

June 16, 2003

Mr. Gordon Bischoff, Project Management
Westinghouse Owners Group
Westinghouse Electric Company
Mail Stop ECE 5-16
P.O. Box 355
Pittsburgh, PA 15230-0355

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION – WCAP-15691, REV. 00,
"JOINT APPLICATIONS FOR CONTAINMENT INTEGRATED LEAK RATE
TEST INTERVAL EXTENSION" (TAC NO. MB6806)

Dear Mr. Bischoff:

By letter dated July 19, 2001, the Combustion Engineering Owners Group submitted for staff review Topical Report WCAP-15691, Rev. 00, "Joint Applications Report for Containment Integrated Leak Rate Test Interval Extension." The staff has completed its preliminary review of WCAP-15691, Rev. 00 and has identified a number of items for which additional information is needed to continue its review. The staff recently discussed this request for additional information (RAI) with Ken Vavrek of your staff, and it was agreed that a response would be provided within 30 days of receipt of this letter.

Pursuant to 10 CFR 2.790, we have determined that the enclosed RAI does not contain proprietary information. However, we will delay placing the RAI in the public document room for a period of ten working days from the date of this letter to provide you with the opportunity to comment on the proprietary aspects only. If you believe that any information in the enclosure is proprietary, please identify such information line by line and define the basis pursuant to the criteria of 10 CFR 2.790.

If you have any questions, please call me at (301) 415-1436.

Sincerely,

/RA/

Drew Holland, Project Manager, Section 2
Project Directorate IV
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Project No. 694

Enclosure: Request for Additional Information

cc w/encl: See next page

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REQUEST FOR ADDITIONAL INFORMATION

WCAP-15691, REV. 00, "JOINT APPLICATIONS FOR CONTAINMENT

INTEGRATED LEAK RATE TEST INTERVAL EXTENSION"

WESTINGHOUSE OWNERS GROUP

PROJECT NO. 694

Please address the following NRC staff issues pertaining to the review of Topical Report WCAP-15691, Rev. 00:

- There is no statistical justification for using the tail probability of the lognormal distribution, or any other fitted distribution, to estimate the probability of a large leak. Because the largest observed leakage rate is $21 L_a$ and the leakage rate assumed for 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 0.13 ($= 23/180$) but not 0.028 ($= 5/180$) as used. The correct weight is the estimated mixture fraction of the assumed lognormal distribution, which is the ratio of the observed number of leaks of 23, to which the lognormal distribution was fitted, to the total number of tests (180).
- Using the conditional probability of a large leak from the fitted lognormal distribution of 0.006 and the corrected weight for the lognormal distribution, the probability of a large leak is estimated as 0.00077 ($= 0.006 \cdot 23/180$). 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 can be 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, Rev. 00 does not address corrosion events, which have been identified by visual examinations required by 10 CFR 50.55a, and how such events should be considered in the risk model. These events 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, Rev. 00 does not address such a monitoring plan nor does it address how indications identified as part of a licensee's 10 CFR 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 topical report does not address probabilistic risk assessment quality as discussed in Section 2.2.3.3 of RG 1.174.

Westinghouse Owners Group

Project No. 694

cc:

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Regulatory and Licensing Engineering
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