



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

Report Nos: 50-269/83-23, 50-270/83-23, and 50-287/83-23

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

|              |  |                |
|--------------|--|----------------|
| Inspectors:  | <u><i>J. M. Bryant</i></u>   | <u>7/26/83</u> |
|              | J. Bryant  | Date Signed    |
|              | <u><i>D. Falconer</i></u>  | <u>7/26/83</u> |
|              | D. Falconer  | Date Signed    |
|              | <u><i>J. Mathis</i></u>  | <u>7/26/83</u> |
|              | J. Mathis  | Date Signed    |
| Approved by: | <u><i>V. Brownlee</i></u>  | <u>7/26/83</u> |
|              | V. Brownlee, Section Chief,<br>Reactor Projects, Section 2A<br>Division of Project and Resident Programs | Date Signed    |

SUMMARY

Inspection on June 11 - July 10, 1983

Areas Inspected

This routine, announced inspection involved 267 resident inspector-hours on site in the areas of operations, surveillance testing, maintenance activities, and refueling outage.

Results

Of the 4 areas inspected, no items of noncompliance or deviations were identified.

## REPORT DETAILS

### 1. Persons Contacted

#### Licensee Employees

J. Ed Smith, Station Manager  
J. N. Pope, Superintendent of Operations  
\*T. Owen, Superintendent of Technical Services  
J. Davis, Superintendent of Maintenance  
\*G. E. Rothenberger, Maintenance Supervisor  
\*D. N. Crawford, Mechanical Maintenance Engineer  
R. Rogers, Licensing Engineer  
\*T. Matthews, Licensing Engineer, Technical Specifications  
\*H. E. Woodall, Licensing Engineer

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

\*Attended Exit Interview

### 2. Exit Interview

The inspection scope and findings were summarized on July 15, 1983, with those persons indicated in paragraph 1 above.

### 3. Licensee Action on Previous Enforcement Matters

Not inspected.

### 4. Unresolved Items

Unresolved items were not identified during this inspection.

### 5. Plant Operations

The inspector reviewed plant operations throughout the report period, June 11 - July 10, 1983 to verify conformance with regulatory requirements, Technical Specifications and administrative controls. Control room logs, shift supervisors' logs, shift turnover records and equipment removal and restoration records for the three units were routinely perused. Interviews were conducted with plant operations, maintenance, chemistry, health physics, and performance personnel on day and night shifts.

Activities within the control rooms were monitored during all shifts and at shift changes. Actions and/or activities observed were conducted as prescribed in Section 3.18 of the Station Directives. The complement of

licensed personnel on each shift met or exceeded the minimum required by technical specification. 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

Units 1, 2, and 3 Electrical Equipment Rooms

Units 1, 2, and 3 Cable Spreading Rooms

Station Yard Zone within protected area

Unit 1 Reactor Building

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

The inspector employed one or more of the following criteria for evaluating the above items:

10 CFR

ANSI N18.7

Oconee Technical Specifications

Oconee Station Directive

Duke Administrative Policy Manual

Within the areas inspected no violations or deviations were identified.

Unit 1 began the report period in the ninth day of a 71 day refueling outage. Details of the refueling outage are discussed elsewhere in this report.

Unit 2 operated at virtually full power for the entire report period.

Unit 3 began the report period operating at 100 percent power. Power was reduced to 15 percent on June 18 to take the turbine/generator off line to facilitate repairs to the number 5 reheat stop valve. The unit was returned to service on the same day and at the close of the report period was operating at full power with no discernible problems.

#### 6. Maintenance Activities

Maintenance activities were observed and/or reviewed throughout the report period to ascertain that the work was being performed by qualified personnel, that activities were accomplished employing approved procedures or the

activity was within the skill of the trade. Limiting conditions for operation were examined to ensure that technical specification requirements were satisfied. Activities, procedures, and work requests were examined to ensure adequate fire protection, cleanliness control and radiation protection measures were observed and that equipment was properly returned to service.

