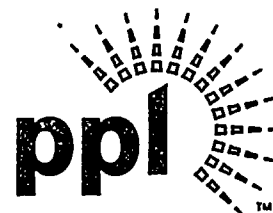


Robert G. Byram
Senior Vice President
Generation and Chief Nuclear Officer
Tel. 610.774.7502 Fax 610.774.5019
E-mail: rgbyram@papl.com

PP&L, Inc.
Two North Ninth Street
Allentown, PA 18101-1179
Tel. 610.774.5151
http://www.papl.com/



AUG 05 1999

U. S. Nuclear Regulatory Commission
Attn.: Document Control Desk
Mail Station OP1-17
Washington, D. C. 20555

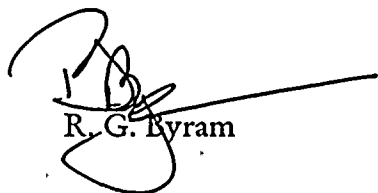
SUSQUEHANNA STEAM ELECTRIC STATION
UNIT 2 9TH REFUELING AND INSPECTION
CORE SHROUD INSPECTION RESULTS
PLA-5092

Docket No. 50-388

This letter provides a summary of the results and analyses of inspections performed on the Unit 2 core shroud during the Unit's 9th refueling and inspection outage (3/99 - 4/99). These inspections and analyses complied with the pertinent BWRVIP documents related to reinspection of core shrouds.

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

Sincerely,


R. G. Byram

Attachment

copy: NRC Region I
Mr. V. Nerses, NRC Sr. Project Manager - OWFN
Mr. S. L. Hansell, NRC Sr. Resident Inspector - SSES

9908120026 990805
PDR ADOCK 05000388
Q PDR

11
A001

U2-9RIO Refueling and Inspection Outage Core Shroud Re-inspection Results

The following is a summary of the core shroud horizontal and vertical weld inspections that were performed during the Unit 2 9th refueling and inspection outage (RIO), and the results of the analysis performed to determine remaining safety factors. The previous inspection of the Unit 2 SSES shroud occurred in the fall of 1995 during the Unit 2-7RIO (two fuel cycles ago). At that time, based on the then current analysis required by the BWRVIP, it was predicted that reinspection should take place in the 1999 outage year (See PLA-4552 dated January 29, 1997).

Inspections Performed

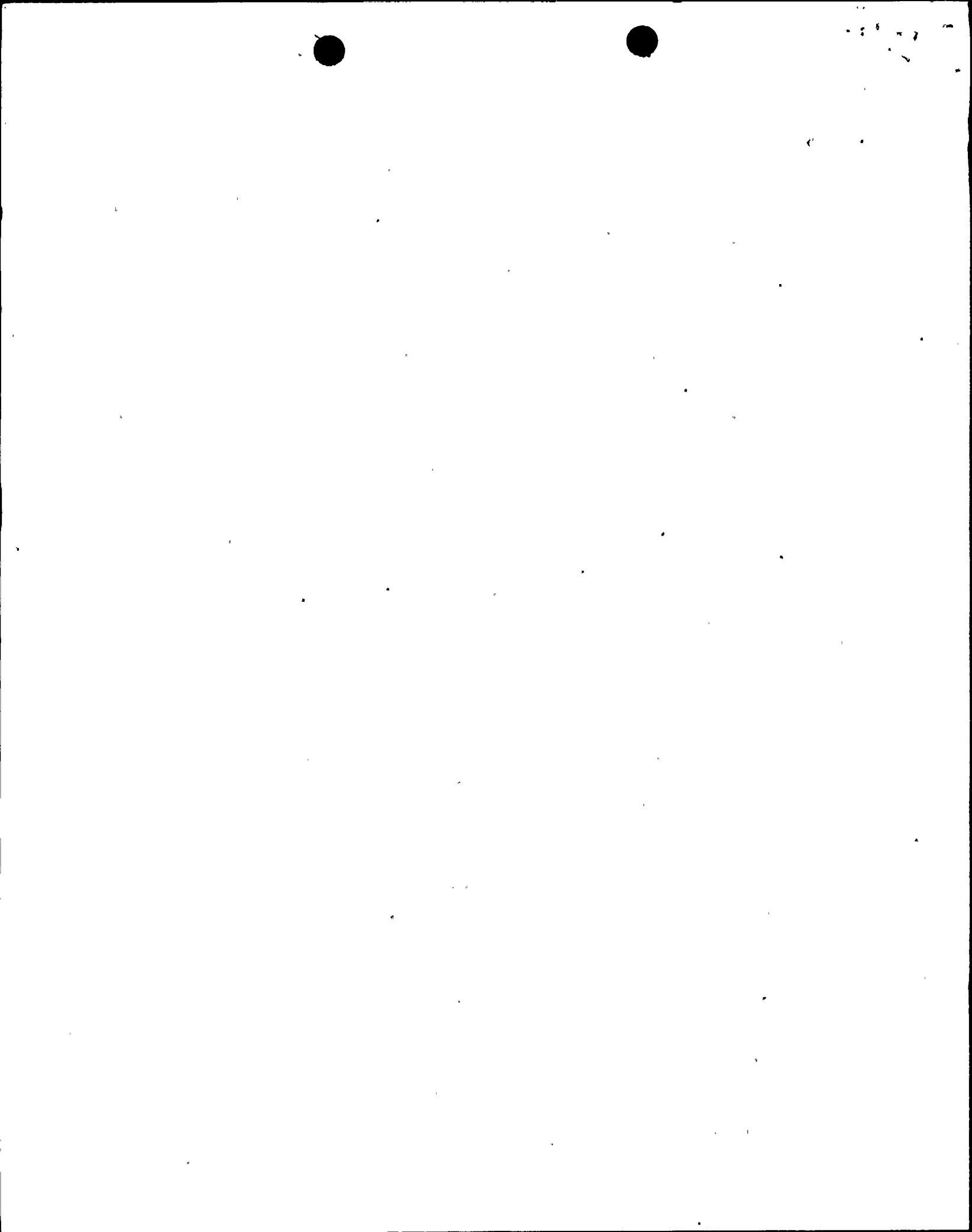
The following welds were examined using ultrasonic examination techniques.

