



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION II  
101 MARIETTA STREET, N.W.  
ATLANTA, GEORGIA 30323

Report Nos.: 50-269/85-31, 50-270/85-31, and 50-287/85-31

Licensee: Duke Power Company  
422 South Church Street  
Charlotte, NC 28242

Docket Nos.: 50-269, 50-270, and 50-287

License Nos.: DPR-38, DPR-47, and  
DPR-55

Facility Name: Oconee 1, 2, and 3

Inspection Conducted: September 23-27, 1985

Inspector:

J. J. Lenahan

*J. J. Lenahan*

*10/11/85*  
Date Signed

Approved by:

F. Jape, Section Chief  
Engineering Branch  
Division of Reactor Safety

*Frank Jape*

*10/11/85*  
Date Signed

SUMMARY

Scope: This routine, unannounced inspection entailed 38 inspector-hours onsite in the areas of reviewing the reactor building tendon surveillance program, and surveillance of pipe support and restraints; and followup on IE Information Notice 85-0.

Results: No violations or deviations were identified.

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## REPORT DETAILS

### 1. Persons Contacted

#### Licensee Employees

M. Addis, Mechanical Engineer, Maintenance Services  
\*B. W. Carney, Supervisor, Maintenance Services  
\*R. K. Emory, Technician, Maintenance Services  
S. F. Lindsay, Mechanical Engineer, Nuclear Production Department  
\*T. C. Mathews, Compliance Technical Specialist  
\*M. S. Tuckman, Station Manager

Other licensee employees contacted included two engineers and five mechanics.

#### NRC Resident Inspectors

\*J. C. Bryant  
\*M. K. Sasser  
\*L. P. King

\*Attended exit interview

### 2. Exit Interview

The inspection scope and findings were summarized on September 27, 1985, with those persons indicated in paragraph 1 above. The inspector described the areas inspected and discussed in detail the inspection findings. No dissenting comments were received from the licensee. The following new items were identified during this inspection.

- Inspector Followup Item 287/85-31-01, Repairs to Unit 3 Reactor Building Floor Grating, paragraph 5a.
- Unresolved Item 287/85-31-02, Evaluation of Pipe Support/Restraint Deficiencies Identified During Unit 3 Inservice Inspection, paragraph 7.

The licensee did not identify as proprietary any of the materials provided to or reviewed by the inspector during this inspection.

### 3. Licensee Action on Previous Enforcement Matters

This subject was not addressed in the inspection.

### 4. Unresolved Items

Unresolved Items are matters about which more information is required to determine whether it is acceptable or may involve a violation or deviation.

New unresolved items identified during this inspection are discussed in paragraph 7.

5. Independent Inspection Effort, Reactor Building Grating (92706)

- a. The inspector walked down portions of the Unit 3 containment building and examined bolted connections on the reactor building internal structural steel supports and platforms. During this walkdown, the inspector noted that numerous sections of the platform grating were not securely fastened to the supporting structural steel. Discussions with licensee management disclosed that the grating tie down clips may have been removed for access to equipment during the current outage. The resident inspector will examine the grating prior to closeout of the reactor building, to verify this problem has been corrected. This was identified to the licensee as Inspector Followup Item 287/85-31-01, Repairs to Unit 3 Reactor Building Floor Grating.
- b. The inspector reviewed procedure number MP/0/A/1400/21, Surveillance of Secondary Shield Wall Tendons. This procedure addresses surveillance requirements for the tendons in the interior secondary shield walls around the steam generators. This surveillance program is part of the corrective action to assure the integrity of these tendons to prevent tendon failures similar to a previous failure reported on April 29, 1982, which was described in LER RO-287/83-07.

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

6. Snubber Surveillance Program, Units 1, 2, and 3 (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 Specifications 3.14 and 4.18.

a. Review of Snubber Surveillance Procedures

The inspector examined the following procedures which control snubber surveillance activities.

