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 VISSING, G.S.

SUBJECT: Supplements 980806 relief request with attached table,
 detailing differences between ASME Section XI requirements
 & PDI technique. Approval of relief request #33 by 990301
 would be appreciated.

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ROBERT C. MECREDDY
Vice President
Nuclear Operations

February 9, 1999

U.S. Nuclear Regulatory Commission
Document Control Desk
Attn: Guy S. Vissing
Project Directorate I-1
Washington, D.C. 20555

Subject: Relief Request #33

Dear Mr. Vissing:

On August 6, 1998, RG&E submitted Relief Request No. 33, seeking approval to use the Performance Documentation Initiative (PDI) qualified ISI techniques, rather than those required by the ASME Section XI Code, 1986 Edition, no addenda, paragraph IWA-2232.

By this letter, RG&E is supplementing the August 6, 1998 relief request, with the attached table. This table details the differences between the ASME Section XI requirements and the PDI technique to be use by Framatome Technologies (FTI). As can be seen by this comparison table, the proposed methodology meets or exceeds the Section XI requirements in all areas.

Our third 10-year ISI of the reactor vessel is being performed during the 1999 refueling outage, beginning on March 1, 1999. Expeditious approval of Relief Request #33 by that date would be appreciated.

Very truly yours,

Robert C. Mecreddy

Attachment

xc: Mr. Guy S. Vissing (Mail Stop 14B2)
Project Directorate I-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

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COMPARISONS OF RPV SHELL WELD EXAMINATION TECHNIQUES

Description (Code reference)	Standard Section V,XI, Reg. Guide 1.150 Procedure	FTI PDI/Appendix VIII Qualification Procedure
Examination Angles (Section V, T-441 and T-441.6)	Four transducers required to perform the detection scans 0°, 45° and 60° for Code examination and a 70° L-wave for clad to base metal interface, Reg. Guide 1.150 requirement. Additional transducers used for sizing unacceptable flaws.	Three transducers 45°S, 45°L. and 70°L. 45°L and 70°L to examine the inner 10% of thickness 45°S and 45°L to examine beyond 10% thickness
Calibrations (Section V, T-432 and T-434)	0°, 45°, and 60° calibrated on each ASME calibration standard based on examination thickness range, usually 11.0", 9.0" and 5.0" block. The 70° is calibrated on one calibration standard using 1/16" or 1/8" diameter side drilled holes. Three calibration blocks, ten calibrations.	One calibration standard designed to establish calibrated time base and calibration sensitivity for each transducer using 1/16" or 1/8" diameter side drilled holes. One calibration standard, three calibrations.
Scan Direction (Section V, T-441.4, T-441.5 and T-441.6)	To the extent practical the examination volume is scanned in four directions, two perpendicular and two parallel to the weld axis. The weld metal is scanned with two angles from two opposing directions and the base metal is scanned with two angles but not necessarily from two opposing directions.	The examination volume is scanned in four directions, two perpendicular and two parallel to the weld axis. Sizing is performed from both sides of the flaw when possible.
Scan Sensitivity (Section V, T-425)	Section XI, +6dB beyond 25% of thickness. Reg. Guide, +14dB for the first 25%	Minimum +20dB at the maximum thickness of the applicable examination volume.
Recording Level	Section XI, 50% DAC. Reg. Guide, 20% DAC for the first 25% of material thickness	70°L – 20% DAC (1/16" dia. SDH cal.) 45°S – 20% DAC, (1/8" dia. SDH cal.) 45°L – 10% DAC, (1/8" dia. SDH cal.)
Scan Index (Section V, T-425)	Minimum 10% overlap (IWA-2232 supplements this requirement to a minimum of 50% overlap)	0.50" for detection and 0.20" sizing
Flaw Sizing (Section V, T-441.8)	Amplitude base sizing at 50% DAC. Tip diffraction as option for flaws determined to exceed IWB-3500 acceptance standards based on amplitude sizing. Requires additional transducers, calibrations, and scanning	Tip diffraction techniques using the same transducers and calibrations used for the initial detection scans. FTI qualified the examination procedure for Supplement 4 and 6 sizing using the same transducers and calibrations used for detection. In addition, FTI qualified a forward scatter time-of-flight diffraction (TOFD) technique for the Supplement 4 examination volume as a supplemental technique.
Scan Speed (Section V, T-425)	Up to 6.0" per second.	Up to 9.0" per second
Procedure Qualification	Transducers capable of detecting the calibration reflectors in the application calibration block.	Performance demonstration using cracks (PDI). Qualified on 12.0" thick samples containing a 12.0" wide band of manual clad 0.44" thick.
Data Analyst	Certified Level II per Code of record.	A minimum of a certified Level II qualified by performance demonstration using cracks.