8/11/76

AUG 11 1976

Docket No. 50-331

Iowa Electric Light & Power Company
ATTN: Mr. Duane Arnold
President
Security Building
P. O. Box 351
Cedar Rapids, Iowa 52406

Gentlemen:

RE: DUANE ARNOLD

On July 7 and 8, 1976 meetings were held between representatives of the Mark I Owner's Group and the Nuclear Regulatory Commission (NRC) staff to discuss (1) the reassessed content of the Mark I Containment Long Term Program (LTP), and (2) the recently submitted responses to the NRC staff's questions on the Short Term Program Final Report (STPFR). During these meetings the NRC staff provided preliminary comments on the proposed LTP and identified those STPFR question responses which require additional clarification. At the conclusion of the meetings, the NRC staff agreed to identify additional information related to the Long Term Program (LTP) which must be provided prior to the completion of the Short Term Program. For each of the items listed below, we request that the Mark I Owners Group describe (1) the LTP program action plan task under which the concern will be addressed, (2) the method or technique which will be utilized to address the concern, and (3) at what point in time during the LTP that the concern will be addressed.

1. The calculated and measured drywell pressurization rate and enthalpy flux should be matched more closely for the additional tests to be performed. The influence of the following effects, on the drywell pressurization rate, should be addressed:

   (a) the impact of including the mass and energy inventory downstream of the flow restrictions on the blowdown calculation and the subsequent influence on the resulting loads.

   (b) the sensitivity of the loads to the vent system losses (fl/d) and a demonstration that the appropriate fl/d will be used in the test facility.

   (c) the above effects should be evaluated for a postulated break in both the steam line and recirculation line.

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2. The scaling parameters should be verified by direct comparison of 1/12 scale and 1/4 scale test results.

3. Application of any test data used for the LTP load specifications should include an error and uncertainty analysis.

4. Additional testing should be conducted to identify the cause of the downward load anomaly observed in the December 1975/January 1976 1/12 scale test series.

5. Additional testing should be conducted to provide an adequate data base for pool swell impact and drag loads on the ring header-downcomer assembly.

6. For submerged structures, the effects of the differential pressure across the structure due to bubble propagation in the pool should be addressed. In addition, three dimensional testing should be conducted to quantify horizontal and vertical pool velocities for drag loads on submerged structures.

7. Three-dimensional testing should be conducted to confirm the magnitude of load attenuation between downcomers, and to investigate the effects of asymmetric downcomer clearing. Similar testing should be conducted to investigate the effects of asymmetric vent flow.

8. The methods used for determining plant unique loads in the LTP should directly address differences between the test data base and the plant unique conditions. Analytical methods, if used for the plant unique analyses, should be confirmed by adequate testing over the range of expected parameter variation.

9. Additional testing should be conducted to determine load magnitude, frequency and direction for lateral loads and condensation oscillations. The loads and loading combinations should be defined for downcomers, submerged structures, and the torus boundary. Geometric, effects should be considered in the testing program.

10. Loading combinations should consider the potential for Safety-Relief valve (SRV) loads concurrent with a LOCA. This consideration should include single active failures in the SRV system.

11. SRV loads should include error and uncertainty analysis.

12. Tests should be performed to determine the magnitude and frequency of loads induced by seismic slosh for the torus and internals.

We request that the Mark I Owners Group respond to our request prior to or at the scheduled meeting in Bethesda on August 19, 1976.

Sincerely,

George Lear, Chief
Operating Reactors Branch #3
Division of Operating Reactors

cc: Jack R. Newman, Esquire
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