



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
230 PEACHTREE STREET, N.W. SUITE 818
ATLANTA, GEORGIA 30303

IE Inspection Report Nos. 50-269/76-13, 50-270/76-13 and 50-287/76-13

Licensee: Duke Power Company
Power Building
422 South Church Street
Charlotte, North Carolina 28201

Facility Name: Oconee Units 1, 2 and 3
Docket Nos.: 50-269, 50-270 and 50-287
License Nos.: DPR-38, DPR-47 and DPR-55
Category: C, C and C

Location: Seneca, South Carolina

Type of Inspection: Routine, Unannounced

Dates of Inspection: November 16-19 and November 30 - December 3, 1976

Dates of Previous Inspection: October 13-15, 1976

Principal Inspector: T. N. Epps, Reactor Inspector
Reactor Projects Section No. 2
Reactor Operations and Nuclear
Support Branch

Accompanying Inspectors: None

Other Accompanying Personnel: None

Principal Inspector: M. V. L. Bule for 12/27/76
T. N. Epps, Reactor Inspector
Reactor Projects Section No. 2
Reactor Operations and Nuclear
Support Branch
Date

Reviewed By: M. V. L. Bule for 12/27/76
R. C. Lewis, Chief
Reactor Projects Section No. 2
Reactor Operations and Nuclear
Support Branch
Date

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SUMMARY OF FINDINGS

I. Enforcement Items

None

II. Licensee Action on Previously Identified Enforcement Matters

Licensee corrective action on item I.A.1 of IE inspection report 50-269, 270, 287/76-6 remains open. (Details I, paragraph 4)

III. New Unresolved Items

76-13/1 Verification of Redundant Equipment Operability

Redundant component operability verification prior to maintenance is not always required. (Details I, paragraph 6.e.)

IV. Status of Previously Reported Unresolved Items

Not inspected.

V. Unusual Occurrences

See Details I, paragraph 6.

VI. Other Significant Findings

None

VII. Management Interviews

Meetings were held on November 19 and December 3, 1976, by T. N. Epps with J. E. Smith and J. W. Hampton respectively to discuss the findings of this inspection presented in the Details of this report.

DETAILS I

Prepared by:

M. V. Luskula for
T. N. Epps, Reactor Inspector
Reactor Projects Section No. 2
Reactor Operations and Nuclear
Support Branch

12/27/76
Date

Dates of Inspection: November 16-19 and November 30 -
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Reviewed by:

M. V. Luskula for
R. C. Lewis, Chief
Reactor Projects Section No. 2
Reactor Operations and Nuclear
Support Branch

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Date

1. Individuals Contacted

Duke Power Company (DPC)

Oconee Personnel

J. E. Smith - Manager, Oconee Nuclear Station
J. W. Hampton - Manager, Administrative Services
L. E. Schmid - Superintendent of Operations
O. S. Bradham - Superintendent of Maintenance
R. M. Koehler - Superintendent of Technical Services
R. T. Bond - Technical Services Engineer
J. N. Pope - Operating Engineer
G. A. Ridgeway - Assistant Operating Engineer
W. R. Campbell - Reactor Engineer
W. M. Harris - Operating Engineer
D. Hunter - I&E Supervisor
L. Knight - I&E Technician
Other Operations Personnel

Corporate Office

M. Tuckman - Staff Engineer (Licensing)

Nuclear Regulatory Commission

D. Neighbors - Nuclear Reactor Regulation (Oconee Project Manager)
F. Clemenson - Nuclear Reactor Regulation
P. Atherton - Nuclear Reactor Regulation

2. Plant Operations

Reviews conducted, in this part of the inspection, are summarized below. All 3 units were operating during this inspection.

a. Records

The inspector reviewed shift supervisor's and control room log books for the two weeks ending on November 18, 1976, on Units 1 and 2 and for a one month period ending on November 17, 1976, on Unit 3. Recent control room log sheets, work orders and the out of normal log were also reviewed on all 3 units. The above records appeared to conform to sections 6.5, 3.0 and 4.0 of the Technical Specifications.

b. Control Room Observations

The inspector observed control room data, switch positions and monitoring instrumentation to verify the following instrumentation to be operational on each unit in accordance with Technical Specifications (TS):

BWST Level - T.S. 3.3.1.e
CF Tank Pressure and Boron Concentration - T.S. 3.3.3
Reactor Power Range Channels - T.S. 3.5.1
RCS Pressure Instruments - T.S. 3.5.1

The inspector also verified that operating control rod group overlap was within Technical Specification 3.5.2.5 requirements and that control rod overlap requirements of T.S. 3.5.2.2.a were met.

