UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA STREET, N.W.
ATLANTA, GEORGIA 30323

Report Nos.: 50-269/85-09, 50-270/85-09, and 50-287/85-09

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 Conducted: April 22-26, 1985

Inspectors: D. P. Loveless for — 6/7/85
B. T. Debs — Date Signed

D. P. Loveless for — 6/7/85
L. P. Modenos — Date Signed

D. P. Loveless — 6/7/85
D. P. Loveless — Date Signed

Approved by: C. Julian — 6/7/85
C. A. Julian, Section Chief — Date Signed
Division of Reactor Safety

SUMMARY

Scope: This routine, unannounced inspection entailed 103 inspector-hours on site in the area of maintenance activities.

Results: No violations or deviations were identified.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

*S. Tuckman, Station Manager
*T. B. Owen, ONS Superintendent of Maintenance
*R. T. Bond, ONS Compliance Engineer
*W. W. Foster, ONS Maintenance
*G. Davenport, ONS Performance
*J. T. McIntosh, ONS Superintendent of Station Services
*T. Glenn, ONS Maintenance
*T. C. Matthews, ONS Compliance - Technical Specialist

NRC Resident Inspector

*J. Bryant
K. Sasser
L. King

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on April 26, 1985, with those persons indicated in paragraph 1 above. The inspectors described the areas inspected and discussed in detail the inspection findings listed below. No dissenting comments were received from the licensee. The licensee did not identify as proprietary any of the materials provided to or reviewed by the inspectors during this inspection. Following Regional review, the status of the unresolved items was reviewed with the Station Manager during an NRC telecon of May 29, 1985. The Station Manager stated that it is his view that no violation occurred.

3. Licensee Action on Previous Enforcement Matters

This subject was not addressed in the inspection.

4. Unresolved Items

Two unresolved items were identified during this inspection (Paragraph 6b and 7b.)

5. Corrective Maintenance (62702)

The inspectors reviewed the corrective maintenance program to assure the licensee had established procedures, review and approval of maintenance requests, performance of maintenance activities, and identification of

appropriate hold points in accordance with their Technical Specifications and regulatory requirements.
Included in this evaluation was a review of the following:

Work Requests
Maintenance Procedures
Removal and Restoration of Equipment

The following procedures and directives were reviewed in conjunction with this evaluation:

Maintenance Manual

Work Request Initiation and Initial Processing
(Maintenance Directive III.A.)

Work Request Planning
(Maintenance Directive III.B.)

Post-Maintenance Performance Tests
(Maintenance Directive III.F.)

Maintenance Personnel Requirements for Procedure Qualification
(Maintenance Directive II.H.)

Nuclear Maintenance Data Base Data Entry
(Maintenance Directive IV.B.1.)

The inspectors selected the following maintenance activities from the last outage and reviewed the documentation.

a. Work Request No. 54300C, "Remove, Inspect, Repair as Necessary and Replace Reactor Coolant Pump (RCP) 2B1"

The following procedures were employed in the completion of the work on the RCP:

TM/2/A/1310/2	"RCP-2B1 - Casing Stud Removal"
MP/2&3/A/1310/22	"Pump-Bingham - Reactor Coolant - Closure Stud Inspection - Removal and Replacement"
OM/2&3/A/1310/31	"Pump-Bingham - RC; Removal, Inspection Repair and Replacement"
OM/2201/1133-1134	"Bingham Installation, Operation, and Maintenance Instruction Manual"
Work Request No. 57729B	"Seal Removal and Replacement"

MP/2&3/A/1310/32	"RC Inspection Repair of Motor Stand"
MP/O/A/1800/1	"Tool & Materials Inventory Checklist on Open Safety-Related Systems"
MP/O/A/1800/34	"Couplings, Grayloc, Disassembly and Reassembly"
MP/O/A/1800/3	"Flanges; Torquing"

The following procedures were employed in the completion of the work on a control rod at location E-5 under Work Request No. 54810L:

MP/O/A/1150/2A	"Reactor Vessel; Closure Head, Replacement"
MP/O/A/1150/3	"RV Closure Head Stud Detensioning and Removal"
MP/O/A/1150/2	"RV, Closure Head, Removal"

The following procedures were employed in the completion of the work on the plenum under Work Request No. 57675B.

