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

Report No. 50-281/80-01

Licensee: Virginia Electric and Power Company
Richmond, Virginia 23261

Facility: Surry Nuclear Plant

Docket No. 50-281

License No. DPR-37

Inspection at Surry Site near Williamsburg, Virginia

Inspectors: H. I. Whitmer (for) — E. H. Brooks — Date Signed 3/18/80

B. T. Moon — Date Signed 3/18/80

Approved by: C. M. Upright, Acting Section Chief, RONS Branch — Date Signed 3/18/80

SUMMARY

Inspection on February 19-22 and 26-28, 1980

Areas Inspected

This routine, announced inspection involved 90 inspector-hours on site in the areas of containment integrated leakage rate testing.

Results

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

DETAILS

1. Persons Contacted

   Licensee Employees

   *J. Wilson, Operations Superintendent
   R. Blount, Test Coordinator
   M. Kansler, Associate Engineer

   Other Organizations

   Stone and Webster

   B. Kuechler
   R. Parry
   C. Morrell
   R. Bernier
   H. Kunnel
   S. Frank

   NRC Resident Inspector

   D. Burke

   *Attended exit interview

2. Exit Interview

   The inspection scope and findings were summarized on February 28, 1980, with those persons indicated in paragraph 1 above.

3. Licensee Action on Previous Inspection Findings

   Not inspected.

4. Unresolved Items

   Unresolved items were not identified during this inspection.

5. Containment Integrated Leakage Rate Testing

   During the period of February 19-22, the inspectors conducted the following reviews and inspections:

   a. Reviewed Periodic Test No. 16.3 - Containment Leakage Rate Test (Type A at 45 psig) Revised 2-6-80.

   b. Inspected installation of compressors and preparations for containment pressurization.

c. Confirmed removal of all pressure sources from the containment.

d. Confirmed that the reactor coolant system was adequately vented to the containment atmosphere prior to the start of the test.

e. Reviewed containment integrated leakage rate test (Type A) instrument calibration records and verified that the instruments are in calibration according to the available certification which are traceable to the National Bureau of Standards (NBS).

The instrument calibrations reviewed were:

Instrument	Identification	Calibration Date
Quartz Manometers (Calibrated by Mensor)	S/N 414	12/18/79
	S/N 416	12/18/79
	S/N 1280	12/18/79
	S/N 587	12/18/79
Air Flow Meter (Calibrated by Singer)	1-AL2300TC	1/8/80
Thermoelectric Dew-Point Hygrometer (Calibrated by NBS)	General Eastern Instruments, Models 1200APS, S/N 92472, PRT S/N 13975	9/6/79
Containment Temp. RTD Sensors (Calibrated by Rosemont)	LM 200-1	2/8/80
	LM 200-2	2/8/80
	LM 200-3	2/8/80
	LM 200-7	2/9/80
	LM 200-16	2/10/80
	LM 200-18	2/10/80
Containment Dewpoint Sensors (Calibrated by Rosemont)	No. 6	2/11/80
	No. 7	2/11/80
	No. 8	2/11/80
	No. 9	2/11/80
	No. 10	2/11/80

The inspector also verified that the data acquisition of RTD inputs was accomplished by an analog-to-digital conversion which has about 13 bit resolution and is capable of measuring to an accuracy of better than 0.1°F.

Initiation of the containment integrated leakage rate test was delayed due to additional maintenance required during reinstallation of the equipment hatch cover and emergency air lock doors. Containment test pressure (45 psig) was reached on February 27 and the containment atmosphere was permitted to stabilize at approximately 46 to 47 psig for a minimum of 4 hours. The inspectors reviewed documentation of valve alignment and verification by the licensee's quality assurance personnel. Calculation of containment leakage rate using the mass point analysis and total time analysis commenced at about 0900 hours

on February 27. The acceptance criteria established by the licensee is stated as the leakage rate upper confidence limit (UCL) plus local leakage measurements (type B and C) shall be less than 0.75 La or 0.075% per 24 hours. The local leakage measurements to be added were stated by the licensee to be 0.01236% per 24 hours. As the leakage rate test progressed, it became necessary for the licensee to dispatch survey crews to search for and identify leaks and to isolate or adjust components to reduce the measured leakage rate. The following valve isolations or adjustments were made:

Tightened valve packing - MOV-CS-201A
MOV-CS-201B
MOV-RS-256A

Closed valves - 1-CV-1
2-CV-20
2-CV-26

Results of the above actions did not reduce containment calculated leakage to a level sufficient to meet the acceptance criteria. Therefore, at 0400 on February 28, it was determined to terminate the test and depressurize the containment.

The licensee concluded that additional local testing and corrective action would be required prior to repeating the containment integrated leakage rate test.