



Nebraska Public Power District
Nebraska's Energy Leader

NLS2002039
March 28, 2002

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555-0001

Gentlemen:

Subject: Boiling Water Reactor Vessel and Internals Project (BWRVIP) Program Issues
Cooper Nuclear Station
NRC Docket 50-298, DPR-46

- References:
1. "BWRVIP-94: BWR Vessel and Internals Project Program Implementation Guide," EPRI 1006288, August 2001.
 2. "BWR Vessel and Internals Project Technical Basis for Revisions to Generic Letter 88-01 Inspection Schedules (BWRVIP-75)," EPRI TR-113932, October 1999.
 3. "BWR Vessel and Internals Project, BWR Integrated Surveillance Program Plan (BWRVIP-78)," EPRI TR-114228, December 1999.
 4. "BWRVIP-86: BWR Vessel and Internals Project, BWR Integrated Surveillance Program Implementation Plan," EPRI Technical Report 1000888, December 2000.
 5. "BWR Vessel and Internals Project BWR Jet Pump Assembly Inspection and Flaw Evaluation Guidelines (BWRVIP-41)," EPRI TR-108728, October 1997.

The purpose of this letter is to provide information requested by the Nuclear Regulatory Commission (NRC) from the Nebraska Public Power District (NPPD) during a March 25, 2002, telephone conversation with the NRC on the implementation of the BWRVIP Program at Cooper Nuclear Station (CNS). The NRC requested that NPPD document actions that will be taken regarding BWRVIP recommendations that have not been satisfactorily addressed at CNS. This information involves BWRVIP recommended examinations and analyses which were not implemented within the two refueling cycles from the date of issuance of the respective BWRVIP document as recommended in Reference 1. The subject discrepancies are identified and described in Attachment 1 with the corresponding corrective actions.

A001

NLS2002039

Page 2 of 2

Several other key topics that were discussed during the March 25, 2002, telephone conversation related to NPPD's implementation of the BWRVIP include:

1. NPPD has not taken a scope reduction in the examination of Inter-Granular Stress Corrosion Cracking susceptible welds as recommended in Reference 2.
2. NPPD will conform to the recommendation for vessel surveillance specimens given in References 3 and 4.
3. NPPD has not performed a qualitative assessment of the jet pump riser elbow to thermal sleeve welds for those welds that have not been examined in accordance with Reference 5. Subsequent to the telephone conference, it was determined that performing the assessment was appropriate, and will be completed by June 27, 2002.

Should you have any questions concerning this matter, please contact Mr. David F. Kunsemiller at (402) 825-5236.

Sincerely,



David Wilson
Vice President- Nuclear

Attachment

cc: Regional Administrator w/attachment
USNRC Region IV

Senior Project Manager w/attachment
USNRC - NRR Project Directorate IV-1

Senior Resident Inspector w/attachment
USNRC

NPG Distribution w/attachment

Records w/attachment

ATTACHMENT 1

This attachment summarizes discrepancies regarding six of the BWRVIP guidelines discussed with the NRC in a telephone conference on March 25, 2002. In addition to the corrective actions provided below, an assessment of conformance to the BWRVIP using industry experts will be conducted. The assessment will be completed by May 30, 2002. Discrepancies with BWRVIP recommendations identified during the assessment will be entered into the corrective action program, and reported to the NRC, as appropriate.

NPPD used the safety assessments contained in References A5 and A6 and additional information from the CNS Probabilistic Risk Assessment to assess the increase in Core Damage Frequency (CDF) due to these discrepancies. The collective increase in CDF is less than the screening value of $1E-6$ /yr. Accordingly, these discrepancies pose a negligible risk to public health and safety.

BWRVIP-18: BWR Core Spray Internals Inspection and Flaw Evaluation Guidelines

Date of Issuance: July 1996

Discrepancy: Reference A1 recommends an examination of the P1 weld (hidden). However, there is no technique to interrogate the P1 weld. In lieu of performing an examination of the P1 weld, the BWRVIP allows an enhanced VT-1 (EVT-1) examination to be performed on the top and bottom surfaces of the junction box. The BWRVIP also allows a qualitative assessment of the thermal sleeve integrity based on a plant specific evaluation of similar core spray piping welds and a leakage analysis. The alternative recommendations have not yet been performed.

