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

Report Nos.: 50-269/84-10, 50-270/84-10, and 50-287/84-11

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 Nuclear Station Units 1, 2, and 3

Inspection at Oconee site near Seneca, South Carolina

Inspector: C. W. Burger, for J. Bryant — Date Signed: 6/12/84

Approved by: A. F. Gibson for V. L. Brownlee, Chief
Division of Reactor Projects — Date Signed: 6/13/84

SUMMARY

Inspection Date: April 18 - May 10, 1984

Areas Inspected

This routine unannounced inspection involved 136 resident inspector-hours on site in the areas of operations, surveillance, maintenance, station modifications, and refueling operations.

Results:

No violations or deviations were identified.

REPORT DETAILS

1. Persons Contacted

*M. S. Tuckman, Station Manager
*R. Bond, Compliance Engineer
*T. Matthews, Compliance Engineer

Other licensee employees contacted included construction craftsmen, operators, mechanics, security force members, and staff engineers.

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on May 14, 1984, with those persons indicated in Paragraph 1 above.

3. Licensee Action on Previous Inspection Findings

(Closed) Unresolved item 269, 287/84-03-01, Purge filter seismic requirements. Duke Design Engineering evaluated the bolt configuration as found by the inspectors and determined that there was a safety factor of 2.5 relative to design loads and reaction forces. This satisfied the design criterion. Immediately after the inspectors identified the problem, the licensee had additional bolts installed which increased the safety factor to 9.1.

The installation procedure has been revised to be more definitive about bolt installation. Since there had been no procedure violations, and design requirements were met, there was no violation of regulations. This item is closed.

4. Unresolved Items

Unresolved items were not identified during this inspection.

5. Plant Operations

The inspectors reviewed plant operations throughout the reporting period to verify conformance with regulatory requirements, Technical Specifications, and administrative controls. Control room logs, shift turnover records and equipment removal and restoration records were reviewed routinely. Interviews were conducted with plant operations, maintenance, chemistry, health physics and performance personnel.

Activities within the control rooms were monitored on an almost daily basis. Inspections were conducted on day and night shifts, during week days and on weekends. Some inspections were made during shift change in order to evaluate shift turnover performance. Actions observed were conducted as required by Section 3.18 of the station directives. The complement of licensed personnel on each shift inspected met or exceeded the requirements

of Technical Specifications. Operators were responsive to plant annunciator alarms and appeared to be cognizant of plant conditions.

Plant tours were taken throughout the reporting period on a routine basis. The areas toured included the following:

Turbine Building
Auxiliary Building
Unit 1, 2 and 3 Electrical Equipment Rooms
Unit 1, 2 and 3 Cable Spreading Rooms
Station Yard Zone within the Protected Area
Unit 3 Reactor Building

During the plant tours, ongoing activities, housekeeping, security, equipment status, and radiation control practices were observed.

Units 1 and 2 operated at essentially full power throughout the report period. No major difficulties were experienced.

Unit 3 remained shutdown for the Cycle 7 refueling outage throughout the report period. Most of the major work planned has proceeded essentially on schedule except for the actual refueling. Fuel handling delays were due mainly to a stuck fuel assembly and to various problems with fuel and rod handling masts and related equipment. These problems are discussed in more detail in a subsequent paragraph. The current projected startup date is May 26, 1984.

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

6. Surveillance Testing

The surveillance tests listed below were reviewed and/or witnessed by the inspector to verify procedural and performance adequacy.

The completed tests reviewed were examined for necessary test prerequisites, instructions, acceptance criteria, technical content, authorization to begin work, data collection, independent verification where required, handling of deficiencies noted, and review of completed work.

The test witnessed, in whole or in part, were inspected to determine that approved procedures were available, test equipment was calibrated, prerequisites were met, tests were conducted according to procedure, tests were acceptable and system restoration was completed.

