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SUBJECT: Responds to RAI for GL 92-01, Rev 1, "Reactor Vessel
 Structural Integrity."

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September 21, 1993
G02-93-236

Docket No. 50-397

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D.C. 20555

Gentlemen:

Subject: **WNP-2, OPERATING LICENSE NPF-21
RESPONSE TO THE REQUEST FOR ADDITIONAL INFORMATION
FOR GENERIC LETTER 92-01, REVISION 1, "REACTOR VESSEL
STRUCTURAL INTEGRITY"**

Reference: Letter dated July 21, 1993, JW Clifford (NRC) to JV Parrish (SS), "Request for
Additional Information Regarding Generic Letter 92-01, Reactor Vessel Structural
Integrity (TAC No. M83527)"

This submittal provides the Supply System's response to the referenced request for additional information in response to Generic Letter 92-01, Revision 1, "Reactor Vessel Structural Integrity".

The letter provides the information required by the NRC to assess compliance with requirements and commitments regarding reactor vessel integrity. The following provides the information required for each of the identified questions contained in the request for additional information.

Question 2a

Your response to GL 92-01 indicates that the initial upper-shelf energy (USE) values for all beltline materials are not known. A topical report, NEDO-32205 entitled "BWR Owners' Group Topical Report on Upper Shelf Energy Equivalent Margin Analysis" regarding beltline materials with low USE, was submitted by General Electric Corporation on April 30, 1993. You are requested to commit to using this topical report as your licensing bases to demonstrate that all reactor vessel beltline materials that do not have measured USE will meet the requirements of 10 CFR part 50, Appendix G.

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RESPONSE TO THE REQUEST FOR ADDITIONAL INFORMATION FOR GENERIC LETTER 92-01, REVISION 1, "REACTOR VESSEL STRUCTURAL INTEGRITY"

Response

The Supply System is a participating member of the BWR Owners' Group for Upper Shelf Energy Equivalent Margin Analysis. The Owners' Group topical report has not been completed to the satisfaction of the NRC at this time. When the topical report meets the expectations of the Owners' Group and is accepted by the NRC, the Supply System will commit to using this report for our licensing basis to demonstrate that all vessel beltline materials, that do not have measured upper shelf energy (USE), will meet the requirements of 10 CFR Part 50, Appendix G. Contained in the topical report is the evaluation for WNP-2's limiting material. The limiting material meets the minimum margin requirements for BWR-5s identified in the report. Based on the current version of the equivalent margin analysis report, WNP-2's beltline materials, without USE measurements, meet the requirements of 10 CFR 50, Appendix G.

Question 2b

1. Your response to GL 92-01 indicates that values for the initial RT_{NDT} and chemistry data for beltline materials can be found in WNP-2's FSAR Section 5.3.1.5.2.2. The initial RT_{NDT} values for most beltline welds are not specified in the FSAR, rather only the highest RT_{NDT} is given. Provide either the data (the initial RT_{NDT} and chemistry data) for each beltline weld, or the data and analysis from welds that were fabricated using the same vendor, fabrication time frame, fabrication process, and material specification to establish the generic initial RT_{NDT} values for the beltline welds.
2. The copper and nickel values for weld RACO1NMM are .09% and .93%, respectively, in the FSAR, which differ from the corresponding values of .08% and .80% listed in the latest pressure/temperature limits submittal (dated October 27, 1989). Please reconcile this discrepancy.