TM/2/A/1150/3	"RV - Inspection of Plenum"
WR 57707B	"Couple Axial Power Shaping Rods (APSR)"
MP/O/A/1140/9	"CRD - APSR - Coupling"
WR 50900D	"Pull Leadscrew, Inspect, and Replace Leadscrew E-5"
TM/2/A/4000/41	"CRD - Shim Drive - Leadscrew Uncoupling Removal, Reinstallation and Coupling"
WR 54811C	Shim Drive Parking.
MP/O/A/1800/1	"Tool and Material Inventory Checklist on Open Safety-Related Systems"

No discrepancies were identified involving the maintenance procedures, work requests, and qualified individuals assigned to do the work. Review of the QA/QC audits conducted by the site, revealed that QA/QC has written a number of Nonconforming Item Requests (NIRs) related to maintenance activities. The following NIRs were reviewed by the inspector:

Serial No. O-1286
Serial No. O-1306
Serial No. O-1319

Inspectors reviewed a cross-section of Work Requests from both the instrument and electrical and the mechanical maintenance groups. These documents were reviewed for the following:

1) To insure working copies of the procedures had been compared to controlled copies at specified intervals;

2) To insure that all steps in the procedure determined N/A had been initialed by a supervisor; and
3) To insure that at least one of the technicians performing the work had been properly trained on the procedures.

No violations or deviations were identified.

6. Preventive Maintenance (62702)

a. The inspectors reviewed the licensee's Preventive Maintenance (PM) program to ensure adequacy and proper procedural controls. The following procedures and directives were reviewed in conjunction with this evaluation (Those already listed in section 5 of this report are not repeated):

Scheduling Preventive Maintenance
(Materials Manual 3.2.1)

Preventive Maintenance Program
(Maintenance Manual Directive IV.E)

The inspectors, in addition, completed a review of the controls and audits of the PM program provided by the licensee's Equipment Data Base.

The PM program at Oconee consists of all periodic maintenance performed on the plant including: maintenance surveillance requirements, rebuilding of safety-related and non-safety related equipment, changing filters, gaskets, etc., and lubrication schedules.

A PM is produced as a Work Request about two weeks before the desired completion date. The work requests are automatically generated by the licensee's Equipment Data Base (EQDB). After being printed, the Work Request is reviewed by EQDB personnel to ensure completeness and correct numbering.

At this time, the PMs are compiled with all other Work Requests (WR) and processed as follows:

(1) A clerk logs WRs into the Nuclear Maintenance Data Base (NMDB) for tracking.

(2) The planners set up a master schedule and publish a daily schedule that goes to the field supervisor.

(3) Supervisors are responsible for each data point on the WR and track the work.

(4) Finished work WRs go to the NMDB clerk who enters the work as completed and in review. At this point, the EQDB automatically calculates the new performance date.

(5) The completed WR package is reviewed by the EQDB personnel to ensure proper signoffs.

(6) Another NMDB clerk closes out the WR and enters the date work started and the supervisor in charge of the work.

(7) At this time, non-safety related PMs are sent to the plant history files.

(8) Safety-related PMs are sent to file via a Quality Control review. Further action is taken as necessary.

Should a Technical Specification (TS) related PM or a PM on any safety-related equipment remain undone past its scheduled completion date, there is a program designed to keep from violating maximum completion time limits. When the WR is written, a violation date is printed on it with respect to maximum TS limits. Within six days of the violation date, the NMDB clerk issues a late letter to the foreman in charge of the WR. He either completes the WR or gives justifiable reason for not completing it (i.e., equipment out of service). Three days before the violation date, an additional late letter is sent to the foreman's supervisor. Finally, on the day of the violation, the NMDB clerk directly calls the Supervisor to inform him of the need for immediate action.

