



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

Report Nos.: 50-269/83-08, 50-270/83-08, and 50-287/83-08

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 at Oconee site near Seneca, South Carolina

Inspectors: *J. Bryant*
J. Bryant

4/4/83
Date Signed

D. Falconer
D. Falconer

4/4/83
Date Signed

Approved by: *A. J. Ignatonis*
A. J. Ignatonis, Acting Section Chief
Project Branch No. 2A, Division of Project
and Resident Programs

4/4/83
Date Signed

SUMMARY

Inspection on February 11 - March 10, 1983

Areas Inspected

This routine, unannounced inspection involved 195 inspector-hours on site in the areas of operations, surveillance testing, maintenance, event report review and emergency procedure review.

Results

Of the five areas inspected, no violations or deviations were identified.

DETAILS

1. Persons Contacted

Licensee Employees

- J. Ed Smith, Station Manager
- *J. N. Pope, Superintendent Operations
- T. Owen, Superintendent Technical Services
- J. Davis, Superintendent Mechanical Maintenance
- *R. Rogers, Licensing Engineer
- T. Matthews, Licensing Engineer
- *T. Barr, Performance Engineer
- *C. Vonque, Station Health Physicist
- *D. Rochester, Station Chemist

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

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on March 11, 1983, with those persons indicated in Paragraph 1 above. The licensee concurred with the details discussed and committed to address the further example (Paragraph 5) of an unsecured high radiation area in its response to the violation in Inspection Report 50-269/83-01.

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, February 11 - March 10, 1983, to verify conformance with regulatory requirements, Technical Specifications and administrative controls. Control room logs, shift supervisors logs, shift turnover records, 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 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

Units 1, 2, and 3 Electrical Equipment Rooms

Units 1, 2, and 3 Cable Spreading Rooms

Station Yard Zone within the protected area

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 Directives

Duke Administrative Policy Manual

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

Oconee 1 began the report period operating at 100 percent power. Full power operation continued until the unit tripped on March 9, due to a turbine trip as a result of a momentary loss of EHC DC power.

Reactor coolant pressure remained below the setpoint of the PORV and pressurizer code safety valves, primary and secondary levels remained on scale, no ES setpoints were reached nor was emergency feedwater initiated.

The unit was placed back on line March 10 and at the close of the report period was operating at full power with no major problems.

Unit 2 operated at virtually full power the entire report period with no apparent major problems. On March 10, the reactor tripped during the performance of an RPS on-line surveillance test when a third CRD breaker inadvertently tripped.

Unit 3 began the report period operating at a reduced power of 70 percent due to a low oil level in the 3A1 RCP motor upper bearing. The unit was taken off line February 12 to add oil to the RCP. While starting up on February 14, a leak developed in the EHC supply line to the #3 control valve

for the high pressure turbine and the unit was taken off-line for repairs as detailed elsewhere in this report. Repairs of the EHC leak was completed the same day and the unit placed back on line. Full power operation continued until the unit's shutdown on March 10, to investigate and correct oil leakage from the 3A1 RCP.

Unplanned Liquid Waste Release

On March 10, the licensee experienced an unplanned liquid waste release from the "B" condensate monitor tank. The release was apparently caused by miscommunications between control room operators and interim - radwaste operators. No regulatory limits were exceeded during the release. Details of this event will be carried in IE Report 50-269/83-09.

High Pressure Injection Train Inoperable

While operating at 100 percent power on February 23 at 10:23 a.m., the 'A' train of Unit 3 High Pressure Injection (HPI) was rendered inoperable due to blown control power fuses to valves 3HP-24 ('A' HPI discharge valve) and 3HP-26 ('A' HPI/BWST suction valve).

The blown fuses were caused by control operators short circuiting the valve position switch while attempting to replace the position indication lights for the valves. The degraded condition was immediately diagnosed by shift personnel and prompt corrective action initiated.

The NRC was notified and a controlled reduction in power was begun as required by Technical Specifications at 10:52 a.m. The blown control power fuses were promptly replaced and the unit was returned to 100 percent power at 11:40 a.m.