Discussions were held with reactor operators concerning control room alarm indications. Heat tracing alarms were on in the Unit 1 and 3 control rooms. This was due to several local heat tracing alarms being on and acknowledged in the auxiliary building. The licensee took action to assure that the alarms were functioning properly. Heat tracing was not observed to be inadequate on any safety systems.

The control rod drive fault alarm was also on in the Unit 3 control room. The licensee stated that this was due to a problem with the alarm system and was being investigated.

The inspector also verified that control rooms were staffed to meet the requirements of Technical Specification Table 6.1-1.

Radiation monitoring instrumentation was observed on the Unit 1 air ejector to be reading approximately 6.5×10^4 cpm, as the licensee had stated, due to a primary to secondary leak in the 1B steam generator. The licensee stated that this reading would be caused by a .05 gpm leak and that if the air ejector reached 6×10^5 cpm and if air ejector grab samples reached 0.01 micro-curies per millileter indicating a 1 gpm leak, the unit would be shut down for repair.

c. Plant Tour

The inspector toured various portions of the facility on 3 different occasions. These tours included the turbine building and auxiliary building and the Lake Keowee condenser circulating water system discharge structure.

The licensee showed the inspector a Unit 3 hotwell pump suction header that was deflected such that one of 3 expansion joints was misaligned several inches. The licensee dye penetrant inspected the appropriate welded joints on the header and on an 8-inch diameter emergency feedwater line connecting to the header. The licensee stated that no adverse indications resulted from the dye penetrant testing.

During the tour the inspector observed approximately 10 drums full of used oil and other debris stored on the basement floor of the turbine building. This was identified as a possible fire hazard to the licensee. The licensee stated that the material was to be removed.

3. Turbine Building Flooding

Three Nuclear Regulatory Commission personnel from the Office of Nuclear Reactor Regulation visited the site on Friday, November 19, 1976, to observe equipment and gather information on conditions related to the turbine building flooding incident (RO-287/76-18) of October 9, 1976. The personnel are involved in reviewing the safety implications associated with the turbine building flooding and proposed corrective actions.

4. Previous Items of Noncompliance

The inspector reviewed licensee corrective actions on noncompliance item I.A.1 of IE Inspection Report 50-269, 270, 287/76-6. This item remains open pending further review.

5. Organization and Administration

Reviews were conducted, during this inspection, to verify that the station organization meets the requirements of Technical Specification 6.1. This review included personnel conducting reviews onsite and serving on the Nuclear Safety Review Board (NSRB) at the licensee's corporate office and discussions and observations by the inspector.

The inspector questioned how the NSRB meets Technical Specification 6.1.3.4 which defines items included in NSRB audits. The NSRB Chairman stated that the NSRB takes credit for QA audits conducted by the site QA organization. The inspector reviewed QA records of audits of corrective actions on incidents affecting nuclear safety (Technical Specification 6.1.3.4.C). It was determined that QA audits meet the frequency requirements of Technical Specification 6.1.3.4.C. The inspector had no further questions on this subject.

6. Reportable Occurrences

The following reportable occurrences were reviewed at the site during this inspection:

- a. RO-269/76-15 involving isolation of the 230 kv yellow buss during electrical breaker testing, on September 30, 1976, was reviewed. This incident resulted from a breaker failure relay malfunction. Corrective actions were verified and there were no further questions.
- b. RO-269/76-14 involved exceeding control rod insertion limits. Review of station records and discussions with licensee personnel showed the cause to be rapidly increasing power (25% per hour) during recovery from a reactor trip with transient xenon conditions.

Reactor power was increased from 20 percent to 70 percent in 2 hours and then to 90 percent approximately two hours later. Power imbalance became a problem so demineralized water was added to the reactor coolant system to drive control rods in but xenon was being reduced at the same time and the control rods were inserted past the control rod insertion limit. This was contrary to Technical Specification 3.4.2.5.c and Figure 3.5.2-1A1. Licensee corrective actions stated in the licensee's event report were verified and the inspector had no further questions.

- c. RO-270/76-12 involved an inoperable containment isolation valve. This was reviewed during a previous inspection (IE report 50-269, 270, 287/76-12) and there were no further questions.
- d. RO-270/76-11 involved isolation of the 230 Kv switchyard, Red Buss and startup transformer CT2 on September 24, 1976. This was contrary to Technical Specification 3.7.2.a which allows only one startup transformer to be out of service, and was caused by an error in the implementation of a station modification. The affected equipment was returned to service within 18 minutes of the incident.

