

# Nebraska Public Power District

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NLS950223  
November 20, 1995

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

Gentlemen:

Subject: Six Month Response to Generic Letter 92-01, Revision 1, Supplement 1  
Reactor Vessel Structural Integrity  
Cooper Nuclear Station, NRC Docket 50-298, DPR-46

- References:
1. NRC Generic Letter 92-01, Revision 1, Supplement 1, dated May 19, 1995, "Reactor Vessel Structural Integrity."
  2. Letter from G. R. Horn (NPPD) to NRC dated August 17, 1995, "90-Day Response to Generic Letter 92-01, Revision 1, Supplement 1, Reactor Vessel Structural Integrity."
  3. Letter from J. T. Beckham, Jr. (BWRVIP) to NRC dated August 10, 1995, "BWRVIP Response to NRC Generic Letter 92-01, Revision 1, Supplement 1, Reactor Vessel Structural Integrity."
  4. Letter from J. T. Beckham, Jr. (BWRVIP) to NRC dated November 15, 1995, "BWRVIP Response to Information Requests in NRC Generic Letter 92-01, Revision 1, Supplement 1, Reactor Vessel Structural Integrity."

This letter provides Nebraska Public Power District's (District's) six month response to Generic Letter 92-01, Revision 1, Supplement 1 (Reference 1). This response provides a follow-up to the District's 90-day response (Reference 2), discusses the results of a bounding analysis prepared by General Electric (GE) for the Boiling Water Reactor Vessel & Internals Project (BWRVIP), and specifically, the application of that analysis to Cooper Nuclear Station.

Generic Letter 92-01, Revision 1, Supplement 1 requested licensees to provide within 90 days, a description of actions taken or planned to locate all data relevant to the determination of reactor pressure vessel integrity, or an explanation of why the existing database is considered complete as previously submitted. In Reference 2, the District indicated that it was participating in the BWRVIP effort to assemble and evaluate the information requested in the generic letter as discussed in their August 10, 1995 letter to the NRC (Reference 3). The District also indicated it had re-evaluated its existing Pressure-Temperature (PT) limitation curves using more conservative assumptions and determined that its PT curves would remain valid until completion of the BWRVIP effort.

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Supplement 1 requested in Item 2, an assessment of any change in best-estimate chemistry, and in Item 4, an evaluation of the impact of any changes in best-estimate chemistry on compliance with reactor vessel integrity requirements. As discussed in the BWRVIP report<sup>1</sup> transmitted to the NRC by letter dated November 15, 1995 (Reference 4), the material research and evaluation effort to develop best estimate chemistries could not be completed within the six month required time frame requested by Supplement 1. To support the schedule required to complete this project, the BWRVIP performed a conservative analysis to quantify the impact on existing plant PT curves and applicability of the Upper Shelf Energy (USE) Equivalent Margin Analysis<sup>2</sup> assuming currently available bounding material chemistries which are expected to bound future best estimate chemistries developed through completion of the BWRVIP research effort. The results of this evaluation are detailed in the BWRVIP report which concludes that the USE Equivalent Margin Analysis remains applicable to all BWRs and that no changes to plant PT curves are necessary until completion of efforts to establish best estimate chemistries.

As shown in Table 2-1 of the BWRVIP report, the USE Equivalent Margin Analysis remained applicable to CNS assuming bounding Cu chemistry for its limiting beltline weld. As detailed on page B-5 of the BWRVIP report, evaluation of the CNS PT curves revealed that if bounding vessel weld chemistries were used, there would be an increase in the CNS limiting vessel material adjusted reference temperature (ART) of 16.5° F at a fluence of 18 Effective Full Power Years (EFPY). Specific conservatism in the methodology used to calculate this result is detailed in the footnotes on page B-5 of the report.

Based on these results, the BWRVIP calculated the change in PT curve safety factors. For CNS, the BWRVIP determined that even assuming bounding chemistry values, the potential impact for the CNS PT curves at 18 EFPY would be a reduction in an explicit safety factor of 1.5 to 1.3, and an inherent safety factor of 4.0 to 3.5. Therefore, assuming the aforementioned bounding chemistry values, the impact on PT curve margin would be small.

The District evaluated this data further for CNS. Assuming bounding chemistry values, the District determined that 1) its existing pressure test PT curve would remain valid for the current outage, and 2) the existing operating PT curves and the existing pressure test PT curve corresponding to an ART of 110° F would remain valid through approximately the next two operating cycles. The use of bounding chemistries in the BWRVIP evaluation represents a conservative effort to demonstrate that no immediate BWR reactor vessel integrity concerns exist. Therefore, the BWRVIP evaluation does not constitute the District's basis for demonstration of compliance to 10 CFR 50 Appendix G. No changes to the CNS PT curves are warranted or necessary on the basis of that evaluation.

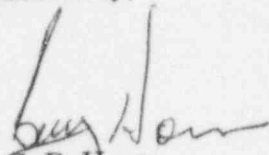
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1. Caine et. al., "BWR Vessel and Internals Project, Bounding Assessment of BWR/2-6 Reactor Pressure Vessel Integrity Issues, (BWRVIP-08)," EPRI TR-105908, 11/95.
  2. Mehta et. al., "10CFR50 Appendix G Equivalent Margin Analysis for Low Upper Shelf Energy in BWR/2 Through BWR/6 Vessels," GE Report NEDO-32205-A, Revision 1, 2/94.

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Finally, as discussed in the BWRVIP report, the BWRVIP is continuing its participation with other industry groups in evaluating use of the ratio procedure discussed in Position 2.1 of Regulatory Guide 1.99, Rev. 2 regarding use of surveillance data. The District is continuing its participation in these BWRVIP efforts.

Please contact me if you require any further information on this matter.

Sincerely,



G. R. Horn  
Vice President - Nuclear

GRH:MJB

cc: Regional Administrator  
USNRC - Region IV

Senior Resident Inspector  
USNRC - Cooper Nuclear Station

Senior Project Manager  
USNRC-NRR Project Directorate IV-1

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Correspondence No: NLS950223

The following table identifies those actions committed to by the District in this document. Any other actions discussed in the submittal represent intended or planned actions by the District. They are described to the NRC for the NRC's information and are not regulatory commitments. Please notify the Licensing Manager at Cooper Nuclear Station of any questions regarding this document or any associated regulatory commitments.

COMMITMENT	COMMITTED DATE OR OUTAGE
None	N/A