Detailed below are selected maintenance activities which were observed and/or reviewed during the report period:

| <u>Work Request Number</u> | <u>Component</u>               |
|----------------------------|--------------------------------|
| 05121B                     | 3PT-124A                       |
| 05349B                     | 1CCW-20                        |
| 01258B                     | 3SD-43                         |
| 05029B                     | '3C' HPI pump                  |
| 05033B                     | '3C' HPI pump                  |
| 05346B                     | 1RIA-5                         |
| 05353B                     | 1SF-1                          |
| 05368B                     | 'A' Turbine Building Sump Pump |
| 0527752                    | 1HP-278                        |
| 027754                     | 1HP-279                        |
| 04125B                     | '1A' RBS pump                  |

No violations or deviations were identified.

#### 7. Surveillance Testing

The surveillance tests detailed below were analyzed and/or witnessed by the inspector to ascertain procedural and performance adequacy.

The completed test procedures examined were analyzed for embodiment of the necessary test prerequisites, preparations, instructions, acceptance criteria and sufficiency of technical content.

The selected tests witnessed were examined to ascertain that current written approved procedures were available and in use, that test equipment in use was calibrated, that test prerequisites were met, system restoration completed and test results were adequate.

The selected procedures perused attested conformance with applicable Technical Specifications, they appeared to have received the required administrative review and they apparently were performed within the surveillance frequency prescribed.

Detailed below are selected surveillance tests which were observed and/or reviewed during the report period:

| <u>SURVEILLANCE TEST</u> | <u>TITLE</u>                         |
|--------------------------|--------------------------------------|
| MP/3/A/1705/19           | Fire Rated Door Inspection           |
| MP/1/A/1705/01A          | Fire Protection Equipment Inspection |
| IP/0/A/0360/15           | Process Radiation Calibration        |
| IP/0/A/0301/03S          | Source-Intermediate Range Channel    |
| IP/2/A/0305/03B          | Channel B on-line                    |
| MP/0/A/3018/09           | Grinnel Hydraulic Snubber Functional |

During inspections by the licensee to verify the integrity of fire barrier penetration seals between May 9, 1983 and May 25, 1983, five penetrations on Unit 1 and three penetrations on Unit 3 were found to have inadequate fire barrier seals. The penetrations consisted of an air conditioning vent duct, a ventilation supply duct, a vent duct, and two ventilation return ducts to the Unit 1 equipment room; a ventilation duct and a smoke exhauster to the Unit 3 control room kitchen; and a smoke exhauster to the Unit 3 equipment room. In addition, the ventilation duct in the Unit 3 control room kitchen did not have a required fusible damper installed. For each area upon discovery, the licensee verified operability of fire protection equipment and established hourly fire watches. All fire barrier seals were returned operable by June 9, 1983.

The chance of fire in the equipment rooms or control rooms is remote. The use of high heat, such as welding or burning in these areas is restricted and requires a burning permit and fire watch. Smoke detectors are located in each area along with a manually activated spray system in the equipment rooms. The control room is continuously manned and the equipment rooms toured each shift.

The inoperable fire barriers were due to a design deficiency and insufficient guidance in the actual implementation of the fire barrier penetration upgrade completed in 1979. In addition, inadequate inspection procedures and training of inspection personnel contributed to the failure to identify these problems during two earlier inspections. The licensee plans to revise applicable procedures to clarify inspection requirements and develop a training package for inspection personnel. The licensee has implemented a program whereby specific installation instructions are included in Nuclear Station Modification packages affecting fire barriers. Pending development of the training package and review of revised procedures, this item will be identified an inspector followup item 50-269/83-23-01.

## 8. Unit 1 Refueling Outage

Unit 1 refueling outage activities continued throughout the report period. Details of the major outage items are summarized below:

### Core Barrel Bolt Inspection

The inspectors witnessed portions of the ultrasonic testing (UT) of the upper core barrel bolts in response to concerns over observed degradation of similar core internal components at other B&W plants. The licensee UT'd all upper core barrel bolts and selected lower core barrel bolts and thermal shield bolts. No evidence of degradation was revealed during these examinations. This closes inspector followup item 50-269/83-18-01.