EVT-1 examinations have been conducted at CNS in the vicinity of the junction box (e.g., cover weld (P2) and junction box/piping welds (P3)) during refueling outage since RFO17, with no reported crack indications on the junction box. There has been some cracking in crevice piping welds, notably the P8b and P8a welds. However, the most extensive crack does not challenge the pipe integrity, as described in the Inservice Inspection Summary Report which is being submitted to the NRC by April 1, 2002. There are 40 non-hidden pipe welds, which have been visually examined since the issuance of NRC Bulletin 80-13. Only three of the 40 weld locations have cracks based on the visual and ultrasonic examinations (P8a and P8b inclusive). CNS has also performed Ultrasonic Testing on Core Spray piping welds, where possible, since RFO17.

Actions

1. The Refueling Outage (RFO)20 video tapes for the in-vessel examination of the P2 and P3 junction box welds will be reviewed by a NDT Level III examiner to determine if credit can be taken for an EVT-1 examination of the junction box top and bottom surfaces. This action will be completed by June 27, 2002.
2. An EVT-1 will be performed on the junction box top and bottom surfaces during RFO21 (Spring 2003).

3. A qualitative assessment of the thermal sleeve integrity will be performed based on a plant-specific evaluation of similar core spray piping welds. A leakage analysis in conjunction with the qualitative assessment will be completed by June 27, 2002.

BWRVIP-25: BWR Core Plate Inspection and Flaw Evaluation Guidelines

Date of Issuance: December 1996

Discrepancy: Reference A2 recommends an EVT-1 of the rim hold-down bolts from below the core plate. This examination has not been performed as recommended in reference A2 due to access restrictions.

Most BWRs, including CNS, have performed visual examinations of the hold-down bolts from above the core plate as described in Reference A7. There have not been indications or reported failures of the rim hold-down bolts based on these visual examinations. Furthermore, the cracking of core shroud horizontal welds H-5/H6a in the vicinity of the rim hold-down bolts have been minimal ($\leq 5\%$). These welds are exposed to the same environment as the rim hold-down bolts.

Actions:

1. A site-specific analysis will be performed to determine if the core plate rim hold-down bolts are required to provide lateral support of the core plate during a seismic event. This analysis will be completed by June 27, 2002.
2. If a critical number of rim hold-down bolts are required, as determined by the above analysis, then an alternative examination will be developed and implemented during RFO21. If the subject alternative examination cannot be developed, then the NRC and the BWRVIP will be notified.

BWRVIP-26: BWR Top Guide Inspection and Flaw Evaluation Guidelines

Date of Issuance: December 1996

Discrepancy: Inspections were not implemented within the recommended two cycles.

Action:

1. Inspections were performed during RFO20 in accordance with the recommendations of the subject BWRVIP. No further corrective actions are required.

BWRVIP-27: BWR Standby Liquid Control System/Core Plate dP Inspection and Flow Evaluation Guidelines

Date of Issuance: April 1997

Discrepancy: Reference A3 recommends an enhanced leakage inspection (EVT-2) of the Standby Liquid Control System safe end extension. NPPD has only performed a VT-2 (with the insulation in place) in conjunction with the Class 1 system leakage test.

Extensive examination of other nozzles with 182 material has been performed. There has been no identified cracking. Additionally, there has been no cracking identified from the Generic Letter 88-01 examinations.

Action:

1. An enhanced leakage inspection (insulation removed) of the Standby Liquid Control System safe end extension will be performed in conjunction with the ASME Section XI Class 1 system leakage test during RFO21.

BWRVIP-38: BWR Shroud Support Inspection and Flow Evaluation Guidelines

Date of Issuance: September 1997

Discrepancy: Inspections were not implemented within the recommended two cycles.

Action:

1. Inspections were performed during RFO20 in accordance with the recommendations of the subject BWRVIP. No further corrective actions are required.

BWRVIP-41: BWR Jet Pump Assembly Inspection and Flow Evaluation Guidelines

Date of Issuance: October 1997

Discrepancy: None of the inspections were implemented within the recommended two cycles. Reference A4 recommends the jet pump AD3b weld be EVT-1 examined. During the RFO20 refueling outage it was determined that the AD3b weld was not accessible for the recommended examination.