1. H1 was examined covering 79.62% of the total weld.
2. H2 was examined covering 79.99% of the total weld.
3. H4 was examined covering 86.02% of the total weld.
4. H6B was examined covering 85.99% of the total weld.
5. The following vertical welds were examined over 100% of their lengths:
 - H1/H2 at the 90 and 270 degree azimuth locations
 - H3/H4 at the 45 degree azimuth location
 - H4/H5 at the 0 and 180 degree azimuth locations

Inspection Analysis Results

Analysis of the defects was performed for each of the respective welds using currently accepted techniques approved by the BWRVIP. Safety factors for all of the welds were calculated for 10 years of additional service except H4, which was analyzed for 2 years of service. No safety factors were found to be less than the 2.78 for the Upset stress condition or 1.39 Faulted condition necessary for continued operation.

1. H1: 3.34% of the weld was found flawed. Calculated safety factors (SF) for an additional 10 years of service were found to be 54.5 for Upset Limit Load (ULL) and 26.2 for Faulted Limit Load (FLL) analysis.
2. H2: 29.22% of this weld was found flawed. Calculated safety factors for an additional 10 years of service were found to be 18.0 for ULL and 9.0 for FLL analysis.



3. H4: 47.58% of this weld was found flawed. Calculated safety factors for an additional 2 years of service were found to be 6.4 for ULL and 3.4 for FLL analysis. Linear Elastic Fracture Mechanics (LEFM) analysis was performed on this weld because fluences exceeded $3E20$ n/cm². This analysis determined that the Upset SF was 3.9 and the Faulted SF was 2.4.
4. H6B: 39.85% of this weld was found flawed. Calculated safety factors for an additional 10 years of service were found to be 3.4 for ULL and 2.2 for FLL analysis.
5. Vertical welds examined (H1/H2 at 90 and 270 degrees, H3/H4 at 45 degrees, H4/H5 at 0 and 180 degrees): No defects were found in any of the five vertical welds examined .
6. Unexamined vertical welds (H6B/H7 at 90 and 270 degrees): These two vertical welds could not be examined, but intersected horizontal defects in the H6B weld. An analysis was performed using techniques developed in the BWRVIP program to determine safety factors assuming 100% of each of these vertical welds were defective. The analysis was performed for a two year operating cycle and it was determined that adequate margins exist for operation for two years.