Surveillances reviewed but not witnessed included the following:

IP/0/A/0210/04 - PM on gas analyzer
IP/0/A/0361/01A - Area radiation monitor instrument calibration
IP/0/A/0360/04D - Waste gas disposal monitor calibration
IP/0/A/0161/01B - Reactor building stack flow instrument calibration
MP/0/A/1730/01 - Calibration of torque wrenches for QC

Surveillances or tests witnessed in whole or in part included the following:

PT/1/A/0150/22A,	Operational valve functional test
PT/2/A/0600/13,	Motor driven emergency feedwater functional test
OP/1&2/A/1104/18,	Gaseous waste disposal system OP procedure
OP/0/A/1104/47,	Enclosure 5.1, process liquid waste disposal

In addition, the inspector witnessed and participated in a (station personnel only) practice alert on the evening of April 26, in which reporting time for involved personnel was determined, the TSC was set up, and communication established with outside monitors.

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

7. Maintenance Activities

Maintenance activities were observed and/or reviewed during the reporting period to verify that work was performed by qualified personnel and that approved procedures in use adequately described work that was not within the skill of the trade. Activities, procedures and work requests were examined to verify proper authorization to begin work, provisions for fire, cleanliness, and exposure control, proper return of equipment to service, and that limiting conditions for operation were met.

Work order packages reviewed but not witnessed included the following:

Work Request No.	Title
92044B,45B and 46B,	Install blank flange and install relief valve gauge for hydro.
12688B,	1A EHC pump discharge pressure not controlling at 1600 psig. Repair and test.
12728B,	Repair valve 3LP 14. Will open but not close from control room.
12692B,	Repair and test Unit 1 CBAST pump motor
12963, 64, 65B	Investigate and repair leaks on instrument valves on HPI line.
00658B	Unit 3 - Investigate and repair 3HP31, valve leaking 40 gpm.
03129B	3CF9 - Repair leak.

Work in progress observed in part included the following:

Inspection of Unit 3 reactor 'O' ring for proper placement.

Moving and installation of reactor vessel head.

Alignment of reactor coolant pump shaft.

Installation of supports and restraints in Unit 3 penetration room.

NSM 1826 - Add test circuitry to 3A motor driven emergency feedwater pump.

NSM 1762-OA. Replace Limitorque operators on valves HP 24, 25 and LP 17, 18, 21 and 22 and performance test.

NSM 1885/2 Replace local air supply switch, ES valve HP-5 and HP-21.

The inspector also observed the general conduct of work within the Unit 3 containment building, turbine building and auxiliary building.

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

8. Unit 3 Refueling Outage

The refueling outage has been extended about eight days due to various fuel handling problems. These included electrical and mechanical problems with the multifunction mast, several failures of the control rod grapple which resulted in the use of a mechanical tool, and delays caused by a stuck fuel assembly.

The stuck fuel assembly, in position E10, could be raised only about 18 inches and became stuck in that position, indicating that the restriction was at a spacer grid. Video examinations were made to the extent possible. A shim was made of stainless steel and inserted between E10 and adjacent assemblies. It could not be inserted completely between E10 and E9. The station manager held a planning session, attended by the inspector, to discuss the manner of removal and to explore all possibilities that could be foreseen.

Employing an additional hoist, both assemblies were raised together until, after about three feet, they separated. E9 was then lowered back into position and E10 was removed from the core. Underwater video was used throughout the operation.

Video examination of E9 revealed scoring or indentations several inches long on about ten fuel columns. The licensee's examination determined that the deepest of these was about three mils, with a maximum possibility of five mils. It was decided the best course of action was to leave E9 in place rather than replace it.

Video tapes of E10 indicated a possible tear about one inch long just below the lower spacer grid. However, the indication may be deposits on the sheath rather than a perforation. On initial video views there appeared to

be massive erosion of some portions of the assembly, but views from different angles with different lighting revealed that the apparent erosion was actually deposits on the assembly.

After a cooling off period of several months, E10 will be examined thoroughly. Prior to the shutdown, Unit 3 system activity was the lowest of the three Oconee units, giving no indication that there has been a release of fuel into the system.

Subsequent to the removal of E10, the considerable bowing of assemblies experienced resulted in the decision to remove the entire core and complete shuffling in the spent fuel pool. Fuel was returned to the core and refueling completed on May 6.

The inspectors witnessed various portions of the refueling activities and viewed the video tapes of the struck fuel assembly.

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

9. IE Bulletins

Closed; IEB 83-04, "Failure of Undervoltage Trip Function of Reactor Trip Breaker."

The subject bulletin has been closed for Oconee Units 1, 2 and 3 based on the Licensee's response of March 23, 1983, and its review by Region II technical personnel.