



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

Report Nos. 50-269/79-31, 50-270/79-29, and 50-287/79-31

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

Facility Name: Oconee Nuclear Station

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

License Nos. DPR-38-47-55

Inspection at Oconee Nuclear Station near Seneca, South Carolina

Inspected by: *F. Jape* 11/21/79
F. Jape Date Signed

Approved by: *R. D. Martin* 11/21/79
R. D. Martin, Section Chief, RONS Branch Date Signed

Inspection on October 1-31, 1979

Areas Inspected

This routine, unannounced inspection involved 145 inspector-hours onsite in the areas of plant operations, plant tours, IEB followup, test witnessing and unit startup.

Results

Of the 5 areas inspected, no apparent items of noncompliance or deviations were identified.

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DETAILS

1. Persons Contacted

Licensee Employees

Duke Power Company

*J. E. Smith, Station Manager
*J. M. Davis, Superintendent of Maintenance
*J. N. Pope, Superintendent of Operations
*R. M. Koehler, Superintendent of Technical Services
*R. T. Bond, Licensing and Projects Engineer
R. C. Adams, I&E Engineer
*J. Brackett, Senior QA Engineer
H. W. Morgan, Shift Supervisor
J. W. Herring, Shift Supervisor
T. D. Patterson, Shift Supervisor
G. B. Jones, Shift Supervisor
D. W. Yoh, Shift Supervisor
L. C. Evans, Assistant Shift Supervisor
D. L. Gordan, Assistant Shift Supervisor
R. T. Scott, Assistant Shift Supervisor
W. R. Pollard, Assistant Shift Supervisor
D. F. Roth, Assistant Shift Supervisor
W. A. Horton, Assistant Shift Supervisor
F. E. Owens, Assistant Shift Supervisor
C. M. Sheridan, Assistant Shift Supervisor
E. G. LeGette, Assistant Shift Supervisor
O. C. Kohler, Assistant Shift Supervisor
P. J. Chudzik, Assistant Shift Supervisor
E. A. Force, Assistant Shift Supervisor
S. M. Pryor, Assistant Shift Supervisor
L. L. Howell, Assistant Shift Supervisor
G. A. Ridgeway, Unit 1 Operating Engineer
J. T. Campbell, Unit 2 Operating Engineer
B. C. Moore, Unit 3 Operating Engineer
D. Taylor, Assistant Engineer, I&E
E. Hite, Associate Engineer, I&E
T. Glenn, Associate Engineer, I&E
F. Siurua, Junior Engineer, I&E

Other licensee employees contacted included 6 technicians, 20 operators, 3 office personnel and 10 technical support personnel.

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Other Organizations

Kimetrics Inc.

G. Siegel, Field Representative

*Attended exit interview

2. Exit Interview

The inspection scope and findings were discussed on October 5, 12, 19, 26, and 31, 1979, with those persons indicated in Paragraph 1 above. The inspector questioned the adequacy of Test procedure TT/3/A/203/11 and TT/2 and 3/A/325/3 review since these procedures required extensive change at the time they were performed. License management committed to a thorough review of these tests to resolve the inspector's concerns. Also, results of this review are to be incorporated into the test procedures before the tests are performed again. Other subjects discussed were acknowledged without significant comment.

3. Licensee Action on Previous Inspection Findings

(Closed) Infraction (287/79-18-01) Failure of working drawings to accurately reflect the as built plant. DPC's response, dated August 31, 1979 and NRC's acknowledgement letter, dated September 18, 1979, outlined corrective measures. These were verified by the Resident NRC Inspector. All of the specific discrepancies identified in IE Report 279/79-18 have been corrected. In addition, the licensee has verified that drawings and procedures reflect the as-built plant for the following systems:

- a. High Pressure Injection
- b. Low Pressure Injection
- c. Core Flood
- d. Building Spray
- e. Emergency Feedwater
- f. Component Cooling

4. Unresolved Items

No unresolved items were identified during this inspection.

