of satisfying GL 88-20. Many plant specific PRAs have already been completed or are being completed for various reasons and at substantial cost. These PRAs will be utilized to satisfy GL 88-20. The NRC has stated that these PRAs will be acceptable as an IPE. The NRC sponsored meeting held in Fort Worth provided a forum for each utility to discuss its approach to satisfying the IPE. The NRC must recognize that comments made at that meeting on behalf of the IPEM do not necessarily represent concerns of utilities pursuing alternative approaches.

2. Overall, the draft NUREG-1335, "Individual Plant Examination: Submittal Guidance, Draft Report for Comment," appears to be reasonable, allowing sufficient flexibility in meeting the requirements of GL 88-20. In particular, the PRA technology utilized by the STPEGS PSA appears to be adequate to meet the guidance of the NUREG. However, the guidance provided in several areas could be made more flexible without compromising the quality of the IPE.

Section 2 of the draft NUREG, "Submittal Guidelines: Style and Content," requires that a "Standard Table of Contents" be followed. It then provides a discussion of what each section of the submittal is to include. While the utility of this approach is appreciated, many PRAs have already been completed or are being completed at this time, which contain the required information but in a different format. In addition, many of these PRAs include an analysis of external events which would otherwise be adequate to meet future requirements in this area of analysis, yet the required "Standard Table" does not allow for this contingency.

Substantial time, effort and money would be expended in these cases in order to reformat these PRAs without any technical benefit or

commensurate gain in severe accident understanding. In addition, it is not clear how external events should be included, particularly when these external events (for example internal and external flooding, seismic events, and fires) have been fully integrated into the PRA analysis and results. It is doubtful that the NRC means to require the omission of these analyses.

It is suggested that where existing PRAs are submitted to meet the requirements of the IPE, the utility should be allowed to determine the format of the submittal of the required information.

3. It has been stated in both GL 88-20 and NUREG-1335 that evaluation of external events is not required in the IPE at this time, but it will be required by some future supplement to the GL. As mentioned above, many PRAs performed to date have already included an extensive analysis of external events using state-of-the-art methodologies. Underlying many if not all of these external events evaluations is a detailed analysis of spatial interactions; i.e., physical relationships which may propagate failures. This is certainly the case for internal fires and floods, and to a lesser extent seismic interactions. As a consequence, it may not be efficient or desirable to decouple such analyses from that for other phenomena.

The NRC should recognize that state-of-the-art advances in external events analysis have been substantial since the completion of WASH-1400. In the process of establishing the approach for including these external events, the NRC should recognize and allow these state-of-the-art analyses to be acceptable for meeting the requirements. Further, a utility that has performed external events analyses as an integral part of a PRA should be permitted to submit this combined analysis to meet the currently specified IPE requirements and the soon-to-be specified external events analysis.

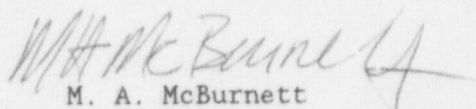
4. Both GL 88-20 and NUREG-1335 make reference to "functional sequences". GL 88-20 requires that the screening criteria of Appendix 2 be applied to "potentially important functional sequences", and in two places the letter attempts to clarify the difference between "functional" and "systemic" sequences. However, the NUREG seems to make little distinction between "functional and/or systemic" event trees and hence functional and/or systemic sequences.

Systemic sequences may be characterized by loss of function, but loss of function does not lend itself easily to identification of the specific causative (sequential) failures. In addition, there are many different schemes for defining "loss of function", depending on the level of detail to be distinguished by the results. Such schemes may include as few as six critical safety functions, or may include hundreds as in WASH-1400, or more. Also, the order of presenting loss of function in event trees may result in differences in characterization of functional

sequences, while on a systemic basis the sequences are uniquely characterized. Most recent detailed PRAs, including that for STPEGS, provide results in terms of systemic sequences which would have to be recharacterized in terms of loss of function for reporting results. Examples of PRA's which the NRC has reviewed or is reviewing which use the systemic approach include Diablo Canyon, Midland, Seabrook, and Three Mile Island.

It is suggested that no distinction be made between functional or systemic sequences in either GL 88-20 or the NUREG. It is also suggested that in each IPE, all sequences should be provided which represent 1% or more of core damage frequency.

These comments are provided for your consideration in the preparation of the final draft of NUREG-1335 and any future revision or supplement to GL 88-20 as appropriate. If you should have any questions on this matter, please contact Mr. R. P. Murphy at (512) 972-8919 or myself (512) 972-8530.


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