



OG-02-024

NRC Project Number 686

June 19, 2002

To: Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Attention: Barry J. Elliott
Materials and Chemical Engineering Branch
Division of Engineering
Office of Nuclear Reactor Regulation

Subject: Westinghouse Owners Group
Information Supporting WOG Request for Modification of NRC Safety
Evaluation Report on WCAP-15338, "A Review of Cracking Associated
with Weld Deposited Cladding in Operating PWR Plants," (MUHP-6130)

- References:
1. WOG-00-061, Transmittal of WCAP-15338, "A Review of Cracking Associated with Weld Deposited Cladding in Operating PWR Plants" March 23, 2000 WOG-00-061 to Document Control Desk, NRC
 2. OG-01-047, Revised Response to NRC Request for Additional Information on WCAP-15338, "A Review of Cracking Associated with Weld Deposited Cladding in Operating PWR Plants," July 31, 2001, to Document Control Desk, NRC
 3. Safety Evaluation Of WCAP-15338, "A Review Of Cracking Associated With Weld Deposited Cladding In Operating PWR Plants," Grimes to Newton, October 15, 2001
 4. OG-02-004, Request for Modification of NRC Safety Evaluation Report on WCAP-15338, "A Review of Cracking Associated with Weld Deposited Cladding in Operating PWR Plants," January 22, 2002 to Document Control Desk NRC

Attached is the Westinghouse Owners Group response to a NRC request for written clarification of a WOG contention with a NRC Safety Evaluation Report written on WCAP-15338 (Ref. 4). The clarification explains why the evaluations included in WCAP-15338 (Ref. 1) and the additional information provided in response to NRC Requests for Additional Information (Ref. 2) is applicable to 2-, 3-, and 4-loop Westinghouse plants rather than only 3-loop plants as stated in the NRC Safety Evaluation Report (Ref. 3).

It is the WOG understanding that the requested modification will be issued as a revised SER. Following that issuance, the approved version of WCAP-15338 will be published containing the revised SER and this letter.

Domestic Members

- AmerenUE
Callaway
- American Electric Power Co.
D.C. Cook 1 & 2
- Carolina Power & Light Co.
H.B. Robinson 2
Shearon Harris
- Dominion Nuclear Connecticut
Millstone 3
- Dominion Virginia Power
North Anna 1 & 2
Surry 1 & 2
- Duke Power Company
Catawba 1 & 2
McGuire 1 & 2
- Entergy Nuclear Operations Inc.
Indian Point 2 & 3
- Exelon Generation Company LLC
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Byron 1 & 2
- FirstEnergy Nuclear
Operating Co.
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- South Carolina Electric
& Gas Co.
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- Tennessee Valley Authority
Sequoyah 1 & 2
Watts Bar 1
- TXU Electric
Commanche Peak 1 & 2
- Wolf Creek Nuclear
Operating Corp.
Wolf Creek

International Members

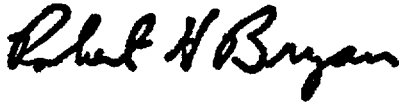
- Electrabel
Doel 1, 2, 4
Tihange 1, 3
- Electricite de France
- Kansai Electric Power Co.
Mihama 1
Takahama 1
Ohi 1 & 2
- Korea Hydro & Nuclear Power Co.
Kori 1 - 4
Yonggwang 1 & 2
- British Energy plc
Sizewell B
- Krsko
- Spanish Utilities
Asco 1 & 2
Vandellors 2
Almaraz 1 & 2
- Ringhals AB
Ringhals 2 - 4
- Taiwan Power Co.
Maanshan 1 & 2

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ADD:
B Elliott to ERIBS

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If you have any questions regarding the information provided, please contact Warren Bamford, Westinghouse, at (412) 374-6515, or Charlie Meyer, Westinghouse, at (412) 374-5027.

Very truly yours,



Robert H. Bryan, Chairman
Westinghouse Owners Group

cc: S.K. Mitra, Project Manager, USNRC License Renewal and Standardization Branch (1L)
P. T. Kuo, Director, USNRC License Renewal and Standardization Branch (1L)
Westinghouse Owners Group Primary Representatives (1L)
Westinghouse Owners Group LCM/LR Working Group (1L)
Westinghouse Owners Group Steering Committee (1L)
G.C. Bischoff, W ECE 5-16 (1L)
C.E. Meyer, W ECE 4-08 (1L)
W.H. Bamford, WECE 314C (1L)

attachment

Westinghouse submitted WCAP-15338 to provide a technical basis for the integrity of the reactor vessels for all Westinghouse plants, in the presence of underclad cracks. After resolution of several Requests for Additional Information, the NRC drafted a Safety Evaluation Report accepting the analysis work, but specifying that the SER applied only for three loop plants (the plant type used for the sample calculations), as stated below:

The license renewal applicant is to verify that its plant is bounded by the WCAP-15338 report. Specifically, the renewal applicant with a 3-loop RPV is to indicate whether the number of design cycles and transients assumed in the WCAP-15338 analysis bounds the number of cycles for 60 years of operation of its RPV. The renewal applicant with a 2-loop or 4-loop RPV needs to demonstrate that the transients for normal, upset, emergency, faulted, and PTS conditions used in WCAP-15338 report bound their plant-specific transients for these conditions. Otherwise, they need to perform similar Section XI flaw evaluations using their plant-specific transients to demonstrate that their RPVs with underclad cracks are acceptable for 60 years of operation.


The purpose of this note is to clarify the original intent of the WCAP-15338 report, and to request that the NRC consider rewording the SER, so that it covers all the Westinghouse plants: two, three, and four loop designs.

The essential elements of the WCAP-15338 evaluation were a treatment of Pressurized Thermal Shock, and a series of fatigue crack growth calculations to consider the potential propagation of the underclad cracks. Each of these topics will be discussed below.

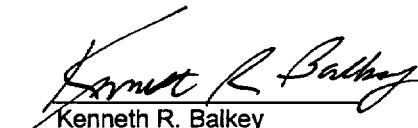
1. Pressurized thermal shock. The results for PTS for all the Westinghouse plant designs are very similar, but the governing plant type is the three loop plant, because it has the highest predicted end-of-life fluence in the core region. Therefore, the plant type discussed in the WCAP will be conservative for all Westinghouse designs.
2. Fatigue crack growth. The operating transients are all very similar for all the Westinghouse designs, two, three, and four loop plants. Results have been obtained for all three plant types, and show very little difference. Therefore the three loop plant results presented in the report are typical for all Westinghouse plants.

From the discussion above, it may be concluded that the Westinghouse three loop results presented and discussed in WCAP-15338 are conservative and applicable for all the Westinghouse operating plants.

Therefore, we respectfully request that the SER be revised to cover all Westinghouse designs.



Warren H. Bamford
Consulting Engineer
Structural Mechanics Technology



Kenneth R. Balkey
Fellow Engineer
Reliability & Risk Assessment

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bcc:

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|---------------|-------------------|
| S.A. Binger | ECE 5-16 (1L, 1A) |
| P.V. Pyle | ECE 5-16 (1L, 1A) |
| K.J. Vavrek | ECE 5-16 (1L) |
| S.R. Bemis | ECE 5-16 (1L, 1A) |
| P. Richardson | Windsor |