5. Plant Operations

The inspector reviewed plant operations to ascertain conformance with regulatory requirements, technical specifications and administrative directives. The control room logs, shift supervisors logs and the removal and restoration record books for all three units were reviewed. Interviews with a number of plant operations personnel were held on the day and night shifts.

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Supervisor and control room operator actions were observed during the shift and at shift change. The actions and activities were conducted as prescribed in Section 3.08 of the Station Directives. The number of licensed personnel on each shift met or exceeded the minimum required by IEB 79-05C. Operators were responsive to annunciator alarms and appeared to be cognizant of plant status.

During the period of observations, startup of Units 2 and 3 occurred. Portions of these startups were inspected and witnessed by the inspector. Unit 2 was restarted on 10/23/79 following an outage that began on 9/28/79 to complete tie-in of the newly installed motor-driven emergency feedwater pumps, (MDEFWP).

A functional test, TT/2/A/325/3, Motor Driven Emergency Feedwater Pump to OTSG Flow Test, was successfully completed. This test verified acceptance of the MDEFWP's.

Startup of Unit 3 is discussed in other paragraphs of this report and in IE Inspection Report 50-287/79-29.

The presence of an operator at the steam-driven emergency feedwater pumps was verified throughout the report period.

This requirement ended October 27, 1979 when the emergency feedwater systems were separated from each other.

Throughout the report period, plant tours were taken by the inspector. The areas toured were as follows:

- a. Unit 3 Reactor Building
- b. Unit 1-2 Spent Fuel Pool
- c. Unit 3 East and West Penetration Rooms
- d. Turbine Building
- e. Auxiliary Building
- f. Rod Waste Facility
- g. Electrical Equipment Rooms
- h. Cable Spreading Rooms
- i. Keowee Hydro Station
- j. Unit 3 LPI Room
- h. Unit 3 Reactor Building Spray Pump Room

Observations were made during the tours of housekeeping and cleanliness, ongoing activities, security, equipment status and radiation control practices. In general, housekeeping and cleanliness were found to be satisfactory. Radiation control practices were adhered to during the periods of observation. There were no fluid leaks, or excessive piping vibrations noted during the tour. Lock out tags on equipment required to be tagged were found as specified by Station Directive 3.1.1. Within the areas inspected, no fire hazards were observed.

Within the areas inspected, no items of noncompliance were identified.

6. IE Bulletin 79-15, Deep Draft Pump Deficiencies

The licensee response, dated August 15, 1979, to IEB 79-15 was reviewed by the inspector. The response stated that deep draft pumps for safety-related functions are not used at Oconee Nuclear Station. The inspector concurred with this finding. Safety-related pumps such as high pressure injection, low pressure injection, reactor building spray, emergency feedwater, component cooling, hot well and condensate pumps are of a different type.

7. Emergency Feedwater System Revisions and Additions

The installation of the motor-driven emergency feedwater system (MDEFW) has been completed for all three Oconee Units. Each unit now has one steam-driven emergency feedwater pump (SDEFW) and two MDEFW pumps.

Construction check-out and pre-operation check-out has been completed for all three units. Instrument calibration and performance testing have also been completed for all three units. Verification of these activities, by the Resident NRC inspector, was completed by reviewing the following:

IP/1/A/275/51, MDEFW Pump Safety-Related Instrumentation and System Functional Check

IP/2/A/275/51, MDEFW Pump Safety-Related Instrumentation and System Functional Check

IP/3/A/275/51, MDEFW Pump Safety-Related Instrumentation and System Functional Check

PT/1/A/600/11, Emergency Feedwater Test

PT/2/A/600/11, Emergency Feedwater Test

PT/3/A/600/11, Emergency Feedwater Test

A functional test of the MDEFW pumps was successfully completed at about 15% power on October 23 for Unit 2 and October 30, for Unit 3. A similar test will be run on Unit 1 during the next startup from a cold shut down. Test procedures TT/2/A/325/3 and TT/3/A/325/3 were used to conduct the tests. The tests demonstrated flow capability to the steam generators using the MDEFW pumps. The Resident NRC Inspector witnessed the tests and verified compliance with acceptance criteria.

