



June 2, 1995

U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Attn: Document Control Desk

Subject: Quad Cities Nuclear Station Unit 2  
Core Shroud Examination Final Results  
NRC Docket No. 50-265

- References:
1. NRC Generic Letter 94-03, "Intergranular Stress Corrosion Cracking of Core Shrouds in Boiling Water Reactors".
  2. BWRVIP document GENE-523-113-0894, BWR Core Shroud Inspection and Evaluation Guidelines, dated September 1994.
  3. BWRVIP Core Shroud NDE Uncertainty and Procedure Standard, dated November 21, 1994.
  4. J.L. Schrage (ComEd) to USNRC letter, Quad Cities Station Unit 2 Core Shroud Inspection Plan, dated January 16, 1995.

The purpose of this letter is to provide the final results of the subject core shroud examinations. The examinations were performed in conjunction with the comprehensive shroud repair to assure that structural integrity of the core shroud is maintained. The examinations of the reactor core shroud were performed in accordance with ComEd's commitment to NRC Generic Letter 94-03 (references 1 and 4) and BWRVIP guidelines (references 2 and 3). The results of these examinations indicate that the observed stress corrosion cracking (SCC) at Quad Cities Unit 2 is substantially less than that observed at other similar units. The examinations were performed April 13 through April 20, 1995 and May 16 through May 21, 1995.

The core shroud examinations consisted of performing ultrasonic examination (UT) of the vertical shroud welds which were accessible to the scanner system. In addition, visual examinations were performed on the accessible surfaces of the shroud head flange ring, the top guide support ring, the core plate support ring and shroud vertical welds which were not UT examined.

It should be noted that the ring segment welds associated with the shroud head flange ring, the top guide support ring and the core plate support ring were not visually located due to machining of the rings/welds during original fabrication. Therefore, all accessible surfaces of the rings were visually examined.

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The scope of the examinations and results were as follows:

- o Ultrasonic examination of the shroud vertical welds (V14 through V19) located between horizontal welds H3/H4 and H4/H5 (i.e. beltline region). The examinations resulted in no reportable indications.
- o Enhanced visual examination of the shroud head flange ring, top guide support ring, core plate support ring, shroud vertical welds (V5-V7 and V26-V28, inclusive) and the shroud repair hardware attachment sites at the jet pump support plate. The examinations resulted in a total combined crack length of 51" with the longest observed crack 24" in length.

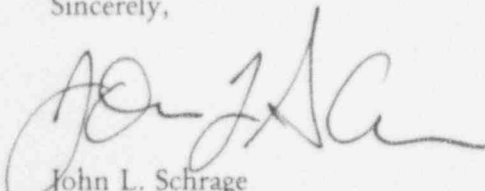
In conclusion, the indications observed on the core plate support ring vertical (OD) surface result in a total combined crack length of 51" or approximately 15% of the area examined. The observed SCC is considerably less than that observed at other units of this vintage. As expected, the indications are associated with the heat affected zone (HAZ) of horizontal weld H5. The installed shroud repair has been designed to structurally replace the shroud horizontal welds.

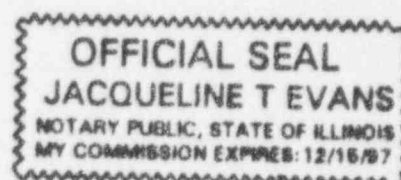
The attached table and sketch provide specific details of the areas examined and the results of the examinations.

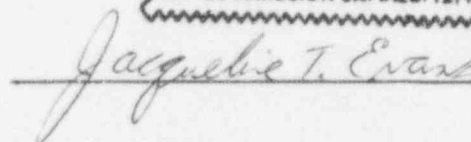
To the best of my knowledge and belief, the analyses and evaluations contained in these documents are true and correct. In some respects these documents are not based on my personal knowledge, but on information furnished by other Commonwealth Edison employees, contractor employees, and/or consultants. Such information has been reviewed in accordance with company practice, and I believe it to be reliable.

If there are any questions concerning this matter, or need for further clarification, please contact this office.

