May 30, 2003

MEMORANDUM TO: File

FROM: Drew Holland, Project Manager, Section 2 ***/RA/***
Project Directorate IV
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION (RAI) – WCAP-15691, "JOINT APPLICATIONS REPORT FOR CONTAINMENT INTEGRATED LEAK RATE TEST INTERVAL EXTENSION" (TAC NOS. MB2554 AND MB6806)

A conference call was held on May 21, 2003, with the Westinghouse Owners Group (WOG) and the NRC staff to discuss the subject topical report. It was agreed that the attached request for additional information requiring a response from the WOG would be faxed or e-mailed to the WOG. The attached comments will be transmitted to the WOG.

Project No. 694

Attachment: Request for Additional Information

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PROPOSED REQUEST FOR ADDITIONAL INFORMATION

WCAP-15691, "JOINT APPLICATIONS REPORT FOR CONTAINMENT INTEGRATED LEAK RATE TEST INTERVAL EXTENSION"

WESTINGHOUSE OWNERS GROUP

PROJECT NO. 694

Please respond to the following:

- There is no statistical justification for using the tail probability of the lognormal, or any other fitted distribution, to estimate the probability of a large leak. Because the largest observed leak is 21 L_a and a large leak is >100 L_a, the calculated tail probability is extrapolated far beyond the observed data.

- The parameters of the lognormal distribution fitted to the 23 observed leaks should have been estimated using the sample mean and standard deviation of the underlying normal distribution.

- The weight that should be applied to the conditional probability of a large leak is 23/180 = 0.13, not the weight of 5/180 = 0.028 that was used. The correct weight is the estimated mixture fraction of the assumed lognormal distribution, which is the ratio of the observed number of leaks to which the lognormal was fitted (23) to the total number of tests (180).

- Using the conditional probability of a large leak from the fitted lognormal of 0.006 and the corrected weight for the lognormal, the probability of a large leak is estimated as (23/180)(.006) = 0.00077. The corresponding confidence level of 13 percent is inappropriate for comparison against mean values.

- Regulatory Guide (RG) 1.174, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis," also encourages the use of risk analysis techniques to help ensure and show that the proposed change is consistent with the defense-in-depth philosophy. Consistency with the defense-in-depth philosophy is maintained if a reasonable balance is preserved among prevention of core damage, prevention of containment failure, and consequence mitigation. The increase in the conditional containment failure probability or a suitable alternative was not provided for the proposed change from a 1-in-10 year to a 1-in-15 year test interval or the cumulative change of going from a 3-in-10 year to a 1-in-15 year test interval.

- WCAP-15691 does not address corrosion events that have been identified by visual examinations required by 10 CFR 50.55a and how such events should be considered in the risk model. This would include possible through-wall corrosion in the uninspectable areas of the containment liner. Section 2.3 of RG 1.174 states that a monitoring plan should be developed. WCAP-15691 does not address such a monitoring plan nor does

it address how indications identified as part of a licensee's 50.55a program would be considered as part of the applicable monitoring plan. An example is a through liner indication that would have resulted in a failed Type A test had one been performed.

- The report does not address probabilistic risk assessment quality as discussed in Section 2.2.3.3 of RG 1.174.