### Steam Generator Tube Inspection

The inspectors observed portions of the eddy current testing (ECT) of the 1A and 1B steam generators. ECT revealed 6 pluggable indications in the 1A steam generator and 16 pluggable indications in the 1B steam generator. Plugging of the degraded tubes will be identified as an inspector followup item 50-269/83-23-02.

### Core Scan Inspection

The core scan inspection revealed four fuel assemblies with broken holddown springs. Similar degradation has been reported in the past. (See licensee event reports 50-269/80-15, 50-270/82-03 and 50-287/82-07). The inspectors verified that the broken holddown springs were reported pursuant to Technical Specification 6.6.2.1. The licensee has replaced the degraded holddown springs.

### Letdown Cooler Replacement

The licensee is replacing the 1A and 1B letdown coolers during the outage. Onsite weld repairs to the replacement coolers were necessary due to the licensee ordering the coolers to the wrong code. Several of the as ordered cooler welds could not meet ASME Section XI code requirements. The licensee has corrected all discrepancies and letdown cooler installation is underway.

### Feedwater Heater Replacement

The resident inspection staff observed portions of the replacement of three feedwater heaters during the outage. The original heaters were cut from the system and removed from the turbine building. Installation of the replacement heaters is underway.

### Refueling Activities

The inspector reviewed the licensee's preparations for refueling procedure, OP/O/A/1503/01, for Unit 1 which provided the surveillance testing required by Technical Specifications (TS), limitations and precautions, and prerequisites necessary for preparing the unit for refueling. The inspector observed the following functional checks relating to preparation for refueling:

1. Functional check for the main fuel handling bridge.
2. Functional check of the spent fuel handling bridge.
3. Functional check of the fuel transfer system.
4. Functional check of the auxiliary fuel handling bridge.

The inspector reviewed licensee procedures for fuel handling, control of personnel and materials entering containment, radiological controls during refueling, and handling of other core internals.

The inspector witnessed fuel handling activities in the control room, containment and spent fuel pool and reviewed procedures relating to refueling to verify that activities were being accomplished in accordance with technical specifications, license requirements and NRC requirements. The inspector reviewed the refueling procedure and accompanying data to verify the following:

- a. Direct communication was established between the control room and the containment refueling floor.
- b. Instruments monitoring radiation levels in the reactor building refueling area and spent fuel storage area were properly calibrated and operating within a measurable count rate.
- c. Good housekeeping was maintained in the refueling areas.
- d. Control of personnel and material entering containment was in accordance with administrative procedures.
- e. Containment integrity was maintained as required by Technical Specifications.
- f. Changes to the procedures were made in accordance with administrative procedures.

In addition, the inspector reviewed control room logs for difficulties encountered during the refueling outage.

The inspector observed defueling of the core into the spent fuel pool from the control room and main refueling bridge for the regular and backshift crews to verify that all refueling related precautions and limitation were maintained during refueling.

During the refueling fuel component shuffle the inspectors witnessed fuel handling operations in the spent fuel pool area in order to verify that activities were performed in accordance with Technical Specifications and approved procedures. The inspectors verified that procedures relating to fuel handling operations included the following:

1. A limitation on the number of fuel assemblies that can be out of safe geometry locations at the same time.
2. Provisions for verifying prior to fuel handling that the spent fuel pit area crane interlocks or physical stops do prevent the crane from passing over fuel storage positions.
3. Provisions for verifying prior to fuel handling operations that spent fuel area ventilation system is operable.
4. Provisions for verifying prior to fuel handling that the loaded shipping cask is within the weight limits of the spent fuel pool area crane.
5. Provisions for verifying that minimum water level requirements are monitored during fuel handling operations.
6. Provisions for verifying that the spent fuel pool storage area radiation monitors are operable.
7. Provisions for verifying that the spent fuel pool cooling and clean-up system is operable.

The inspector observed fuel handling operations during fuel movement in the spent fuel pool. The inspector verified that the spent fuel pool water level was equal to or higher than the level established by Technical Specifications and the spent fuel pool ventilation system was maintaining the building at the specified negative pressure.

At the close of the report period, the licensee had reloaded 137 of 177 fuel assemblies into the core. Anticipated online date is August 8, 1983.

No violations or deviations were identified in the areas inspected.