



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

Report Nos.: 50-280/84-11 and 50-281/84-11

Licensee: Virginia Electric and Power Company
Richmond, VA 23261

Docket Nos.: 50-280 and 50-281

License Nos.: DPR-32 and DPR-37

Facility Name: Surry 1 and 2

Inspection at Surry site near Williamsburg, Virginia

Inspector: J. J. Lenahan *J. J. Lenahan* 7/27/84
Date Signed

Approved by: F. Jape, Section Chief *Frank Jape* 7/27/84
Engineering Program Branch
Division of Reactor Safety
Date Signed

SUMMARY

Inspection on March 20 - 23, 1984

Areas Inspected

This routine, unannounced inspection involved 27 inspector-hours on site in the areas of licensee action on previous inspection findings and testing of snubbers.

Results

in the two areas inspected, no violations or deviations were identified in one area; one apparent violation was found in one area (Inadequate Snubber Service Life Monitoring Program, paragraph 4).

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REPORT DETAILS

1. Persons Contacted

Licensee Employees

- ***R. H. Blount, Performance Engineer
- **R. Cartwright, Manager of Nuclear Operations
- ***M. R. Kansler, Superintendent, Technical Services
J. Patrick, Superintendent of Maintenance
- ***R. F. Saunders, Assistant Station Manager
- **W. L. Stewart, Vice-President, Nuclear Operations
- ***J. L. Wilson, Station Manager
D. Wong, Mechanical Engineer

Other licensee employees contacted included 3 engineers and 2 mechanics.

NRC Resident Inspectors

- **D. J. Burke
- **M. J. Davis

- *Attended exit interview
- **Participated in March 28, 1984 Conference Call
- ***Attended exit interview and participated in March 28 Conference Call

2. Exit Interview

The inspection scope and findings were summarized on March 23, 1984, with those persons indicated in paragraph 1 above. Subsequent to the inspection, on March 28, 1984, the inspection findings listed below were discussed with the individuals listed in paragraph 1 above during a telephone conference call. The licensee acknowledged the inspection findings and committed to take immediate action to correct the violation.

Violation 280/84-11-01 and 281/84-11-01, Inadequate Snubber Service Life Monitoring Program - Paragraph 4.

Unresolved Item 280/84-11-02 and 281/84-11-02, Resolution of QA Audit Findings - Paragraph 4.

Unresolved Item 280/84-11-03 and 281/84-11-03, Snubber Maintenance Program - Paragraph 5.

3. Unresolved Items

Unresolved items are matters about which more information is required to determine whether they are acceptable or may involve violations or deviations. New unresolved items identified during this inspection are discussed in paragraphs 4 and 5.

4. Licensee Action on Previous Enforcement Matters

(Closed) Unresolved Item 280/78-13-06 and 281/78-13-06, Establish Seal Lifetime for Non EP Seals. This item concerned the need to establish the seal lifetime (service life) for snubber seals fabricated from non-ethylene propylene materials. Subsequent to the inspection when this unresolved item was identified, Technical Specification (TS) 4.17 was amended to require that a service life be established and monitored for all snubbers (TS Amendments 79 and 80, issued August 17, 1982). During previous inspections (280/83-32 and 281/83-33, November 14 - 17, 1983; 280-281/84-03, January 30 - February 2, 1984; and 280-281/84-08, March 5 - 8, 1984), the inspector reviewed and discussed the snubber service life monitoring program with licensee engineers and licensee management personnel. Licensee personnel stated that a 5 year service life is used for hydraulic snubbers, and that all hydraulic snubbers had been rebuilt during the steam generator replacement project (July 1980 for Unit 2 and July 1981 for Unit 1) using seals fabricated from EP materials. The licensee monitored the snubber service life using a computer printout which listed the snubber serial number, the snubber installation location, and the date when the snubber had last been reconditioned or rebuilt. As discussed in Inspection Report Number 280-281/84-08, more than 30 percent of the 136 hydraulic snubbers from Unit 1 which were functionally tested failed to meet the acceptance criteria. Ten of these snubbers failed to lockup during testing. That is, these snubbers were totally inoperable. Functional testing of the Unit 2 snubbers was in progress during this inspection. The snubbers were experiencing a failure rate of greater than 20 percent. (Subsequent to the completion of the inspection, the licensee reported that more than 25 percent of the 191 hydraulic snubbers from Unit 2 which were functionally tested failed to meet the acceptance criteria. Nine of these snubbers failed to lockup during testing.)

On March 16, 1984, the licensee disassembled and inspected seven snubbers which failed to meet the functional acceptance criteria. These inspections, which were performed in the presence of the NRC resident inspector disclosed that five snubbers had seals fabricated from non-EP materials. Some of the seals were badly deteriorated. The licensee disassembled and inspected additional snubbers which failed the functional tests during this inspection, including two snubbers from Unit 2. The visual inspections disclosed that additional snubbers had seals fabricated from Non-EP materials, including one of the Unit 2 snubbers. The seal problem appear to be confined to the ITT Grinnel Lynair snubbers.

After the inspections performed on March 16 disclosed that some snubbers had non-EP seals, the licensee performed a detailed review of snubber maintenance records. This review disclosed that numerous Unit 1 snubbers apparently had not been completely rebuilt during the steam generator replacement project as the licensee believed when the snubber service life monitoring program was established per the requirements of the August 1982 TS 4.17 amendment. At this time, the licensee cannot provide a reason for this discrepancy, but the problem may be related to the method of snubber identification used in July 1981. There are approximately 51 Unit 1 Lynair

snubbers affected by the discrepancy in the maintenance records. The number of Unit 2 snubbers affected by the same problem has not been ascertained. However, since this problem appears to involve only the Lynair snubbers, the licensee is replacing or rebuilding all the Unit 2 Lynair snubbers.