Unsecured High Radiation Area

On February 27, 1983, the resident inspector discovered the cage door entrance to Room 225, a high radiation area, to be unsecured. The inspector notified the shift supervisor who dispatched operators to secure the door. Investigation revealed dose rates in the room of up to 6000 millirem per hour.

10 CFR 20.203 requires, in part, that all high radiation areas be maintained locked except during periods when access to the area is required, with positive control over each individual entry. The above event constitutes a violation of this requirement. In that the licensee was cited for an unsecured high radiation door in Report 50-269/83-06 and the NRC has not received the licensee's response to the violation, nor the context of proposed corrective actions to be implemented, this violation will not be cited but treated as a second example of the previous violation.

6. 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, that system restoration was 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>
IP/0/A/3000/11	125 VDC Instrument and Control Battery
IP/3/A/0305/03B	RPS Channel B On-Line
IP/0/A/0305/05A	RPS Channel A Rx Bldg Pressure
IP/0/A/0305/05B	RPS Channel B Rx Bldg Pressure
IP/0/A/0305/05C	RPS Channel C Rx Bldg Pressure
IP/0/A/3000/05D	RPS Channel C Rx Bldg Pressure
IP/0/A/3000/05	Diode Monitor Test
IP/0/A/0360/01C	Process Radiation Monitor RIA 45
IP/1/A/0301/03H	NI-8 Power Range Instrument
IP/0/A/0301/03S	Source-Intermediate Range Channel
IP/0/A/0202/01D	Emergency HPI Flow Instrument

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.

Keowee Operability Verification

On February 23 at 3:13 p.m., it was discovered by operators that Keowee Unit 2 had not been operability tested within 8 hours of its initial operability test as required by Technical Specification 3.7.2(a) when Keowee Unit 1 is out of service.

Keowee Unit 1 was removed from service in preparation for preventive maintenance at 7:08 a.m. Prior to removing Keowee Unit 1 from service, Keowee Unit 2 was operability tested as required by Technical Specifications at 7:03 a.m. At 3:13 p.m., operators realized that the 8 hour operability retest requirement for Keowee Unit 2 had been exceeded. The licensee promptly initiated corrective measures and subsequently verified Keowee Unit 2 operable at 3:16 p.m.

The licensee notified the NRC on February 24 of exceeding the required 8 hour operability test by 13 minutes. The licensee has instituted procedural changes which require operators to set a dedicated control room clock to alarm 7 hours after each applicable Keowee operability test to ensure that the 8 hour time requirement is met.

The above event constitutes a violation of Technical Specification 3.7.2(a).

In that the violation meets the criteria set forth in current NRC enforcement policy designed to encourage licensee initiative for self-identification and correction of problems, a notice of violation will not be issued.

Pump Power Monitors

On February 25, the licensee determined that inadequacies in the procedure for surveillance testing the RPS pump power monitors resulted in a violation of Technical Specifications during the performance of portions of the test on each Oconee unit.

Technical Specification 3.5.1.1, Table 3.5.1-1, Item 9, note (h) requires all four RCP pump power monitor channels be operable or three channels operable with the remaining channel in a tripped state while in a startup mode or in a critical state. Contrary to these requirements, a licensee initiated engineering evaluation of the procedures issued to test the RPS pump monitors has revealed that for approximately 2 minutes during the performance of this procedure, one RPS channel is rendered inoperable and not placed in a tripped state.

The licensee notified NRC of the procedural inadequacy and the subsequent violations of Technical Specifications on February 25. Procedural changes have been initiated to place the inoperable RPS pump power monitor channel in a tripped state.

The above event constitutes a violation of Technical Specification 3.5.1.1.

In that the violation meets the criteria set forth in current NRC enforcement policy designed to encourage licensee initiative for self-identification and correction of problems, a notice of violation will not be issued.

7. 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>
02108B	LPSW to HPI Motor Cooler Flow Meter
02714B	'1A' CST Pump
02804B	EPSL Start-up Circuit Phase 'A'
02808B	2FDW - 106
02615B	'2A' HPI Pump
02679B	#3 CV EHC Leak
91135B	Unit 3 personnel Hatch
54697B	Mechanical Snubber Inspection
02611B	'2B' Seal Supply Filter
53483B	1HPSW-366
02573B	2A Seal Supply Filter
02707B	1B Seal Supply Filter

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.