Since completion of the MDEFW system, each unit now has two MDEFW pumps and one steam driven emergency feedwater pump (SDEFW). On October 28, 1979, each unit was made independent from the other two units. The separation required a change to the electrical circuitry and a change to the valve line up. The change to the electrical circuitry was accomplished using TN/0/A/1421/01, procedure for implementation of NSM-1421. This procedure

changed the auto start circuitry so that a start signal from one unit will not start the other two units' SDEFW pumps, but will start the affected unit's SDEFW pump. A post-maintenance test was also included in this procedure. The work was witnessed by the Resident NRC inspector. The work was completed satisfactorily.

Following the electrical circuitry change, the valve line up was completed. This work was accomplished using OP/1/A/1106/06, OP/2/A/1106/06 and OP/3/A/1106/06. The Resident NRC inspector witnessed part of the system realignment. The licensee performed a double verification of this activity.

Within the areas inspected, no items of noncompliance or deviation were identified.

8. Passive Systems Flow Path Verification

Followup of corrective measures from an incident in which emergency condenser cooling water valves were improperly aligned was completed by the inspector. The licensee committed, in a letter to Region II, NRC, dated July 16, 1979, to develop procedures to periodically check accessible valves in passive safety-related systems.

Procedures have been issued to check accessible valves and breakers on the following systems:

PT/1/A/115/1, Condensor Circulating Water
PT/2/A/115/1, Condensor Circulating Water
PT/3/A/115/1, Condensor Circulating Water
PT/1/A/115/2, Low Pressure Service Water
PT/2/A/115/2, Low Pressure Service Water
PT/3/A/115/2, Low Pressure Service Water
PT/0/A/115/3, High Pressure Injection
PT/0/A/115/4, Emergency Feedwater
PT/0/A/115/5, Low Pressure Injection
PT/0/A/115/6, Penetration Room Ventilation
PT/0/A/115/7, Reactor Building Spray

The procedures listed above have been reviewed by the inspector and found satisfactory. All of the procedures were issued by September 26, 1979, which was within the commitment date of September 30, 1979.

9. Seismic Instrumentation

A representative of Kimometrics, Inc., verified the calibration of the strong motion acceleration system on October 15, 1979. The components checked were the triaxial accelerometer package located in the Unit 1 Tendon Gallery; the starter package, located in Unit 1 Tendon Gallery; and

the recorders, located in the Unit 1 Cable Spreading Room. The starter is required to be set at 0.01G. The "as found" settings were as follows:

<u>Direction</u>	<u>Specification</u>	<u>As Found Setting</u>
Longitudinal	0.01G	+ 0.0100G, -0.0089G
Transverse	0.01G	+ 0.0100G, -0.0102G
Vertical	0.01G	+ 0.0088G, -0.0098

The recorders were found to be operable.

The Resident NRC Inspector witnessed the testing and concurred with the conclusion that the system is in calibration. Therefore, it is believed that the system was in calibration on August 25, 1979 at the time a slight earth tremor was felt at Oconee. (See IE Inspection Report 50-269/79-26).

10. Test Witnessing

The inspector witnessed the tests, listed below, to verify that

- a. an approved procedure was available by all personnel involved in the testing,
- b. test prerequisites were met,
- c. data are recorded to determine if acceptance criteria are met, and
- d. plant systems are returned to proper alignment following completion of the test.

The tests witnessed were:

- a. TT/3/A/203/11, High Pressure Injection Cross-Connect Flow Test
- b. TT/2/A/325/3, Motor-driven Emergency Feedwater Flow Test.
- c. TT/3/A/325/3, Motor-driven Emergency Feedwater Flow Test.
- d. PT/3/A/150/15D, Emergency Injection Check Valve Leak Test.

Personnel actions appeared to be correct and timely during performance of the tests. Sufficient coordination was observed between the operations, performance and instrument personnel involved in conducting the testing. Acceptance criteria were met in each test. Within the areas inspected, no items of noncompliance or deviation were identified.

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