Based on the problems discussed above, the inspector concluded that the snubber service life monitoring program established by the licensee to comply with Technical Specification 4.17.F has been inadequate. This is identified as a violation. Unresolved Item 280-281/78-13-06 is closed and upgraded to Violation Item 280-281/84-11-01, Inadequate Snubber Service Life Monitoring Program.

Discussions with licensee management during the exit interview disclosed that problems with the snubber service life program had been identified by VEPCO QA audit personnel. A copy of audit report S83-07, which was completed in December 1983, was presented to the inspector. The inspector reviewed the audit in the RII office and concluded that the audit finding was similar to the violation discussed above. However, it appears that prompt corrective action to resolve the audit finding was not initiated. Following the inspection, the licensee was notified, via telephone, that the failure to take prompt and adequate corrective action to resolve the audit finding is an Unresolved Item 280-281/84-11-02, Resolution of QA Audit Finding. Follow-up on this item will be conducted on a future inspection.

5. Snubber Surveillance Programs, Units 1 and 2 (61729)

The inspector examined procedures and quality records related to the snubber surveillance program and inspected selected snubbers on safety-related piping systems. Acceptance criteria utilized by the inspector are specified in Technical Specification 4.17.

a. Review of Snubber Surveillance Procedures - Unit 2

The inspector examined the following procedures which control the Unit 2 snubber surveillance activities:

- (1) Procedure number 2-PT-39A-1, Visual Inspection - Accessible Snubbers - As Left
- (2) Procedure number 2-PT-39B-1, Visual Inspection - Accessible Snubbers - As Found
- (3) Procedure number 2-PT-39A-2, Visual Inspection - Inaccessible Snubbers - As Left
- (4) Procedure number 2-PT-39B-2, Visual Inspection - Inaccessible Snubbers - As Found
- (5) Procedure number PT-39.2, Snubber Functional Testing
- (6) Procedure number 2-PT-39.3, Mechanical Snubber Functional Testing
- (7) Procedure number 2-PT-39.4, Snubber Functional Test

b. Inspection of Snubbers

The inspector performed a visual inspection of the Unit 1 snubbers listed below and verified that snubbers were not damaged, that attachment to the supporting structure and piping was secure, that the fluid levels in hydraulic snubbers was higher than target levels and that leakage of fluid was not occurring.

- (1) Snubber numbers 1-SHP-HSS-37,38,39,51A*,51B*, 52A*,54A*,54B* on the main steam system
- (2) Snubber numbers 1-WFPD-HSS-20 and 21A on the main feed system
- (3) Snubber numbers 1-WAPD-146 and 148 on the auxiliary feed system
- (4) Snubber number 1-WCMU-HSS-100 on the make-up system

*Denotes mechanical snubber. All others listed are hydraulic.

c. Review of Quality Records

The inspector reviewed the quality records documenting the results of functional testing performed on Unit 1 snubbers during the February 24 - March 9, 1984, maintenance outage. These results are currently being evaluated by the licensee based on revised acceptance criteria developed by the licensee's design engineers and A/E, Stone & Webster. The revised acceptance criteria appear in procedure ADM 89.14. More than 30 percent of the snubbers tested did not meet the revised functional test acceptance criteria. The inspector also verified that the serial number of Unit 1 snubbers examined by the inspector (listed in paragraph 5.b above) were accurately documented in the snubber tables and records.

d. Examination of Disassembled Snubbers

The inspector witnessed disassembly and inspection of snubbers that failed the functional tests. The disassembly was performed by Wyle Laboratory mechanics. Wyle Labs is the contractor performing the removal, functional testing, and re-installation of snubbers. The inspection of the disassembled snubbers is being performed by licensee engineers. Snubbers examined by the inspector were as follows:

- (1) Snubber serial numbers 8634, 11457, 11460, and 11482. These were PSA mechanical snubbers.

Snubber number 11460 and 11482 which are PSA $\frac{1}{2}$ size, were found to have bent screw rods and miscellaneous loose small metal parts (washers, spacers, and metal chips) in the internal mechanism of the snubbers.

- (2) Hydraulic snubbers numbers 1-CC-HSS-340B, 2-RH-HSS-21, and 2-RC-HSS-113.

Snubber 2-RH-HSS-21 had seals fabricated from non-EP material.

During the inspection, the licensee disassembled and repaired additional hydraulic snubbers. Several of these snubbers also had non-EP seals. In addition, two snubbers, Nos. 1-RC-HSS-107, and 1-RC-HSS-108, had popet valves installed upside down. The inspector reviewed the licensee's snubber maintenance procedure, and discussed the snubber rebuilding program with licensee maintenance personnel. These individuals could not explain the reason for the discrepancy (non-EP seals and improperly installed popet valves) found in the ITT Lynair snubbers.

The inspector concluded that these problems may be related to snubber maintenance program. Pending a detailed NRC review of the snubber maintenance program in a future inspection, this problem was identified to the licensee as unresolved items 280, 281/84-11-03, Snubber Maintenance Program Adequacy.

Within the area inspected, no violations or deviations were identified.