Electro-Hydraulic Control Oil Leak

On February 14, the licensee reduced Unit 3 power to take the turbine/generator off-line to facilitate repairs to the Electro Hydraulic Control (EHC) line to high pressure turbine control valve 3. During operation, operators had discovered a pinhole size EHC oil leak. The leak occurred along a straight run of approximately 3/4 inch EHC piping to control valve 3. The EHC system is normally pressurized to 1600 psig.

Investigation revealed that the leak had been caused by excessive friction from an adjoining pipe. The licensee investigated similar configurations in the EHC system. The leak was repaired by placing a swig-lock fitting over the leaking section of EHC piping and the unit was placed back on line.

8. Core Flood Tank Sample Line Containment Isolation Valve

On March 3, a licensee initiated engineering evaluation, of procedures to assure correct positioning of containment isolation valves, revealed that each unit had been operating with manual containment isolation valve CP-19 open.

Valve CP-19 is the outside containment isolation valve in the 1 inch diameter core flood tank sample line located in the high radiation area penetration room. The valve had been procedurally maintained open to facilitate sampling of the core flood tanks. The inside containment motor operated isolation valve and the two in series local sample point isolation valves were maintained closed except during sampling periods. Valve CP-19 did not appear on any containment manual isolation valve checklist procedures and thus was never verified to be in the correct position as required by Technical Specifications.

Licensee evaluation determined that CP-19 had remained open on each unit since July, 1975 per a procedural change instituted to facilitate chemistry sampling of the core flood tanks and thereby reduce radiation exposure, since CP-19 is located in a high radiation area. A safety evaluation was performed for this procedural change and the change was reviewed and approved by the operations superintendent and technical review committee.

The licensee notified NRC of the discovery on March 3. Manual containment isolation valve CP-19 was promptly closed on each unit. Procedural changes

have been instituted to correct the identified inadequacies. Licensee engineering evaluation of plant procedures is continuing and no additional major inadequacies have been identified.

The above event constitutes a violation of Technical Specification 6.4.1.b which requires written procedures with appropriate check-off lists and instructions be provided for normal startup, operation and shutdown of the complete facility and of all systems and components involving nuclear safety. In addition, the licensee did not accomplish Administrative Policy Manual procedure step 4.2.4.1.e which requires the safety evaluation of procedural changes provide the basis for determining that the change does represent a change to the station as described in the FSAR and does require a change to the station Technical Specifications.

In that the violation meets the criteria set forth in current NRC enforcement policy designed to encourage licensee initiative for self-identification and correction of problems, a notice of violation will not be issued.

9. Emergency Procedure Review

The resident inspection staff reviewed the following emergency procedures which were approved January 24, 1983:

- EP/0/A/1800/04, Loss of Reactor Coolant
- EP/0/A/1800/08, Steam Supply System Rupture
- EP/0/A/1800/14, Loss of Steam Generator Feedwater
- EP/0/A/1800/15, Uncontrollable Flooding Turbine Building
- EP/0/A/1800/17, Steam Generator Tube Leak/Rupture

The above procedures appeared to be technically accurate, complete with regards to the information needs of the operator and comprehensible in format, vocabulary and sentence structure. No violations or deviations were identified.

10. TMI Action Items

The status of selected TMI action items is categorized below. The complete portions were verified by the resident inspection staff. The licensee provided the status or delay justifications by letter to the Nuclear Regulatory Commission dated November 15, 1982 and March 1, 1983.

II.B.2 Plant Shielding

Reach rod modification to containment sump chemical addition valves have been completed on Units 2 and 3. This completes all plant shielding related modification identified in the design review.

II.B.3 Post Accident Sampling System

The gaseous sample portions have been completed on each unit and procedure approved for use. Installation of the liquid sample system has been completed on each unit; however, valve failures in the intermediate position during functional checkout of the system on Units 1 and 2 have delayed operability verification of this system. Anticipated completion dates have been extended to the end of the next refueling outages for each unit, September 1983, December 1983 and July 1984, respectively.

