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Comments on NRC Draft Generic Letter 88-20 Supplement 4

This letter provides Boston Edison Company's comments on the NRC draft Generic Letter 88-20 Supplement 4, "Individual Plant Examination of External Events (IPEEE) for Severe Accident Vulnerabilities - 10CFR 50.54(f)". In addition to these comments, we endorse the NUMARC comments of October 10, 1990 in their entirety.

Boston Edison Company supports and is participating in Industry forums to determine actions responsive to the Commission's Severe Accident Policy. Before issuance of Generic Letters 88-20 Supplement 1, "Individual Plant Examinations (IPE)" and 89-16, "Installation of Hardened Wetwell Vent", Pilgrim Station implemented containment performance improvements as part of a self-initiated Safety Enhancement Program (SEP). Regarding the potential Mark 1 enhancements discussed in these Generic Letters, we had already installed a hardened vent path, modified existing structures to provide an alternate source of water injection into the vessel, implemented Revision 4 of the Emergency Procedure Guidelines, and installed a backup nitrogen supply system to provide longer term pneumatic control capability to the Automatic Depressurization System. The NRC included in its Generic Letter 89-16 the Pilgrim hardened vent modification description as a model for other BWR's .

We continue to work within the Industry and with the NRC staff to bring about enhancements to the capabilities of operating to prevent, mitigate, or cope with severe accidents. Our comments on draft Generic Letters 88-20, Supplement 4 are thus offered within the spirit of our proven commitment to resolve severe accident issues.

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We are concerned with the NRC's use of the Lawrence Livermore National Laboratory (LLNL) and the Electric Power Research Institute (EPRI) studies to arrive at Review Level Earthquake (RLE) ground accelerations for each plant. We understand that expert input to the LLNL and EPRI studies did not consider local tectonics in detail. While the LLNL and EPRI studies provide basis for a comparison of sites, they lack the detailed geological input necessary to define an individual plant's seismic hazard for the purpose of either design or re-review.

The NRC's approach to prescribing Review Level Earthquakes for each plant has two undesirable results:

1. No basis is provided for future seismic design of systems, components or structures to maintain the seismic margins identified in the IPEEE. Plant design work being accomplished today and in the future could continue to meet current design basis earthquake requirements and negate the costly IPEEE results. Draft Generic Letter 88-20, Supplement 4 should provide guidance for future design or maintenance of the identified margins.

2. It is probably unnecessarily conservative and thus unnecessarily costly for some plants. Extensive seismologic and geologic studies were performed of the Pilgrim site in the past. Application of this detailed site specific information is expected to provide sound basis for realistic definition of the seismic hazard of the Pilgrim site. Generic Letter 88-20 Supplement 4 should allow the licensee to make such detailed evaluation for determination of a RLE.

Additional specific comments on the Generic Letter and NUREG 1407 are included in Attachment A. Should you wish to discuss our comments please contact Mr. J.G. Dyckman of our staff at (617) 849-8861.

for R. G. Bird

JDK/cab/4893

Attachment

cc: Page 3

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ATTACHMENT A TO BECo LETTER 90-121

REVIEW LEVEL EARTHQUAKE (RLE)

Assignment of the RLE should be allowed to be based upon complete site specific evaluation of the geological and seismological data for the site. Boston Edison should be given the opportunity to demonstrate a lower seismic hazard than reported in the draft NUREG 88-20, Supp.4. We request the note to Table 3.1 for plants identified in the 0.5g RLE be changed to read: "Indicates an Eastern United States site whose RLE is >0.3g unless the licensee can demonstrate that the site specific hazard is similar to, or less than, those sites assigned a 0.3g RLE".

NUREG 1407, "Procedural and Submittal Guidance for the Individual Plant Examination of External Events (IPEEE) for Severe Accident Vulnerabilities", states that the candidates for the 0.5g RLE were specifically examined to determine if the classification made seismological sense. Our understanding of the LLNL data in NUREG/CR-5250, "Seismic Hazard Characterization of 69 Nuclear Plant Sites East of the Rocky Mountains", shows many other plants to have a similar, and in some cases higher seismic hazard than Pilgrim, in terms of parameters such as peak ground acceleration (mean) and peak spectral velocity (85th percentile), at a 10,000 year recurrance interval. We expect a complete site specific evaluation to show the differences between Pilgrim and other plants to Pilgrim, will substantiate assignment of a 0.3g RLE.