The inspector discussed two possible problem areas with the aforementioned late process system. The licensee's Materials Manual 3.2.1, "Scheduling Preventive Maintenance," Attachment 1 states that the maximum interval between 2-week PMs is 21 days. However, the Oconee TS states that bi-weekly Surveillance Requirements will be performed within a maximum of 20 days. Licensee resolution of this apparent discrepancy will be tracked as Inspector Followup Item (IFI 50-269, 270, 289/85-09-01).

The inspector also noted that licensee personnel had stated that equipment recently upgraded to the category, "Safety-Related"may still have PMs performed under "B" procedures designed for non-safety related equipment. Only PMs performed under "A" procedures receive the benefit of the late PM process. Therefore, any safety-related PMs still performed under "B" procedures may not be tracked by the late process system. The inspector discussed the above concern with licensee personnel by telecon on April 30, 1985. The licensee agreed at this time to review this concern.

The inspector also expressed concern that the PM program at Oconee does not currently contain a method for determining the effectiveness of the program. Licensee management told the inspectors that a program of this nature is currently under development, which will be used to determine the adequacy of PM frequencies and to trend equipment failure for enhancement of the program. The inspectors will review the

aforementioned program during a future inspection (IFI 50-269, 270, 289/85-09-02).

b. While reviewing the licensee's performance of safety-related maintenance and technical specification required surveillances, the inspector observed that a number of licensee intra-station letters reporting the delinquency of a certain calibrations were on file. Specifically, procedure IP/O/A/0253/05A and IP/O/A/0253/05B, "Reactor Building Hydrogen Sampling System Monthly Check" were being tracked as not being completed on schedule. Responses by the licensee instrument group indicated that they were awaiting information from the hydrogen analyzer vendor to change the accuracy tolerances stated in the aforementioned procedures.

Historically, the aforementioned hydrogen analyzing system was installed by the licensee to comply with NUREG 0737 Item II.F.1.6 which requires that a continuous indication of hydrogen concentration in the containment atmosphere shall be provided in the control room. Measurement capability shall be provided over the range of 0 to 10% hydrogen concentration under both positive and negative ambient pressure. The NUREG further states that continuous indication of hydrogen concentration is not required during normal operation; however, continuous indication and recording shall be functioning within 30 minutes of the initiation of safety injection. Additionally, the accuracy and placement of the hydrogen monitors shall be provided and justified to be adequate for their intended function.

On March 18, 1983, Duke Power Company (DPC) was issued an NRC Order confirming DPC's commitment to implement those post-TMI related items as set forth in NUREG 0737 applicable to the Oconee station. Attachment 1 of the Order states that Item II.F.1.6 had been completed for all Oconee units by January 1, 1982. Regarding the justification of the hydrogen monitoring system accuracy, DPC provided NRC-requested instrument accuracy information in a May 31, 1983 letter to Mr. Harold R. Denton, Director of the Office of Nuclear Reactor Regulation, NRC. An overall system uncertainty was provided as ±2.96%. The NRC's Safety Evaluation of NUREG 0737 Item II.F.1.6 was enclosed in a September 1, 1983 letter from the NRC to DPC. The Safety Evaluation concludes that the accuracy values provided by DPC are consistent with the present state of the art and will provide information over the intended range of the containment hydrogen monitoring system that is sufficiently accurate and useful to allow the plant operator to adequately assess the hydrogen concentration within containment. The Safety Evaluation summarily concludes that the licensee has met all the requirements of NUREG 0737 Item II.F.1.6 and finds the design of the hydrogen monitoring system acceptable.