II.E.1.1. Auxiliary Feedwater System Modification

Per the SER for license amendments 110, 110, 107 dated April 8, 1982 this item is closed on Units 2 and 3. Unit 1 discharge pressure initiation circuitry modifications will be completed during the Cycle 8 refueling outage scheduled for September, 1983.

II.F.1(1) Noble Gas Effluent Monitor

These monitors have been returned to the vendor for modifications twice due to erratic indications. The vendor has since replaced each with a new monitor; however, erratic indications persist on Units 1 and 3, rendering them inoperable. The Unit 2 monitor is working correctly and considered operable. If the problems with the Unit 1 and 3 monitors cannot be corrected, another vendor will be used to replace these monitors. Anticipated operability of the Unit 1 and 3 monitors is June 1, 1983. If new monitors are required, anticipated replacement is not until April 30, 1984.

II.F.1(6) Containment Hydrogen Monitor

The system has been completed and procedures approved on each unit. This item is closed.

II.F.2(3) Inadequate Core Cooling

The NRC informed Duke Power Company by letter dated February 1, 1983 that the system proposed in the May 25, 1982 submittal did not meet the functional requirements described in the December 10, 1982 Order e.g., 1) did not monitor coolant inventory over the range from the vessel upperhead to the bottom of the hot leg; 2) did not provide the d/p measurement range extending from the top of the hot leg candy cane to the low point on the hot leg; 3) did not adequately address the monitoring of pump power or pump motor current as a way of trending the Reactor Coolant System void content when the pumps are running.

A re-submittal has been requested.

11. Review of Licensee Event Reports

The inspectors performed a review of nonroutine event reports to verify that the report details met license requirements, identified the cause of the

event, described corrective actions appropriate for the identified cause, and adequately addressed the event and any generic implications. In addition, the inspectors examined selected operating and maintenance logs, and records and internal incident investigation reports. Personnel were interviewed to verify that the report accurately reflected the circumstances of the event, that the corrective action had been taken or responsibility assigned to assure completion, and that the event was reviewed by the licensee, as stipulated in the Technical Specifications. The following event reports were reviewed:

(Closed) LER-269/81-17: The failed 74GV-2 relay was replaced. The replacement relay was calibrated, set points adjusted, and tested per procedure PT/O/A/4980/27D. Evaluation did not reveal a significant failure history of these relays. This item is closed.

(Closed) LER-269/82-11: The results of the licensee's investigation into failures in the Keowee Woodard Governor System and potential consequences of such failures were reported to the NRC in LER-269/83-01. This item is closed.

(Closed) LER-269/81-25: Valve LPSW-24 operating position has been modified to preclude excessive vibration. This item is closed.

(Closed) LER-269/82-14: Reactor Building Cooling Unit 1A dampers were adjusted to correct back-flow problems to preclude thermal overload trips at high speed. This item is closed.

(Closed) LER-269/82-15: Procedures OP/1, 2, 3/A/1102/01, Controlling Procedure for Unit Startup and OP/1, 2, 3/A/1102/02, Reactor Trip Recovery have been revised to ensure the procedural requirements correspond to the Technical Specifications. This item is closed.

(Closed) LER-269/82-09: The deficient diaphragms have been replaced and the reactor building hydrogen analyzer systems are operable on each unit. This item is closed.

(Closed) LER-270/81-14: The loose piping was removed, inspected and reinstalled. The reservoir was refilled and the pump verified to be operable. This item is closed.

(Closed) LER-270/81-15: The leaking impulse line to the flow transmitter was repaired under work request number 15514. This item is closed.

(Closed) LER-270/82-12: Corrective actions have been verified by the resident inspector staff. This item is closed.

(Closed) LER-287/81-15: Subject of violation 287/81-18-01. This item is closed.

(Closed) LER-287/81-16: The defective logic board was replaced and the channel C pump power monitor was tested and declared operable. This item is closed.