



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA ST., N.W., SUITE 3100
ATLANTA, GEORGIA 30303

Report No. 50-281/80-39

Licensee: Virginia Electric & Power Company
Richmond, VA 23261

Facility Name: Surry 2

Docket No. 50-281

License No. DPR-37

Inspection at Surry site near Williamsburg, VA

Inspectors: <u>H. L. Whitener</u>	<u>11/12/80</u>
H. L. Whitener	Date Signed
<u>D. R. Quick</u>	<u>11/12/80</u>
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<u>R. Butcher</u>	<u>11/12/80</u>
R. Butcher	Date Signed
Approved by: <u>D. R. Quick</u>	<u>11/12/80</u>
D. R. Quick, Section Chief, RONS Branch	Date Signed

SUMMARY

Inspection on September 16-19, 1980

Areas Inspected

This routine, unannounced inspection involved 72 inspector-hours on site in the areas of startup test results review which included the integrated leak rate, local leak rate, thermal expansion, and load rejection testing.

Results

Of the four areas inspected, no items of noncompliance or deviations were identified.

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DETAILS

1. Persons Contacted

Licensee Employees

- *J. Wilson, Plant Manager
- *R. Saunders, Assistant Plant Manager
- *D. Fortin, Engineering Supervisor
- R. Blount, Engineer
- R. Raykiewicz, Control Room Operator

Other licensee employees contacted included records personnel.

Other Organizations

S&W

M. Pacy, Stress Engineer (via telephone)

NRC Resident Inspector

- *D. Burke, Senior Resident Inspector
- *M. Davis, Resident Inspector

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on September 19, 1980 with those persons indicated in Paragraph 1 above.

3. Licensee Action on Previous Inspection Findings

Not inspected.

4. Unresolved Items

Unresolved items are matters about which more information is required to determine whether they are acceptable or may involve noncompliance or deviations. New unresolved items identified during this inspection are discussed in paragraphs 5, 6, 7, and 8.

5. Leak Rate Testing

The inspectors reviewed the integrated leak rate test (ILRT) report and determined that the 95% UCL (upper confidence limit) leakage of 0.028 %/day plus identified add on leakage was well below the allowable 75% La. Also, a brief review of add on leakage and local leak rate test results were performed. Some problems were identified in these reviews as follows:

- a. The ILRT report does not contain a listing of as found-as left leakage results for all type B and Type C tests performed since the last Type A test as required by Appendix J to 10 CFR 50. Also, certain minor inaccuracies on page 3-9 of the report must be corrected for the record.

The ILRT test report did not contain enough information relative to the leakage rates, and leak locations to enable the inspectors to determine if the two failed attempts to perform a Type A test were a result of leakage in new systems or represent a failed ILRT. This information and the licensee's evaluation must also be presented to NRR. The licensee stated that this information would be assembled, evaluated and incorporated into the ILRT report.

- b. The local leak rate test program is incomplete. Procedure PT-16.4 specifies the containment isolation valves to be Type C tested at each refueling outage (not to exceed 24 months). In addition, procedure PT-16.3A, "Fuel Transfer Local Leakage," and PT-16.3B, "Containment Isolation Valve Leakage for Type A Test," specify certain flanges and valves to be tested only prior to Type A (ILRT) tests (i.e. at greater than 3 year intervals). A preliminary review of PT16.3A and 16.3B indicate that certain valves and flanges in these procedures such as reactor coolant pump seal water inlet and outlet, component cooling water supply and return and the refueling transfer canal blank flange should be local leak tested at each refueling outage (not to exceed 24 months) as required by Appendix J to 10 CFR 50. The licensee will re-evaluate the local leak rate test program and the inspectors will perform a detailed review of the revised Type B and Type C test program.

The inspectors confirmed that prior to the recent startup of Unit 2 PT16.3A, PT16.3B and PT16.4 had all been performed.

- c. Post calibration of leak rate test instrumentation was discussed with the licensee. The Nuclear Power Plant Quality Assurance Manual, Section 12, requires that instruments used in safety related testing be recalibrated periodically. If on requalification an instrument is out of calibration then QA requires that any test made by the instrument be evaluated and appropriate corrective action taken. The inspectors found that the required recalibration frequency for rotometers used in local leak rate testing is one year. It would be possible for the plant to be brought to power and operated for almost one year before a calibration problem would be recognized. At the exit interview the inspectors stated that a more timely check of the rotometers should be considered.

At the exit interview the licensee was informed that items a and b above were potential items of noncompliance with Appendix J to 10 CFR 50 but would be designated as unresolved items (281/80-39-01) for item a and (281/80-39-02) for item b pending review of additional information and a more detailed review of local leak rate procedures. Item c above was identified for followup inspection as item (281/80-39-03).

6. Containment Recirculation Spray System

The inspectors reviewed the status of the recirculation spray system heat exchanger leak testing to verify that tube leakage had been repaired. An air pressure test on the shell side of the heat exchanger after tube plugging indicated no leakage. The licensee believes that the tube leakage can be attributed to the presence of sea water in the copper-nickel tubes for extended periods of time. Copper granules were found in the bottom of the heat exchanger. The source of copper was not definitely established at this time but may be copper removed from the tubes by chemical reaction. The inspectors acknowledged the leak tight integrity of the tubes at this time but indicated their concern for potential long term deterioration of the tubes which form a containment boundary. Review of licensee action to establish the condition of the tubes and corrective action to prevent long term deterioration of the tubes was designated as unresolved item (281/80-39-04).

7. Thermal Expansion

The inspector reviewed the thermal expansion procedure and a portion of the test data. The procedure contained the essential elements such as system walk downs at each temperature plateau to identify interference; recording of identified data points; approval of a stress engineer prior to proceeding to next plateau; and, predicted expansion values. Preliminary evaluation of the expansion was performed by Stone and Webster stress engineers and found acceptable. The final expansion data for the main steam and feedwater lines inside containment were not available. Personnel were unable to reach the scratch plates used to record the actual piping movement under the subatmospheric operating conditions which must be established before exceeding a system temperature of 350 degrees F. The inspector determined that these lines were observed from the operating floor by stress engineers during system heatup above 350 degrees and during power ascension. No interference with piping movement was observed. The actual piping movement will be obtained from the scratch plates at the first reactor shutdown. The inspector identified the thermal expansion test results as unresolved item (281/80-39-05) pending acceptability of the final evaluation.

8. Load Rejection Testing

By management decision the scheduled load rejection test at 35% power was changed to 50% power. The licensee stated that load rejection tests were performed at 50% and 75% full power. Data on the 50% test could not be located at this time. The inspector reviewed the feedwater control stability for the 75% full power test and had no questions. At the exit interview the inspector discussed the need to verify the feedwater control stability at a low power. The licensee agreed to perform the load rejection test at 35% power on the next reactor shutdown. This matter was identified as unresolved item (281/80-39-06) pending demonstration of feedwater system control stability at low power.