By a letter dated May 10, 1983, COMSIP, Inc., the vendor for the DPC hydrogen monitors, provided DPC with a 10 CFR 21 notification regarding the questionable reliability of the resin bed configuration associated with the licensee's installed hydrogen analyzers. A review of DPC internal correspondence indicates that DPC notified their affected

plants in June and July of 1983 of the 10 CFR 21 notification. Inspector discussions with Oconee compliance personnel and corporate engineering staff indicated that both the Oconee and McGuire nuclear stations determined that this problem, as it pertains specifically to their plants, is not reportable to the NRC.

As a result of the licensee's evaluation of the 10 CFR 21 notification, an expeditious priority was not assigned to performing a modification of the resin bed configuration. The licensee considered the aforementioned modification to be an enhancement of the system. Although, under accident conditions the accuracy of the system could become degraded, the licensee considered that alternatively:

(1) They had available the pre-TMI installed hydrogen analyzing system.

(2) The Post Accident Sampling System could be modified after an accident to provide hydrogen monitoring.

(3) The hydrogen recombiners are available after an accident to prevent hydrogen buildup in the affected containment atmosphere.

On March 1, 1984, approximately 10 months after the COMSIP notification, the licensee began writing a Nuclear Station Modification (NSM) to change the configuration of the resin beds.

On January 7, 1985, approximately 10 months after the NSM preparation began, the NSM was approved for implementation.

The inspector reviewed completed licensee procedure IP/O/A/0253/5A & 5B, R. B. Hydrogen Sampling System Monthly Check, for Unit 1 from December 1984 through April 1985. The following information was noted:

Date Performed	Unit 1 Train A		Train B	
IP/O/A/0253/5A	As Found Condition	/ As Left Condition	As Found Condition	/ As Left Condition
12/18/84	*OOC	Recalibrated	OOC	Recalibrated
01/17/85	OOC	Recalibrated	OOC	Not Recalibrated
03/04/85	Not Performed	No Action	OOC	Not Recalibrated
04/15/85	**In Calibration	No Action	**In Calibration	No Action

*OOC - Out of Calibration
**Accuracy tolerances relaxed from ±1.5% to ±5.0%

Licensee personnel indicated that as a result of the repeated as found unsatisfactory calibration results, the licensee contacted COMSIP to aid in the evaluation and correction of the hydrogen analyzers. According to licensee personnel, the vendor stated that the installed equipment could not meet the tolerances specified by the licensee which subsequently resulted in the licensee relaxing the accuracy tolerances from ±1.5% full scale to ±5% full scale. The licensee had performed a 10 CFR 50.59 evaluation which indicated such a change did not present an unreviewed safety quesiton.

Currently, licensee procedure OP/O/A/1102/22 concerning the use of the hydrogen analyzer states that the Reactor Building Hydrogen Analyzer System provides continuous indication and shall be functional within 30 minutes of an ESF actuation and provides an alarm at 3.5% hydrogen concentration in containment atmosphere. Step 2.1 of OP/OA/1102/23 concerning the use of the licensee's hydrogen recombiner states that the system is not required to be in service until hydrogen concentration reaches 3.5%.

The NRC order requires that the hydrogen monitors provide a continuous indication. Technical Specifications have not yet been implemented at Oconee for these monitors to specify what action is to be taken should the monitors become inoperable. The licensee has, however, established a monthly calibration procedure. Due to poor performance as exhibited by the requirement for recalibration nearly every month, the licensee apparently decided to leave the monitors out of calibration for a period of time. This action appears contrary to the NRC order.

The inspector expressed concern that the current 3.5% may actually represent a 4.0% explosive hydrogen concentration in containment due to increased instrument tolerance. The inspector informed licensee management that the aforementioned licensee's maintenance history of their hydrogen analyzers and their apparent inoperability for a period of time would be further evaluated by the staff of the NRC Region II office as an Unresolved Item (URI 269, 270, 287/85-09-03).

