



Serial: RNP-RA/01-0081

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United States Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2
DOCKET NO. 50-261/LICENSE NO. DPR-23

**SUPPLEMENTAL INFORMATION
PERTAINING TO REQUEST FOR RELIEF
REGARDING SURFACE EXAMINATION OF REACTOR PRESSURE
VESSEL NOZZLE-TO-SAFE END WELDS (RELIEF REQUEST NO. 32)**

Ladies and Gentlemen:

By letter dated March 21, 2001, H. B. Robinson Steam Electric Plant (HBRSEP), Unit No. 2, submitted Relief Request No. 32 requesting relief from the requirements of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel (B&PV) Code, Section XI, regarding surface examination requirements for Reactor Pressure Vessel (RPV) nozzle-to-safe end welds. By letter dated March 30, 2001, HBRSEP, Unit No. 2, provided supplemental information to support the staff's review of Relief Request No. 32. The NRC Staff provided verbal approval of an alternative examination in lieu of the Code-required surface examination in a teleconference between the NRC and Carolina Power & Light (CP&L) Company conducted on April 5, 2001. The alternative examination will be a VT-2 visual examination conducted in accordance with the ASME B&PV Code, Section XI, IWA-5242, "Insulated Components" (with the exception of system temperature and pressure as previously noted). In a subsequent teleconference conducted on April 19, 2001, CP&L provided supplemental information in support of the NRC's Safety Evaluation and agreed to provide this information by letter.

As discussed in the April 5, 2001, teleconference, during the Code required ultrasonic test (UT) of 1/3 thickness from the inner diameter (ID) of the pipe, approximately 40% of the thickness was examined.

Additionally, curves have been developed for an ASME B&PV Code, Section XI, Paragraph IWB-3600, "Analytical Evaluation of Flaws," evaluation of alloy 82/182, which is the weld material for the nozzle to safe-end welds. These curves indicate that for both longitudinal and circumferential flaws, the allowable flaw size is approximately 75% through wall. For an extremely long flaw, the allowable flaw depth is shallower, but because a flaw on the outer diameter (OD) does not experience primary water stress corrosion cracking (PWSCC), such flaws are not predicted to propagate.

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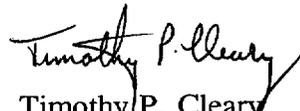
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The curves for both the inlet and outlet nozzle to safe-end locations, both longitudinal and circumferentially orientated, show that the 10, 20, and 30 year curves are coincident which confirms that a hypothetical indication on the OD is not predicted to propagate.

The equipment and procedures used to perform an automated ultrasonic examination from the pipe inside surface of the nozzle to safe-end welds were demonstrated by the vendor and observed by Electric Power Research Institute (EPRI) and CP&L. The demonstration showed that using a 70° RTD search unit (which was also shown equivalent to a 70° ISwT search unit) in combination with a SLIC40D search unit, flaws in the demonstration test block mockup (EPRI Dwg. No. C047AR4.Dwg) were successfully identified. The 70° RTD search unit was added to enhance detection in a range of depths from 0.00" - 0.15". The shallowest flaw selected by EPRI personnel for the demonstration was a flaw that was 15% of wall thickness, and the maximum amplitudes recorded by the supplemental 70 degree RTD transducer were recorded depths of .01" (from the safe-end side) and .00" (From the nozzle side). The axial flaw of a depth of 15% thickness was detected successfully. The maximum amplitudes were recorded at .00". This clearly demonstrates the ability of the examination system in detecting surface breaking flaws. The demonstration in conjunction with a review of past UT examinations of these welds provide confidence that the examinations can be conducted over the weld circumference without experiencing "lift-off" or "blind spots" within the code required 1/3 thickness examination volume.

If you have any questions regarding this matter, please contact Mr. H. K. Chernoff.

Sincerely,


Timothy P. Cleary
Plant General Manager

ALG/alg

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