

U.S. NUCLEAR REGULATORY COMMISSION  
OFFICE OF INSPECTION AND ENFORCEMENT

REGION II

Report No.: 50-281/79-30

Docket No.: 50-281

License No. DPR-37

Licensee: Virginia Electric and Power Company  
P.O. Box 26666  
Richmond, VA 23261

Facility Name: Surry Power Station, Unit 2

Inspection At: Surry Site near Williamsburg, VA

Inspection Conducted: April 18-20, 1979

Inspectors: *C. M. Erb*  
C. M. Erb

5/1/79

*H. H. Livermore*  
H. H. Livermore

5/1/79

Approved by: *D. H. Danielson*  
D. H. Danielson, Chief  
Engineering Support Section 2, RIII

5/1/79

*A. R. Herdt for*  
A. R. Herdt, Chief  
Projects Section, RII

5/8/79

Inspection Summary

Inspection on April 18-20, 1979, (Report No. 50-281/79-30)

Areas Inspected: Observation of removal activities, observation of welding operations, and review of welding procedures for steam generator replacement. Inspection involved a total of 42 inspector hours onsite by two NRC inspectors.

Results: No items of noncompliance or deviations were identified.

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## DETAILS

### Persons Contacted

#### Licensee Personnel (VEPCo)

\*W. L. Stewart, Station Manager  
A. L. Parrish, III, Project Manager  
W. L. Byrd, Welding Supervisor  
C. Embler, Welding Engineer  
\*J. B. Goodson, Q. C. Engineer

\*Denotes those present at the exit interview.

### Functional or Program Areas Inspected

#### 1. Observation of Removal Activities

After securing No Escort Badges, the NRC inspectors donned protective clothing and went into the containment. A completely enclosed walkway outside the building was used from the change room to the equipment hatch opening in containment.

The girth cut for the third steam generator had been made using the plasma arc process and the upper shell was being lifted off. Health physics took radiation readings as soon as the steam separating internals were exposed. The levels were such that no masks were required. After observing operations for 1 hour and climbing to the top of the opened steam generator, less than 20 M rem was indicated on the dosimeters worn by the inspectors. Protective hoods are worn by grinders and welders. Containment walls and the outside of equipment were scrubbed down prior to starting the modification work, which partially accounts for lack of radiation problems.

A briefing was held in the site mockup building where the sequence of cutting and removing the steam generator primary piping was discussed.

A tour of the weld training shop provided the NRC inspectors with a visual demonstration of the Diametric Automatic TIG process for re-welding the primary steam generator piping.

No items of noncompliance or deviations were identified in the areas observed.

## 2. Observation of Welding Operations

A special building has been set up where the stainless steel fittings removed from the primary recirculation system will be built up with weld where required and then machined to dimension with weld preps. There are three fittings for each loop, one fitting is removed from the hot leg and two fittings from the cold leg. The licensee reported that decontamination of the fittings was performed by a reverse plating process and that 6 R readings had been reduced to 2 MR. Examination of a fitting showed a bright reflective surface where original grinding marks were clearly visible. This fitting bore an ESCO stamp and CF8M marking indicating manufacture by Electric Steel Company and stainless steel type 19 Cr 10 Ni.

A weld build up was observed being made on a stainless steel fitting utilizing cooling coils in the weld area to minimize temperature rise in the base metal since a 350°F maximum interpass temperature is specified when welding stainless steel. No items of noncompliance or deviations were identified in the areas observed.

## 3. Review of Weld Procedures

The inspectors reviewed the following procedures:

- WPS 88-B-22, Rev. 1
- WPS 88-B-21
- WPS 45-45-B-2
- WPS E8018, NM81534
- WPS E8018-G

Chicago Bridge & Iron will use WPS E8018-G to weld together the top and bottom shell of the steam generator which will require both preheat and a post heat treatment. This welding will conform to the requirements of ASME Section IX, 1977 Edition with Summer 1978 Addenda.

No items of noncompliance or deviations were identified in the procedures reviewed.

## Exit Interview

The inspector met with licensee representative (denoted in the Persons Contacted paragraph) at the conclusion of the inspection on April 20, 1979. The inspectors summarized the scope and findings of the inspection.