- (1) Procedure number MP/0/A/3018/09, Functional Testing of Hydraulic Snubbers.
- (2) Procedure number MP/0/A/3018/59, Functional Testing of Mechanical Snubbers.
- (3) Procedure numbers MP/1/A/3018/10; MP/2/A/3018/10; and MP/3/A/3018/10, Visual Inspection of Inaccessible Hydraulic Snubbers, Units 1, 2, and 3, respectively.

- (4) Procedure numbers MP/1/A/3018/11, MP/2/A/3018/11, and MP/3/A/3018/11, Visual Inspection of Accessible Hydraulic Snubbers, Units 1, 2, and 3, respectively.
- (5) Procedure numbers MP/1/A/3018/19, MP/2/A/3018/19, and MP/3/A/3018/19, Visual Inspection of Inaccessible Mechanical Snubbers, Units 1, 2, and 3, respectively.
- (6) Procedure numbers MP/1/A/3018/20, MP/2/A/3018/20, and MP/3/A/3018/20, Visual Inspection of Accessible Mechanical Snubbers, Units 1, 2, and 3, respectively.

b. Inspection of Snubbers

The inspector performed a visual inspection of the snubbers listed below and verified that the snubbers were not damaged, that attachment to the supporting structure and piping was secured, that sufficient fluid was present in the hydraulic snubber reservoirs, and that leakage of fluid was not occurring. Snubbers examined were as follows:

- (1) Snubber numbers RCPM-3A-1-SS1\*, SS2\*, and SS3\* on the Unit 3 3A-1 reactor coolant pump.
- (2) Snubber number 3-03-2480B-H6B on the Unit 3 main feedwater system.
- (3) Snubber numbers 50-0-2479A-H19A\* and H19B\* on the Unit 3 reactor coolant system.
- (4) Snubber numbers 1-01A-0-550-R14, R15, and R16 on the Unit 1 turbine stop valves.
- (5) Snubber numbers 2-01A-0-1401B-R14, R15, and R16 on the Unit 2 turbine stop valves.
- (6) Snubber numbers 3-01A-0-2401B-R-14, R15, and R16 on the Unit 3 turbine stop valves.
- (7) Snubber number 0-03A-1-0-2400A-H204\* on the Unit 3 emergency feedwater system.

\*Denotes mechanical snubbers, all other snubbers listed are hydraulic.

The inspector also witnessed testing and disassembly of snubber number 3-01A-2-0-2403D-R6 which was performed to determine why this snubber failed the functional test. The snubber had failed to functional test due to high drag force experienced near end of tension test. After completion of the testing, licensee engineers concluded that failure was due to a damaged ball screw shaft.

## c. Review of Quality Records

The inspector reviewed quality records documenting the results of visual inspections performed on Units 1, 2, and 3 inaccessible snubbers. The records reviewed are summarized in the table below:

TABLE  
SUMMARY OF VISUAL INSPECTION OF INACCESSIBLE SNUBBERS

<u>Snubber Group</u>	<u>Date of Inspection</u>	<u>Number of Inoperable Snubbers Found</u>	<u>TS Inspection Interval (<math>\pm 25\%</math>)</u>
Unit 1 Mechanical	6/7/83	0	18 months
	10/4/83	0	18 months
Unit 1 Hydraulic	6/13/83 & 8/26/83 (1)	1	12 months
	10/4/84	0	18 months
Unit 2 Mechanical	2/25/82 & 4/21/82 (1)	0	18 months
	9/21/83	0	18 months
	2/21/85	0	18 months
Unit 2 Hydraulic	1/11/82 & 4/20/82 (1)	0	18 months
	9/21/83 & 11/14/83 (1)	(2)	(3)
	2/25/85	0	18 months
Unit 3 Mechanical	5/19/82 & 9/23/82 (1)	0	18 months
	3/12/84	0	18 months
Unit 3 Hydraulic	5/20/82 & 9/23/82 (1)	0	18 months
	3/12/84	0	18 months

- (1) Dates of snubber inspection performed ten days prior to restart of unit. This date used to determined date of next surveillance inspection.
- (2) Two snubbers were identified as inoperable during this inspection. However, engineering evaluation performed subsequent to the inspections, summarized in May 11, 1984 letter to NRC, determined that the one of the snubbers was actually operable. Therefore, number of inoperable snubbers was one.
- (3) Inspection interval was 12 months. With plus 25 percent extension of interval, inspection was required to be performed by February 12, 1985. However, Amendment 134 to Technical Specification granted one time extension to performance of this inspection to March 15, 1985.