Sincerely,

  
John L. Schrage  
Nuclear Licensing Administrator



 6/2/95

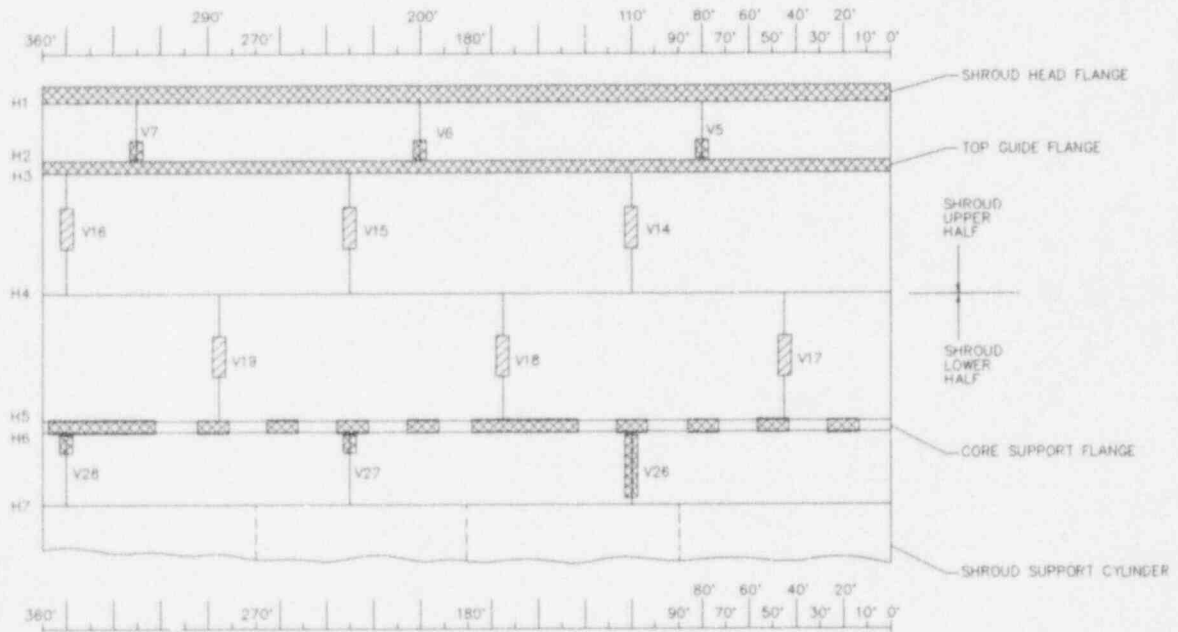
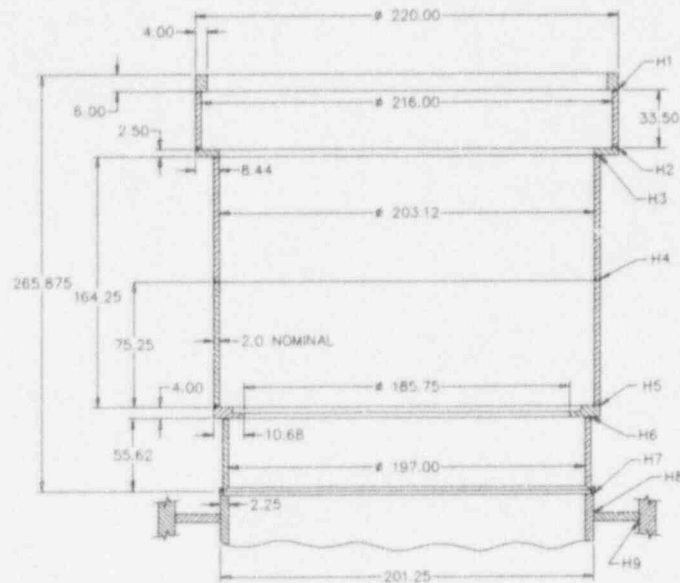
Attachment  
Figure

cc: J. B. Martin, Regional Administrator - RIII  
R. M. Pulsifer, Project Manager - NRR  
C. G. Miller, Senior Resident Inspector - Quad Cities  
Office of Nuclear Facility Safety - IDNS

**ATTACHMENT**  
**Core Shroud Examination Summary**

Component	Area Inspected	Inspection Results
Shroud Head Flange Ring H1	Visually examined 100% of accessible surfaces or 72% (499") of OD, 100% (665") of ID and 100% (690") of Top of ring.	3/4" long indication at 290° in steam dam to ring fillet weld.
Top Guide Support Ring H2-H3	Visually examined 100% of accessible surfaces or 100% (690") of OD and 100% (690") of Bottom of ring.	No Reportable Indications
Core Plate Support Ring H5-H6	Visually examined 100% of accessible surfaces or 55% (356") of OD and 55% (356") of Bottom of ring.  Approximately 15% (51") of area examined has indications in the HAZ associated with the H5 horizontal weld.	2" long circ. indication at 20° 24" long circ. indication at 45° 10" long circ. indication at 80° 6" long circ. indication at 143° 1" long circ. indication at 200° 8" long circ. indication at 350° 3 axial indications at 163°, 1/4" to 1/2" in length at toe of H5
Vertical Welds V5, V6 and V7	Visually examined at least 12" or 36% of each weld, inspected OD surface, ID not accessible.	No Reportable Indications
Vertical Welds V14, V15, V16, V17, V18 and V19	Ultrasonically examined 27" or greater than 30% of each weld.	No Reportable Indications
Vertical Welds V26, V27 and V28	Visually examined at least 12" or 22% of each weld, inspected OD surface, ID not accessible.	No Reportable Indications
Shroud Ledge to Shroud H8 Weld	10" of weld in area of repair attachments at 4 locations; 20°,110°, 200°,290° azimuths.	No Reportable Indications
Shroud Ledge to RPV H9 Weld	12" of weld in area of repair attachments at 4 locations; 20°,110°, 200°,290° azimuths.	No Reportable Indications
Shroud Ledge in Area of Repair Attachments	Examined face of plate in area of repair attachments; approximately 150 square inches at 4 locations; 20°,110°, 200°,290° azimuths.	No Reportable Indications

# FIGURE



 - DENOTES AREAS VISUALLY EXAMINED  
 - DENOTES AREAS ULTRASONICALLY EXAMINED

**ComEd**

Q2R13 EXAMINATIONS  
OF CORE SHROUD  
QUAD CITIES UNIT 2