

April 12, 2001

Mr. Roger A. Newton, Chairman
Westinghouse Owners Group
Wisconsin Electric Power Company
231 West Michigan
Milwaukee, Wisconsin 53201

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION REGARDING THE
WESTINGHOUSE OWNERS GROUP TOPICAL WCAP-15338, MARCH 2000

Dear Mr. Newton:

By letter dated March 1, 2001, the Westinghouse Owners Group (WOG) submitted Topical Report WCAP-15338, "A Review of Cracking Associated with Weld Deposited Cladding in Operating PWR Plants" March 2000, requesting the Nuclear Regulatory Commission staff's review and issuance of a safety evaluation report.

Based on review of the information submitted, the staff has identified in the enclosure, areas where additional information is needed to complete the review.

Provide a schedule for the submittal of your response within 30 days of the receipt of this letter. Additionally, please coordinate your response date with the Florida Power and Light Company, applicant for Turkey Point, Units 3 and 4 to ensure that the resolution of the issue will not impact the license renewal schedule for Turkey Point, Units 3 and 4. If necessary, the staff would be willing to meet with WOG prior to the submittal of the response to provide clarifications to the staff's requests for additional information.

Sincerely,

/RA/

Raj K. Anand, Project Manager
License Renewal and Standardization Branch
Division of Regulatory Improvement Programs
Office of Nuclear Reactor Regulation

Project No. 686

Enclosure: As stated

cc w/encl: See next page

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*See previous concurrence sheet-attached
Document Name: C:\WCAP15338RAI.wpd

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Project No. 686

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REQUEST FOR ADDITIONAL INFORMATION REGARDING
THE REVIEW OF REPORT WCAP-15338
WESTINGHOUSE OWNERS GROUP

Questions Regarding Vessel Integrity Assessment

Underclad cracks were first discovered in October 1970 during examination of the Atucha reactor vessel. They have been reported to exist only in SA-508 Class 2 reactor vessel forgings manufactured to a coarse grain practice and clad by high-heat-input submerged arc process. The analysis documented in WCAP-15338 evaluates the fatigue crack growth of underclad cracks during 60 years of operation. The analysis documented in WCAP-15338 assumes that fabrication cracks beneath the clad will not penetrate the clad and that the fatigue crack growth could be projected using the ASME Code Section XI reference crack growth law for air environment.

1) Since it can not be ensured that the cracks will not penetrate the clad, the fatigue crack growth evaluation should be performed using the ASME Code Section XI reference crack growth law for water reactor environment. The postulated surface flaw should have an aspect ratio of 6:1 and its depth should include the clad thickness and bound the size of flaws observed during fabrication. Does the 0.295 inch crack depth discussed in the report represent the bounding size of flaw observed during fabrication or does it include the clad thickness?

2) To evaluate reactor pressure vessel integrity:

a) The projected flaw length at the end of the license renewal period should be evaluated to the criteria in ASME Code Section XI, Paragraph IWB-3600. The fracture mechanics evaluation should include: (1) all forging materials that were susceptible to the under clad cracking (i.e. beltline, nozzle belt, vessel flange etc.), (2) embrittlement of beltline forgings at the end of the license renewal term, (3) cladding effects, (4) axial and circumferential flaw configurations, and (5) normal/upset and emergency/faulted conditions.

b) The projected flaw length at the end of the license renewal period should be evaluated to demonstrate that the beltline forgings are not susceptible to pressurized thermal shock (PTS) during the license renewal term. The fracture mechanics analysis should be performed using the worst transient from the PTS study of 1982 (the extended HPI transient) a pressure of 2250 psi, and the embrittlement projected for the limiting beltline forging at the end of the license renewal period.

Enclosure