



UNITED STATES
NUCLEAR REGULATORY COMMISSION

REGION II
101 MARIETTA STREET, N.W.
ATLANTA, GEORGIA 30303

Report Nos.: 50-269/84-23, 50-270/84-22, and 50-287/84-24

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 Units 1, 2, and 3

Inspection Conducted: August 11 - September 10, 1984

Inspectors: C. W. Burger, for 10/1/84
J. Bryant Date Signed

C. W. Burger, for 10/1/84
K. Sasser Date Signed

Approved by: Vergil H. Brownlee 10/2/84
V. Brownlee, Section Chief Date Signed
Division of Reactor Projects
Section 2A

SUMMARY

Scope: This routine, announced inspection involved 240 resident inspector-hours on site in the areas of operations, maintenance, surveillance, engineered safety features, fuel handling, and open items.

Results: No violations or deviations were identified.

8411130503 841002
PDR ADOCK 05000269
Q PDR

REPORT DETAILS

1. Licensee Employees Contacted

- *M. S. Tuckman, Station Manager
- *J. N. Pope, Superintendent of Operations
- *T. Barr, Superintendent of Technical Services
- J. Davis, Superintendent of Maintenance
- *R. Bond, Compliance Engineer
- *T. Matthews, Compliance Engineer
- *R. Rogers, JSRG

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 September 13, 1984, with those persons indicated in paragraph 1 above.

3. 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 on night shifts, during weekdays, 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 the 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
- Units 1 and 2, Spent Fuel Pool

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, August 11 - September 10. On September 5, Unit 2 reduced power to 25% for several hours to patch a pinhole leak on an extraction steam line, then returned to full power. This repair is discussed in more detail later in this report. On September 9, Unit 2 completed ten years of operation; it also achieved the longest continuous on line run of a B&W reactor, having completed 275 days as of September 9.

Unit 3 operated at essentially full power until August 14 when a loss of feedwater anticipatory trip shut down the reactor. This event is discussed in detail later in the report. The steam generator tube leak discussed in the two previous monthly reports continues at approximately 0.03 gpm.

4. Surveillance Testing

The surveillance tests listed below were reviewed and/or witnessed by the inspectors 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 tests 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, test data were acceptable and system restoration was completed.

The following completed surveillance work requests were reviewed:

- WR 52885C - Reactor Coolant Makeup Pump Statalarm Test
- WR 52963C - CRD Response Time Test
- WR 13075B - RPS Power Range Calibration
- WR 57458C - ES System Logic Channel 5 Functional Test
- WR 55009A - Source Range-Intermediate Range Channel Test
- WR 56844 - Monthly Keowee 125 v DC Instrument and Control
Battery Test
- WR 55441A - PM on Diode 3ADB
- WR 55442A - PM on Diode 3ADC
- WR 55440A - PM on Diode 3ADA

All aspects of the following surveillances were witnessed and procedures and results reviewed.

PT/2/A/600/12 Unit 2 Turbine Driven Emergency Feedwater Pump Performance Test

OP/0/A/1103/13 Unit Reactor Coolant System Leakage Determination

OP/O/A/1102/20V, Unit 1 Primary Nuclear Equipment Operator Rounds
(enclosure 5.12)

No violations or deviations were identified.

5. 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.

The following completed work requests were reviewed:

- WR 12990B - Repair Power Supply Cable to RIA-58, Unit 2
- WR 51902C - Replace Gasket on Emergency Hatch Doors
- WR 92149B - Install Strongbacks, Unit 1
- WR 91830B - Replace "B" Penetration Room Ventilation
System Filters, Unit 3
- WR 53156C - Add 10" Dow Corning Foam to Fire Barrier 3-M-F-77
- WR 13603B - Replace 3MS-92, TDEFWP Relief Valve
- WR 14380B - Repair 3HP-14, Valve Stuck in "Bleed" Position
- WR 14067B - Clean "1B" Seal Supply Filter

No violations or deviations were identified.

6. Transport of Scanner Over Spent Fuel Pool

The licensee reported that on July 9, 1984, a gamma scanner was removed from the Unit 1 and 2 spent fuel pool and was replaced on August 27, 1984. The engineer in charge of the operation stated that on both occasions one end of the scanner momentarily swung over two spent fuel elements in the outer edge of the fuel racks. The gamma scanner weighs approximately 3600 pounds. Technical Specification 3.8.14 states that no suspended load of more than 3000 pounds will be transported over the spent fuel pool.

The fuel pool bridge crane auxiliary hoist was used to lift the load. This hoist is rated at 4000 pounds and has a monthly and annual inspection program. The inspections were up to date. The procedure in use is a generic procedure which only references the technical specifications for movement over the pool and hoist inspection. Three fuel elements were moved in the pool prior to the operation to avoid passing the load over them.

Inspection of the spent fuel pool, the gamma scanner, and the area through which the scanner had to be moved indicates that the procedure did not require adequate preparation for the job. The corridor over which the scanner was moved was barely wider than the scanner. In the event of a

hoist, cable or yoke failure, it would have to be assumed that the scanner would fall straight down through the water, undeflected by any object, to avoid striking the spent fuel.

