

AUG 27 1979

Docket No. 50-280

LICENSEE: Virginia Electric and Power Company

FACILITY: Surry Power Station, Unit Nos. 1 &amp; 2

SUBJECT: SUMMARY OF MEETING HELD ON AUGUST 8, 1979, TO DISCUSS FEEDWATER LINE CRACKS

The subject meeting was held with VEPCO and Westinghouse to discuss the cracked feedwater lines at Surry Unit 1. A list of attendees is attached.

Highlights of the meeting are summarized below.

On June 22, 1979, cracking was disclosed at the reducer side of the reducer to steam generator welds by radiography in accordance with the requirements of ASME Code, Section III. The balance of reducer to steam generator nozzles on Unit 1 and Unit 2 were subsequently radiographed and cracking was discovered in all the fittings. The balance of welds in the feedwater lines of Unit 1 between the steam generator nozzles and the containment penetrations were radiographed. Seven rejectable indications were revealed by the more sensitive radiography. The indications were identified as original fabrication discontinuities.

The reducers were removed from Unit 1 and sent to Westinghouse for metallurgical analysis. From the work performed to date, Westinghouse reported that the major cracks in the Loop "B" reducer examined were located at the 64° and 121° positions with 0° located at 12 o'clock. The deepest crack was 0.080 inches with the remainder being less the 0.040 inches. The mode of failure was characterized as corrosion assisted fatigue by Westinghouse. Stress analyses were performed by Westinghouse on the feedwater lines. The results of the stress analyses indicate that loads were within the Code allowable limits.

The licensee is replacing the reducers with new fittings. The new fittings are of the same material as the originals but with a larger radius in the counter bore transition region. The reducer to nozzle welds will be stress relieved following welding. The licensee has removed the very shallow indications in the nozzles by flapper wheel grinding. The licensee is repairing the indicators found in the other welds in the feedwater lines. Radiography and ultrasonic inspection will be performed following welding and stress relieving to establish the repairs as acceptable and as a baseline for future inspections. The licensee stated that radiography and ultrasonic inspections will be performed of the reducer-to-nozzle vicinity at the next refueling outage.

KB.  
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The licensee is a member of the Westinghouse Owner's Group addressing the feedwater line cracking problem and will be cognizant of the results of the testing and analyses performed.

At the conclusion of the meeting, the NRC staff stated that the actions being taken by the licensee were acceptable for restart of Unit 1 provided that the following are accomplished prior to startup:

1. The licensee should submit a report documenting and summarizing the inspection and repair, including the results of a 10 CFR 50.59 determination as to whether any unreviewed safety question has been introduced by the repairs. The repair should include:
  - a. The nature and extent of cracking,
  - b. an interim metallurgical evaluation; modes of failure;
  - c. a summary of the stress analysis,
  - d. feedwater chemistry information,
  - e. corrective actions taken,
  - f. a safety evaluation.
2. RT of the reducer welds should be conducted after postweld heat treatment.
3. A baseline RT and UT should be obtained.
4. The licensee should provide a commitment to conduct an RT and UT inspection of the reducer welds at the next refueling outage.

In addition to the above, the staff requested that the licensee provide a copy of the final metallurgical report when completed. The staff also requested that the licensee provide a time/temperature history of the hot functional testing for Unit 2 as well as provide a cracked reducer from Unit 2 for independent evaluation by the NRC.

Original Signed By

Don Neighbors, Project Manager  
Operating Reactors Branch #1  
Division of Operating Reactors

Attachment: List of attendees

cc: w/enclosure  
See next page

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# LIST OF ATTENDEES

May 8, 1979 Meeting

## NRC

E. Reeves  
R. Iberman  
W. Collins  
T. Liu  
R. Klecker  
M. Boyle  
C. Sellers

## VEPCO

D. Benson  
R. Saunders

## WESTINGHOUSE

D. Marburger  
J. Campbell  
T. Campbell  
D. White

OFFICE >

SURNAME >

DATE >

Meeting Summary for  
Surry Unit 1

Docket File

NRC PDR

Local PDR

NRR Reading

ORBI Reading

H. Denton

E. Case

D. Eisenhut

G. Zech

W. Gammill

J. Miller

L. Shao

R. Vollmer

W. Russell

B. Grimes

T. J. Carter

T. Ippolito

R. Reid

A. Schwencer

D. Ziemann

V. Noonan

P. Check

G. Lainas

G. Knighton

Chief, Systematic Evaluation Branch

Project Manager

DOR Licensing Assistant

OELD

OI&E (3)

R. Fraley, ACRS (16)

Program Support Branch

TERA

J. R. Buchanan

NRC Participants

Short Service List



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

August 27, 1979

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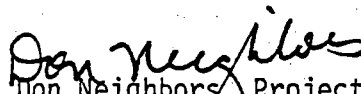
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Don Neighbors, Project Manager  
Operating Reactors Branch #1  
Division of Operating Reactors

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D. Benson  
R. Saunders

WESTINGHOUSE

D. Marburger  
J. Campbell  
T. Campbell  
D. White

Mr. W. L. Proffitt  
Virginia Electric and Power Company

cc: Mr. Michael W. Maupin  
Hunton and Williams  
Post Office Box 1535  
Richmond, Virginia 23213

Swem Library  
College of William and Mary  
Williamsburg, Virginia 23185

Donald J. Burke  
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Region II  
Office of Inspection and Enforcement  
101 Marietta Street, Suite 3100  
Atlanta, Georgia 30303