However, the associated ten AD3a welds were EVT-1 examined with no indications. A total of 117 jet pump circumferential welds were EVT-1 examined during RFO20, in accordance with BWRVIP-41. No indications were identified.

Action:

1. NPPD has discussed the AD3b weld with members of EPRI to determine if any analysis is required due to the inaccessibility of the location. Based on this discussion and NPPD's own assessments, it has been concluded that no additional analysis is required.
2. The inability to perform the examination will be reported to the BWRVIP.

REFERENCES

- A1. "BWR Vessel and Internals Project BWR Core Spray Internals Inspection and Flaw Evaluation Guidelines (BWRVIP-18)," EPRI TR-106740, July 1996.
- A2. "BWR Vessel and Internals Project BWR Core Plate Inspection and Flaw Evaluation Guidelines (BWRVIP-25)," EPRI TR-107284, December 1996.
- A3. "BWR Vessel and Internals Project BWR Standby Liquid Control System/Core Plate dP Inspection and Flaw Evaluation Guidelines (BWRVIP-27)," EPRI TR-107286, April 1997.
- A4. "BWR Vessel and Internals Project BWR Jet Pump Assembly Inspection and Flaw Evaluation Guidelines (BWRVIP-41)," EPRI TR-108728, October 1997.
- A5. "BWR Vessel and Internals Project Safety Assessment of BWR Reactor Internals (BWRVIP-06)," EPRI TR-105707, October 1995.
- A6. "BWR Vessel and Internals Project Quantitative Safety Assessment of BWR Reactor Internals (BWRVIP-09)," EPRI TR-106369, May 1997.
- A7. "BWR Vessel and Internals Project BWRVIP Inspection Trends (BWRVIP-91)," EPRI Technical Report 100178, June 2001.

ATTACHMENT 3 LIST OF REGULATORY COMMITMENTS

Correspondence Number: NLS2002039

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 for information only and are not regulatory commitments. Please notify the NL&S Manager at Cooper Nuclear Station of any questions regarding this document or any associated regulatory commitments.

COMMITMENT	COMMITTED DATE OR OUTAGE
NPPD will conform to the recommendation for vessel surveillance specimens given in BWRVIP-78 and BWRVIP-86.	None
A qualitative assessment of the jet pump riser elbow to thermal sleeve welds will be performed for those welds that have not been examined in accordance with BWRVIP-41.	June 27, 2002
An assessment of conformance to the BWRVIP using industry experts will be conducted.	May 30, 2002
Discrepancies with BWRVIP recommendations identified during the assessment will be reported to the NRC, as appropriate.	None
The RFO20 video tapes for the in-vessel examination of the P2 and P3 junction box welds will be reviewed by an NDT Level III examiner to determine if credit can be taken for an EVT-1 examination of the junction box top and bottom surfaces.	June 27, 2002
An EVT-1 will be performed on the junction box top and bottom surfaces.	RFO21 (Spring 2003)
A qualitative assessment of the thermal sleeve integrity will be performed based on a plant-specific evaluation of similar core spray piping welds. A leakage analysis in conjunction with the qualitative assessment will be completed.	June 27, 2002
A site-specific analysis will be performed to determine if the core plate rim hold-down bolts are required to provide lateral support of the core plate during a seismic event.	June 27, 2002
If a critical number of rim hold-down bolts are required, as determined by the [site-specific] analysis, then an alternative examination will be developed and implemented during RFO21. If the subject alternative examination cannot be developed, then the NRC and the BWRVIP will be notified.	RFO21 (Spring 2003)

ATTACHMENT 3 LIST OF REGULATORY COMMITMENTS

COMMITMENT	COMMITTED DATE OR OUTAGE
An enhanced leakage inspection (insulation removed) of the Standby Liquid Control System safe end extension will be performed in conjunction with the ASME Section XI Class 1 system leakage test during RFO21.	RFO21 (Spring 2003)
The inability to perform the [AD3b weld] examination will be reported to the BWRVIP.	None