The generic procedure did not appear to be adequate in addressing the possible hazards involved and the considerations that should be made prior to moving heavy objects over the fuel pool. This is an apparent violation of Criterion V of Appendix B to 10 CFR 50. Criterion V, Instructions, Procedures, and Drawings requires that activities affecting quality be prescribed by instructions or procedures appropriate to the circumstances and that the activities be accomplished in accordance with these procedures.

The licensee has committed to changing the procedure by addressing the hazards involved and the considerations required prior to moving heavy objects over the fuel pool. In addition, the licensee has committed to a review of other procedures to insure that similar problems don't exist or that similar problems are corrected.

A notice of violation will not be issued for this event. The NRC enforcement policy is designed to encourage licensee initiative for self-identification and correction of problems, and the violation meets all of the criteria set forth in the enforcement policy (10 CFR Part 2, Appendix C). The licensee's commitments as described above will be tracked as inspector followup item 50-269/84-23-01 (Inadequate Spent Fuel Pool Procedure).

7. Unit 3 Reactor Trip

On August 15, Unit 3 tripped from 100% power due to loss of main feedwater flow. The event was initiated when maintenance personnel accidentally broke an instrument air line which controlled the demineralizer outlet valves; the valves closed causing loss of flow to condensate booster pumps. Bypass valves opened but could not open rapidly enough to prevent booster pumps tripping on low suction pressure. Loss of the booster pumps caused main feedwater pumps to trip on low suction pressure, resulting in an anticipatory trip of the reactor.

Operator response was proper immediately after the trip and the unit was stabilized on emergency feedwater flow (EFDW) with the steam generator levels at approximately 25 inches. There was no ESF actuation.

Approximately 16 minutes after the trip, main feedwater pump A (MFDW) was reset to reestablish normal feedwater flow. When MFDW discharge pressure reached 750 psig. EFDW discharge valves closed, according to design. SG pressure at this time was 1000 psig; therefore, there was no feedwater flow. SG levels decreased until they reached 12 inches, the bottom of the instrument range. Operators noticed the low levels and immediately opened EFDW valves and increased speed of the MFDW pump. Levels remained bottomed out for about nine minutes.

Primary system temperature had risen 20° to ~575° and pressurizer level increased to ~300", though primary system pressure remained constant at 2150 psig. There was no pressurizer relief valve release. Primary system temperatures turned around as soon as EFDW valves were opened but indicated SG levels did not respond until five minutes later. EFDW flow was secured and all systems remained normal.

Control operators were following the emergency procedure for loss of main feedwater when the MFDW pump was reset. EP/O/A/1800/14 has a step which dictates resetting of the MFDW pumps. This is followed by a caution step which states that EFDW valves should be put in manual prior to resetting the MFDW pump. The control operators did not proceed to the caution step at that time.

The automatic closing of the EFDW valves feature is part of a design modification. This feature is included in the control operators training course.

Having the caution step follow the action step appears to be a deficiency in the procedure. The procedure will be revised to place the caution before the action step and other procedures will be examined for similar faults. The licensee also intends to reevaluate the automatic closing design feature.

Through this appears to be a violation of 10 CFR 50 Appendix B, Criterion V, Instructions, Procedures and Drawings, it will not be cited since it meets the conditions of 10 CFR Part 2, Appendix C.

8. Pinhole Leak in Steam Line - Unit 2

On August 5, a pinhole leak was detected in a 24 inch extraction line which branches off from a 42-inch high pressure turbine exhaust line. The 24-inch line is one of two which feed the "C" reheaters. The other 24-inch line failed catastrophically in an elbow just off the 42-inch line on June 28, 1982. These lines are nominally 0.375 inch wall thickness and carry steam at 180 psig.

The leak found by the licensee in August was in a straight section immediately downstream of the elbow located in the same relative position as the one which failed in 1982. The leak was about 1½ inches from the weld which connected the straight section to the elbow.

UT measurements just below the weld and in the leak area showed wall thickness of 0.12 and 0.14 inches. At three inches from the leak, the thickness was about 0.16 and at six inches 0.25. Minimum acceptable wall thickness, according to the licensee, is 0.143 inches.

Reactor power was reduced to 25% in order to reduce line pressure to near atmospheric and a 13" by 15" patch was welded over the leak, with the leading edge of the patch coincident with the weld to the elbow. The reactor was then returned to full power.

9. Radwaste Building Fire

On June 6, a minor fire occurred on a scaffold in the radwaste building (under construction) at approximately 6:00 p.m. The inspector witnessed performance of the fire team. Response was rapid and efficient; the fire was extinguished in a few minutes and no harm was done to plant equipment.

10. Inspector Followup Items

(Closed) (IFI 50-270/84-21-01). A new discharge pressure gauge was installed on HPI pump 2A. The performance test was reported on the HPI pump with satisfactory results as verified by the inspector.

11. TMI Action Items (NUREG-0737)

(Closed) Item II K.2.8. Upgrade Auxiliary Feedwater System. NUREG 0737 states that evaluation of Item K.2.8 is being performed under Item II.E.1.1, Short and Long Term Feedwater System Evaluation. No separate implementation is required. Item II.E.1.1 was closed out in IE Reports 82-04 and 83-36. For the above reasons II.K.2.8 is considered closed for Oconee Unit 1, 2, and 3.