During a subsequent telephone conversation of May 29, 1985, the Station Manager stated that step 2.9 of the referenced procedure calls for placing the hydrogen recombiners on line of 0.5% hydrogen. He stated that a further review will be performed to determine the impact of the relaxed tolerance on emergency procedures. He also stated that in his opinion, the monitors were continually operable, even though not within the tighter tolerance; therefore, no violation occurred.

7. Independent Inspection (92706)

a. During the inspection on April 23, 1985, the licensee declared a site alert due to a loss of most annunciators in the Unit 1 control room. The inspector observed that the guidance provided operators for this situation appears in the licensee Annunciator Response Procedures. For ICS inverter system trouble, the manual action required is to:

(1) Dispatch an operator to the ICS inverter to determine the trouble.

(2) Notify the proper personnel to initiate any repairs that are required.

It was later determined that control power had been lost to the main feed pumps and the main turbine throttle valves. This condition existed for approximately 43 minutes and was unknown by the control room operators. The inspector expressed a concern to licensee management that control room operators were not procedurally alerted to this problem. This item of concern will be followed by the NRC resident inspectors and addressed in their next inspection report subsequent to this event.

The inspector also observed that licensee procedure RB/O/B/1000/01 Enclosure 4.1.8 states that a criteria for declaring a site area emergency is: 1) all alarms lost for 15 minutes; and 2) Shift Supervisor's judgement that a transient has occurred or is in progress. The inspector observed that the suggested criteria which appears in NUREG 0534 does not provide a 15 minute grace period. Licensee representatives were informed by the inspector that the justification and validity of this delay period would be looked at during subsequent inspections by NRC Region II emergency preparedness inspectors (IFI 269, 270, 287/85-09-04).

b. While reviewing licensee calibration procedure IP/O/A/310/4D, "ESS Analog Channel 'B' R. B. Pressure Switch Calibration and Pressure Switch Contact Buffer Tests", the inspector noted that the desired actuation setpoint for containment spray is stated as 10 psig. As left setpoint data on the aforementioned calibration data sheets indicates the 10 psig is considered a nominal value. The inspector compared the procedural reactor building spray initiation setpoint with the setpoint stated in the licensee's Technical Specifications and Final Safety Analysis Report (FSAR). The inspector noted that reactor building spray setpoint as stated in Technical Specification (TS) 3.5.3 is $\leq$30 psig. TS 3.5.3 states that the basis for the 30 psig setpoint for the high reactor building pressure signal is to establish a setting which would be reached immediately in the event of a design basis accident and cover the entire spectrum of break sizes.

The inspector noted that the $\leq$30 psig value is inconsistent with the licensee's FSAR. FSAR 6.2.2.3 states that the reactor building spray system will deliver 3,000 gal./min. through the spray nozzles within 37.5 seconds after the reactor building reaches 10 psig. Additionally, FSAR 6.2.2.2.7 states that the reactor building spray system will be activated at a reactor building pressure of 10 psig.

Section 15 of the FSAR states that spray is assumed available at 75 seconds following a LOCA. The inspector reviewed the containment pressure vs. time curves associated with various break size LOCAs which appear in the licensee's FSAR Section 15. The inspector noted that for

Figure 15.14-21, "LOCA - Reactor Building Pressure For the .5 Ft^2 Cold Leg Pump Suction Break", if a setpoint of 10 psig were used to initiate reactor building spray, full spray would be achieved in less than 75 seconds. For the same curve, if a setpoint of 30 psig were used, the initiation signal would not be reached until approximately 90 seconds after the break and full spray would not be realized for an additional 37.5 seconds. Thus, the assumption of full spray is not born out by the resulting curve. Licensee management indicated that they would take action to resolve this apparent inconsistency and provide the NRC with a justification for the resolution. The inspector stated that this item would be considered unresolved until resolution was obtained (URI 269, 270, 287/85-09-05).