The inspector also reviewed results of functional tests performed on mechanical snubbers in November 1984 for Unit 1 snubber, in October 1983 for Unit 2 snubbers, and in March 1984 for Unit 3 snubbers.

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

7. Surveillance of Pipe Supports - Unit 3 (61729)

The inspector reviewed the nonconforming item reports (NCIs) listed below. These NCIs were written as a result of deficiencies identified by the licensee during inservice inspection of selected safety-related Unit 3 pipe supports and restraints.

NCIs reviewed were as follows: NCI 1371 through 1384, 1391 through 1394, 1405 through 1417, 1424, 1430 through 1434, 1444 through 1452, 1466, 1470 through 1472, 1484, 1486 through 1488, 1490, 1491, and 1497.

Review of these NCIs disclosed that approximately 25 percent of the NCIs documented discrepancies between the as-built hanger/support drawings and the existing hanger/supports. The remaining NCIs documented minor problems such as missing spacer washers in attachment of hanger rods/snubbers to hanger brackets, minor weld fabrication deficiencies, minor hanger configuration discrepancies, and loose jam nuts on hanger rods. The as-built drawings had been prepared during field walkdown inspection performed for the seismic analyses of as-built safety-related piping systems required by IE Bulletin 79-14. Pending further review by the inspector of the licensee's actions to determine the cause of the inaccurate as-built drawings and of the licensee's final corrective actions, this problem was identified to the licensee as Unresolved Item 287/85-31-02, Evaluation of Pipe Support/Restraint Deficiencies Identified During Unit 3 Inservice Inspection.

8. Reactor Containment Building Tendon Surveillance Program (61701)

The inspector examined procedures and quality records related to the reactor containment building tendon surveillance program. Acceptance criteria utilized by the inspector appear in Technical Specification 4.4. Procedures MP/1/A/1400/22, MP/2/A/1400/22, and MP/3/A/1400/22, Surveillance of Reactor Building Tendons, for Units 1, 2, and 3, respectively were examined. The inspector reviewed the results of the Unit 1 tendon surveillance performed October-December 1984 and the Unit 2 tendon surveillance performed September-December 1983. No major deficiencies were identified during the above tendon surveillances. However, the licensee submitted a licensee event report (number LER 269/85-12) in a letter dated September 19, 1985, concerning failure to submit tendon surveillance reports to NRC as required by TS Section 4.4.2.2. The licensee committed to submit these reports to NRC by October 1, 1985.

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

9. IE Information Notice 85-10, Tendon Anchorhead Failures

The inspector reviewed a Duke memo dated June 26, 1985, Subject: Oconee Nuclear Station, IE Information Notice 85-10. This memo documents the licensee's review of the Farley tendon anchorhead failures and the potential for a similar problem in the Oconee containment post-tensioning system. Duke's evaluation concluded that the Oconee tendon anchorheads should not experience similar damage for the following reasons:

- a. Materials used in Oconee anchorhead are carbon steel as opposed to low alloy high strength steel used at Farley which are more subject to hydrogen stress cracking.
- b. There are no galvanized materials in the Oconee tendon system; thus there is no zinc present to produce hydrogen or set up galvanic cells which would accelerate any corrosion which might occur as described in Supplement 1 to IEN 85-10.
- c. During the tendon building surveillance program, which has been completed four times for each unit, there have been only two incidents where water was found in the grease caps. In both cases, there was no sign of water intrusion through the grease coverage to the anchorheads. There has been no sign of any corrosion problems with any of the anchorheads inspected.
- d. Problem identified with corrosion of a vertical tendon in the secondary shield wall was caused by presence of water in the vertical tendon grease caps. However, corrosion inhibiting grease had not been pumped into the tendon voids in the secondary shield wall as was required for the reactor containment building exterior wall tendons. The problem with the secondary shield wall is being monitored by the program described in paragraph 5.b., above.

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