

BWRVIPBWR Vessel &
Internals Project*Issue Management and Resolution*

October 29, 1996

Document Control Desk
U. S. Nuclear Regulatory Commission
Washington, DC 20555Attention: Mr. Frank Miraglia
Acting Director
Office of Nuclear Reactor RegulationSubject: Request for Authorization of a Technical Alternative per
10CFR50.55a(a)(3)(i) for Boiling Water Reactors

- References:
- 1.) Letter from J. T. Beckham, Jr. (BWRVIP Chairman) to NRC Document Control Desk, "BWR Vessel and Internals Project, BWR Reactor Pressure Vessel Shell Weld Inspection Recommendations (BWRVIP-05), EPRI Report TR-105697, September 1995," dated September 28, 1995.
 - 2.) Letter from Robin Dyle (Technical Chairman, BWRVIP Assessment Committee) to NRC Document Control Desk, "BWRVIP Response to NRC Requests for Additional Information on BWRVIP-05," dated June 24, 1996.
 - 3.) Memorandum from Kenneth Battige (NRC) to Jack Strosnider (NRC) "Meeting Summary for Meeting with the Boiling Water Reactors Vessel and Internals Project (BWRVIP) Regarding Implementation of 10CFR50.55a(g)(6)(ii)(A), Augmented Examination of Reactor Vessel," dated July 25, 1995.
 - 4.) Memorandum from C. E. Carpenter, Jr. (NRC) to Jack R. Strosnider, Jr. (NRC), "Meeting Summary for July 11, 1996 Meeting with Boiling Water Reactors Vessel and Internals Project Executive Oversight Committee," received July 23, 1996.

Pursuant with the provisions of 10CFR50.55a(a)(3)(i), the purpose of this letter is to request authorization for a technical alternative to the scope provisions of 10CFR50.55a(g)(6)(ii)(A)(2) for boiling water reactors (BWRs).

Specifically, the proposed alternative is to perform a one-time examination of 100% of the reactor pressure vessel (RPV) longitudinal shell welds specified in Item B1.12 of Examination Category B-A, "Pressure Retaining Welds in Reactor Vessel," in Table IWB-2500-1 of Subsection IWB of the 1989 Edition of Section XI,

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Division 1, of the ASME Boiler and Pressure Vessel Code. This examination is to be performed in lieu of the program currently provided for in 10CFR50.55a(g)(6)(ii)(A)(2). For the purpose of this one-time examination, "essentially 100%" as used in Table IWB-2500-1 means more than 90 percent of the examination volume of each weld, where the reduction in coverage is due to interference by another component or part geometry.

10CFR50.55a(g)(6)(ii)(A)(2) requires a one-time augmented inspection of essentially 100% of the RPV shell welds (ASME Item No. B1.10) for all nuclear power facilities. The Reference 1 letter identified above transmitted a BWRVIP document to the NRC that provides a technical basis for an alternative BWR RPV shell weld inspection process from that provided for in 10CFR50.55a(g)(6)(ii)(A)(2). The BWRVIP has also submitted other substantiating materials to the NRC staff on this subject (Reference 2). Additionally, the BWRVIP has met with the NRC staff on several occasions to discuss this subject (References 3 and 4). The most recent meeting with the NRC staff on this subject was held on October 15, 1996. The principal difference between the proposed alternative and the inspections described in 10CFR50.55a(g)(6)(ii)(A)(2) is the removal of circumferential shell weld inspections. The methodology described in the BWRVIP-05 document demonstrates that for BWRs there is virtually no increase in probability of vessel failure if BWR RPV circumferential shell welds are not inspected.

As described in the BWRVIP-05 document, there are significant physical and operational differences between BWRs and pressurized water reactors (PWRs) such that BWR vessels are substantially less likely to leak or fail. The table below utilizes the methodology from the BWRVIP-05 document to show that there is no discernible difference in probability of vessel failure when inspection of BWR circumferential welds is eliminated. However, the cost savings in eliminating the inspection of the BWR circumferential welds is substantial.

<u>Case</u>	<u>Probability of Vessel Failure</u>	<u>Cost of Inspection per plant</u>	<u>BWR fleet</u>
inspect all shell welds	5.69×10^{-8}	\$3.3M	\$119M
inspect long. welds only	5.69×10^{-8}	\$1.85M	\$67M

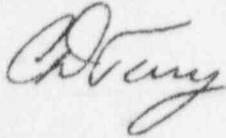
The BWRVIP believes that the documentation submitted to the NRC demonstrates that inspecting only the BWR RPV longitudinal shell welds provides an acceptable level of quality and safety. Additionally, the significant added costs for inspecting BWR RPV circumferential shell welds does not result in a compensating increase in the level of quality or safety.

Therefore, based on the BWRVIP documentation submitted to the NRC staff and in accordance with 10CFR50.55a(a)(3)(i), this is a request that, for BWRs, you authorize the inspection of reactor shell welds specified in Item B1.12 of Examination Category B-A, "Pressure Retaining Welds in Reactor Vessel," in Table IWB-2500-1 of Subsection IWB of the 1989 Edition of Section XI, Division 1,

of the ASME Boiler and Pressure Vessel Code as an alternative to the scope of inspection required in 10CFR50.55a(g)(6)(ii)(A)(2).

If you have any questions on this subject please feel free to call Robin Dyle of Southern Nuclear at (205) 992-7121 or Carl Terry of Niagara Mohawk at (315) 349-7263.

Sincerely,



for J. T. Beckham, Jr.
Southern Nuclear Operating Company
Chairman, BWR Vessel & Internals Project

c: C. E. Carpenter, NRC
Carl Terry, NMPC
Robin Dyle, SNC
Warren Bilanin, EPRI