The inspector had no further questions.

- e. RO-270/76-9 resulted from taking LPI train "A" out of service without verifying Train "B" operability.

Technical Specification 3.3.7 requires that prior to initiating maintenance on any HPI, LPI, LPSW, RB spray or RB cooling component, the duplicate (redundant) component shall be tested to assure operability. The Bases of the subject Technical Specification states that the allowable maintenance period is acceptable if the operability of equipment redundant to that removed from service is demonstrated immediately prior to removal. The specification is unclear on whether to test a redundant pump when a pump is taken out of service by performing maintenance on a valve in the same train. This is a new unresolved item.

- f. RO-270/76-10 involved increased activity in the component cooling system resulting from letdown cooler leakage. The leaking cooler "B" was isolated and the "A" cooler is presently being used. The licensee plans to replace the "B" cooler. The inspector had no further questions.
- g. RO-287/76-17 resulted from a defective motor which caused a reactor building cooling unit to be inoperable.

Conditions of Technical Specification 3.3.6.d were met and corrective actions were verified. There are no further questions on this item.

- h. RO-287/76-16 involved loss of power to some ES equipment due to failure of a static inverter. The inverter was repaired and returned to service within 12 hours which is within the time allowed by Technical Specification 3.7.2.(d). There are no further questions on this item.

- i. RO-287/76-13 involved an inoperable containment isolation valve in the containment sampling system. Action was taken by the licensee to meet Technical Specification 3.6.4.b.2. The inspector verified that the valve was repaired and there were no further questions.
- j. RO-287/76-15 involved an erroneous data input to the plant computer which caused an error in the plant heat balance from which core thermal power is determined. This input error resulted in a 9 percent error in thermal power such that the indicated power level was 44 percent when actual power was 53 percent. The reactor was operated at the above power level for 26 hours before the error was discovered and corrected.

The licensee is reviewing proposed administrative controls for computer software. This item will receive further review to determine that the administrative controls are appropriate to prevent recurrence. This incident was contrary to Technical Specification 2.3 which defines reactor power trip setpoints.

- k. RO-287/76-12 involved loss of a motor control center feeding Reactor Building (RB) Cooling Unit 3B and three ES RB isolation valves. Redundant equipment was operable and the motor control center in question was out of service for nine 9 minutes. A station modification is to be completed by January 1, 1976, which will reroute the power supply to RBCU's and a study of the breaker coordination for 600 volt ES motor control centers is to be completed by the same date.

This item will receive future review.

- l. RO-287/76-14 involved failure to sample core flood tanks, after makeup, for boron concentration, six times during June, 1976.

This was contrary to Technical Specification 4.1.2. Corrective action was reviewed and the inspector had no further questions.

7. LPI Motor Bearings

The inspector discussed LPI motor locking devices used on Westinghouse motors that could be damaged if they used the type of locking nuts with threaded nylon inserts. A licensee representative stated that the Unit 3 LPI pumps were inspected during the recent refueling outage and were verified to not have the nylon type inserts. Units 1 and 2 LPI pump motors were not of the type that could have used the nylon insert locking devices.

8. Caustic Mix Tank

Review of the caustic mix tank location and NaOH concentration showed the tank to contain a 50 percent concentration of NaOH and the tank is located on the second floor of the auxiliary building. Weekly visual inspections of the contents of the tank are conducted by chemistry personnel. This system would be manually operated after a loss of coolant accident for the purpose of adding NaOH to the LPI System to neutralize the boric acid effect on equipment.

9. IE Bulletins and Circulars

- a. IEB-76-02 The licensee's response dated May 5, 1976, stated that 50 GE type HFA relays as described in IE Bulletin 76-02 were used in safety-related applications. The coils of these 50 relays will be replaced with the recommended Lexan type coils by January 15, 1977. This item remains open.
- b. IEB-76-03 The licensee's letter dated May 5, 1976, stated that no GE type STD relays as described in IE Bulletin 76-03 were used at Oconee. This item is closed.
- c. IEB-76-05 and 76-06 These Bulletins are closed based on licensee letters dated April 30, 1976 and July 30, 1976, stating that the subject equipment is not used at Oconee.
- d. IEC-76-02 This circular is closed based on the licensee's letter dated October 11, 1976, stating that Westinghouse BF and BFD relays are not used in safety-related systems at Oconee.