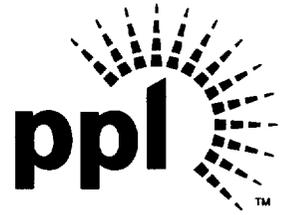


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**SUSQUEHANNA STEAM ELECTRIC STATION
UNIT 2 CORE SHROUD INSPECTION DATA
RE-ANALYSIS AND RE-INSPECTION
SCHEDULE PURSUANT TO BWRVIP-76
PLA-5234**

Docket No. 50-388

This letter provides a summary of a re-analysis that was performed by PPL Susquehanna, LLC (PPL) on the Unit 2 core shroud weld inspection data obtained during the Unit 2 ninth refueling and inspection outage and previous refueling and inspection outages. The letter also provides a weld re-inspection schedule that is based on the results of the re-analysis. The re-analysis and revised weld re-inspection schedules comply with methodology identified in BWRVIP-76, issued in November 1999. These re-analyses are being submitted in accordance with the reporting requirements of BWRVIP-76, in that results of analyses performed using the BWRVIP-76 guidance are to be provided to the NRC.

If you have any questions concerning this letter please contact Mr. R. D. Kichline at 610-774-7705.

Sincerely,



R. G. Byram

cc: NRC Region I
Mr. R. G. Schaaf, NRC - Sr. Project Manager
Mr. S. L. Hansell, NRC Sr. Resident Inspector

A001

RE-EVALUATION OF THE UNIT 2 CORE SHROUD WELDS AND RE-INSPECTION INTERVAL

Discussion

In November 1999, BWRVIP-76 (BWR Core Shroud Inspection and Flaw Evaluation Guidelines/TR-114232) was issued which allowed removal of the high fluence material from the methodology used to determine the "End of Interval" (EOI), or the interval between weld inspections, to a maximum of ten (10) years. The BWRVIP-76 methodology left low fluence material in the weld which could be analyzed using limit load analysis techniques.

Four Unit 2 core shroud horizontal welds and 5 vertical welds were inspected during the Unit 2 ninth refueling and inspection outage (March - April 1999). The remaining Unit 2 core shroud horizontal welds were inspected in previous refueling and inspection outages. The EOI's for the Unit 2 welds were determined by methodologies described in the then existing BWRVIP-07 document, which required a Linear Elastic Fracture Mechanics (LEFM) analysis to be performed on welds which experienced fluences above $3E20$ n/cm².

Core Shroud Re-analysis Results and Re-inspection Interval

Using the BWRVIP-76 document, weld re-inspection intervals for the Unit 2 core shroud welds have been developed. Re-inspection intervals are either based on Table 2-1 of BWRVIP-76, or on a specific limit load analysis that was performed in accordance with the methodology described in the document. The following provides the latest weld inspection results and a weld re-inspection schedule for each weld.

Horizontal Weld Results

1. H1 was last inspected in 1999 and was found to have 3.34% of the inspected weld flawed. Based on this result the EOI is 10 years; therefore, the weld is required to be re-inspected in 2009.
2. H2 was last inspected in 1999 and was found to have 29.22% of the inspected weld flawed. A specific limit load analysis was performed on this weld and the EOI was predicted to be 10 years; therefore, the weld is required to be re-inspected in 2009.

3. H3 was inspected in 1995 and was found to have 0% cracking. Based on this result the EOI is 10 years; therefore, the weld is required to be re-inspected in 2005.
4. H4 (only Unit 2 horizontal weld having high fluence) was last inspected in 1999 and was found to have 47.58% of the inspected weld flawed. A specific limit load analysis was performed on this weld and the EOI was predicted to be 10 years; therefore, the weld is required to be re-inspected in 2009.
5. H5 was inspected in 1995 and was found to have 1.59% of the inspected weld flawed. Based on this result the EOI is 10 years; therefore, the weld is required to be re-inspected in 2005.
6. H6A was inspected in 1995 and was found to have 0% defects. Based on this result the EOI is 10 years; therefore, the weld is required to be re-inspected in 2005.
7. H6B was last inspected in 1999 and was found to have 39.85% of the inspected weld flawed. A specific limit load analysis was performed on this weld and the EOI was predicted to be 10 years; therefore, the weld is required to be re-inspected in 2009.
8. H7 was inspected in 1995 and was found to have 0% defects. Based on this result the EOI is 10 years; therefore, the weld is required to be re-inspected in 2005.
9. H8 was inspected in 1997 and was found to have 0% defects. Based on this result the EOI is 10 years; therefore, the weld is required to be re-inspected in 2007.
10. H9 was inspected in 1997 and was found to have 0% defects. Based on this result the EOI is 10 years; therefore, the weld is required to be re-inspected in 2007. However, PPL may elect to inspect this weld for vertical weld cracking in 2001. This inspection would be predicated on recommendations resulting from evaluations performed on the Tsuruga Nuclear Power Plant's Core Shroud H9 weld cracks, identified during their core shroud replacement.

Vertical Weld Results

Vertical weld inspections and analyses are required to be based on either the BWRVIP-63 or BWRVIP-76 documents. Using the draft versions of these documents, PPL inspected and analyzed five vertical welds in 1999. No vertical weld cracking was found on any of the inspected welds.

In PPL letter from Mr. R. G. Byram to the USNRC titled "Unit 2 9th Refueling and Inspection Outage Core Shroud Inspection Results" dated 8/5/1999, (PLA-5092), PPL stated that two Unit 2 core shroud vertical welds could not be inspected. These two

vertical welds (H6B/H7 at 90 and 270 degrees), however, intersected defects in the H6B horizontal weld. PPL also analyzed these two vertical welds and concluded that adequate margin existed for these welds to support the operation of Unit 2 through the end of the next operating cycle (ending in the spring of 2001). PPL has subsequently re-analyzed these two vertical welds, utilizing the methodologies identified in BWRVIP-76, and has concluded that adequate margin exists in these two vertical welds to support the operation of Unit 2 through the next two operating cycles (ending in the spring of 2003).

Therefore, vertical welds not previously inspected, or those failing the acceptance criteria of BWRVIP-76, will be inspected during the next inspection of the horizontal welds. Analysis of the vertical weld inspection data will be in accordance with BWRVIP-76.