Response

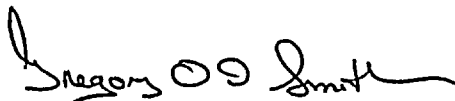
1. As identified in the initial response to Generic Letter 92-01, FSAR Section 5.3.1.5.2.2 contains the information relative to the RT_{NDT} temperatures for WNP-2's reactor pressure vessel. For WNP-2, the limiting material has always been the plate material. As a result, these RT_{NDT} temperatures were chosen to be included in the main FSAR tables. Section 5.3.1.5.2.2 of the FSAR references Supply System letter G02-81-532, G.D. Bouchev to A. Schwencer, "Appendix G and H Information, Response to Materials Engineering Branch -Component Integrity Section," dated December 18, 1981. The letter contains detailed information relative to WNP-2's reactor vessel materials,

RESPONSE TO THE REQUEST FOR ADDITIONAL INFORMATION FOR GENERIC LETTER 92-01, REVISION 1, "REACTOR VESSEL STRUCTURAL INTEGRITY"

including all of the details for the beltline plates and weld materials as provided by GE. Also included in this document is a list of the RT_{NDT} values for the WNP-2 reactor vessel. Attachment 1 contains a simplified listing of the vessel beltline plates, weld metal RT_{NDT} temperatures and weld seams. These values were derived in accordance with GE procedure Y1006A006, which is currently being resubmitted to the NRC by the BWR Owners' Group as a topical report. The procedure provides the methodology used by GE for establishing the RT_{NDT} for plates and weld materials that did not have initial RT_{NDT} temperatures included or transverse impact testing performed. The chemical analyses for these materials are listed in the FSAR in Table 5.3-7.

2. Table 3/4.4.6-1 of the Technical Specification Bases section, that was submitted with the WNP-2 Pressure Temperature Limit Curves identifies a Racal 1NMM filler material containing a copper content of .08% and a nickel content of .80%. The FSAR identifies a Racal 1NMM filler material having a copper content of .09% and a nickel content of .93%. Racal 1NMM is a type of filler material of which three different heats were used for the vessel fabrication. The chemistry value reported in the FSAR table that is identified in question 2b(2) is for Racal 1NMM heat number 5P6756. The Racal 1NMM that was reported in the Technical Specification Bases table to contain .08% copper and .80% nickel is for Racal 1NMM heat number 3P4966. The .08% copper should have been reported as .03%. The difference in the reported percentage is attributed to a typographical error. The table in the bases document will be deleted in the future from the Technical Specifications since it serves no relative purpose in plant operation. The actual chemistries for the filler materials used in the fabrication of the reactor vessel are contained in our letter of December 18, 1981. These values were used in performing the calculations for the pressure/temperature limit curves for WNP-2.

Sincerely,



J. V. Parrish (Mail Drop 1023)
Assistant Managing Director, Operations

TME/bk
Attachments

cc: BH Faulkenberry - NRC RV
NS Reynolds - Winston & Strawn
JW Clifford - NRC
DL Williams - BPA/399
NRC Site Inspector - 901A

ATTACHMENT 1

WNP-2 BELTLINE MATERIALS RT_{NDT} SUMMARY

NOTE: All RT_{NDT}'s are based on GE document Y1006A006

A. Plates

<u>Heat No.</u>	<u>Start RT_{NDT} (°F)</u>
C1272-1	+28
C1272-2	0
C1273-1	+20
C1273-2	+4
B5301-1*	-20
C1336-1	-8
C1337-1	-20
C1337-2	-20

B. Weld Material in Beltline Welds

<u>Heat No./Lot No.</u>	<u>Start RT_{NDT} (°F)</u>	<u>Weld Seams</u>
492L4871/A422B27AF	-50	AB
04T931/A423B27AG	-50	AB
04P046/D217A27A	-48	BA, BB, BD, BF, BH
07L669/K004A27A	-50	BA, BB
C3L46C/J020A27A	-20	BB, BC, BD
08M365/G128A27A	-48	BB
09L853/A111A27A	-50	BC
05P018/D211A27A	-38	BF
624063/C228A27A	-50	BG
624039/D224A27A	-36	BG
624039/D205A27A	-5	BH
5P6756/0342	-0	AB
3P4955/0342	-44	AB
**3P4966/1214*	-26	BA, BB, BC, BD, BE, BF, BG, BH
***3P4966/1214*	-6	AB, BA

* These materials are also in the WNP-2 reactor surveillance program.

** Single Wire Process

*** Tandem Wire Process