The Pilgrim site is seismically and geologically different (deterministically and probabilistically) from other New England sites which are proximate to the Massachusetts Thrust Fault Complex, and within the White Mountain Plutonic Series of instrusives variously selected by the NRC and United States Geological Survey (USGS) as the most likely locus of past and future larger New England Earthquakes. Extensive geological and seismological studies conducted for Pilgrim Unit #2 provided a basis for the NRC and USGS to conclude that geological features which could be correlated to the Cape Ann 1755 earthquake (New England's largest) are distinct and removed from the Pilgrim site. This conclusion withstood the rigorous review of the ACRS, its consultants, and a licensing board.

COSTS

In our view the NRC has arrived at specific RLE's for each plant based on generic data and nonquantitative judgment. This overly conservative approach will result in a greater extent of re-review and cost to accomplish the seismic objectives of the Commission's Severe Accident Policy Statement. NUMARC estimates the costs for performance of an IPEEE to approximate $2 million. We estimate the cost for Pilgrim, which has been characterized in the draft Generic Letter to be of a higher seismic hazard, would substantially add to the NUMARC cost estimate. Given the significant financial impact, we believe that "nonquantitative judgment" is an unacceptable method to reach conclusions. The most realistic determination achievable of the RLE should be used for this re-review.

COORDINATION WITH OTHER EXTERNAL EVENT PROGRAMS

The NRC is automatically subsuming other specific generic external event issues into closure of the IPEEE. It can be foreseen that an individual licensee's approach to IPEEE resolution may not be acceptable to the NRC if the licensee IPEEE does not address a particular element considered important by the NRC for closure of one of these other generic issues. Thus the influence these other generic issues may have on the IPEEE could force incremental increases in the threshold of individual IPEEE programs in order to qualify for closure. The process for resolution of generic safety issues should follow the guidance of SECY-88-147,"Integration Plan for Closure of Severe Accident Issues", which recognizes the licensee as the chief proponent for soliciting closure to certain generic safety issues for their plants, to minimize unnecessary duplication and re-review efforts.

For example, the basis for closure of the Charleston Earthquake Issue states:

> "As a result of work carried out by LLNL and EPRI to help to resolve the Charleston Earthquake Issue, probabilistic seismic hazard estimates (Refs. 11 & 12) exist for all nuclear power plant sites east of the Rocky Mountains. These estimates can be used directly by any licensee opting to satisfy the seismic IPEEE by means of a seismic PRA. The hazard estimates also played a key role in determining the review level earthquake to be used in the seismic margin option. Therefore, the IPEEE will constitute a resolution of the Charleston Earthquake Issue."

This statement pre-supposes the licensee will be performing a PRA or accepts the NRC's seismic hazard estimates in determining the RLE. Linking the IPEEE RLE in this manner to the basis for Charleston Earthquake closure creates a "de facto" requirement for IPEEE implementation, unless the licensee is allowed to establish a realistic RLE for his site.

DESIGN ISSUES

Utility decisions committing money and resources for maintenance and modifications are based on current design requirements. We are concerned that the seismic IPEEE could result in seismic upgrades based on the NRC's desire for plants to achieve a particular high confidence-low probability of failure (HCLPF) or core damage frequency goal. At the NRC workshop, the Staff indicated the seismic re-review represents a "snapshot" in time, thus there is no obligation for licensees to maintain a plant HCLPF or core damage frequency at an acceptance threshold.

We find this assertion to be unconvincing and illogical. It is not convincing that present day, or future modification decisions will be considered acceptable to the Staff if these modifications were to impact the plant HCLPF or core damage frequency determined by the IPEEE. Thus we may be designing to a "moving target".

On the other hand it is illogical to conduct an extensive re-review of the seismic capability of a plant and not follow-up with compatible future design requirements to maintain the identified seismic margins.

We suggest the draft Generic Letter should address the future requirements for maintenance of this seismic margins identified by the IPEEE.