



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA STREET, N.W., SUITE 2900
ATLANTA, GEORGIA 30323-0199

Report nos.: 50-269/95-30, 50-270/95-30, and 50-287/95-30

Licensee: Duke Power Company
422 South Church Street
Charlotte, NC 28242-0001

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: December 17, 1995 - January 27, 1996

Inspectors: *P. E. Harmon* 2/16/96
P. E. Harmon, Senior Resident Inspector Date Signed

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Reactor Projects Branch 1

SUMMARY

Scope: Inspections were conducted by the resident and regional inspectors in the areas of plant operations, maintenance and surveillance testing, onsite engineering, and plant support. It included an inspection of open items and licensee event reports.

Results: Operations

One Violation with two examples was identified involving errors made by Operations personnel which resulted in wrong components being manipulated (paragraph 2.c).

Prompt operator response was credited with limiting the consequences of an inadvertent boration event (paragraph 2.b).

ENCLOSURE 3

Maintenance

A routine surveillance found an inoperable containment isolation valve, (paragraph 3.b.(6)).

Engineering

One Deviation was identified which involved maintaining the Spent Fuel Pool water levels approximately two feet lower than the levels specified in the Final Safety Analysis Report (paragraph 4.b).

One Unresolved Item was identified concerning the adequacy of an engineering analysis performed to support the installation of propane storage tanks and space heaters (paragraph 4.b).

Plant Support

The licensee's emergency response capability was maintained at a fully proficient level of operational readiness. Program strengths included an aggressive schedule of plant-wide training drills, involving annual participation in the Control Room Simulator by each of the five Operations shifts; a continuing culture of strong management support for the program; and emergency response facilities that were well designed and maintained (paragraph 5.b-g).

REPORT DETAILS

Acronyms used in this report are defined in paragraph 9.

1. Persons Contacted

Licensee Employees

- **Brandt, P., Technical Specialist, Emergency Planning
- **Brown, R., Senior Technical Specialist, Emergency Planning
- Brown, E., Radiation Protection Staff Scientist
- *,**Burchfield, E., Regulatory Compliance Manager
- Coutu, T., Operations Support Manager
- *Coyle, D., Systems Engineering Manager
- *Davenport, G., Operations Manager
- Davis, J., Engineering Manager
- Farmer, T., Nuclear Instructor
- *,**Foster, W., Safety Assurance Manager
- *Hampton, J., Vice President, Oconee Site
- Heminger, J., System Engineer
- Hollingsworth, S., Operations Shift Manager
- Hubbard, D., Maintenance Superintendent
- **Jennings, C., Emergency Planning Manager
- *Little, C., Electrical Systems/Equipment Manager
- *Nix, D., Regulatory Compliance
- *Peele, B., Station Manager
- Robinson, D., Radiation Protection Shift Supervisor
- Rothenberger, G., Operations Superintendent
- **Smith, J., Regulatory Compliance
- *Sweigart, R., Work Control Superintendent

Other licensee employees contacted included office, operations, engineering, maintenance, chemistry/radiation, and corporate personnel.

2. Plant Operations (71707)

a. General

The inspectors reviewed plant operations throughout the reporting period to verify conformance with regulatory requirements, Technical Specifications (TS), and administrative controls. Control room logs, shift turnover records, temporary modification log, and equipment removal and restoration records were reviewed routinely. Discussions were conducted with plant operations, maintenance, chemistry, health physics, instrument & electrical (I&E), and engineering personnel.

Activities within the control rooms were monitored on an almost daily basis. Inspections were conducted on day and night shifts, during weekdays and on weekends. Inspectors attended some shift

ENCLOSURE 3

changes to evaluate shift turnover performance. Actions observed were conducted as required by the licensee's Administrative Procedures. The complement of licensed personnel on each shift inspected met or exceeded the requirements of TS. Operators were responsive to plant annunciator alarms and were cognizant of plant conditions.

Plant tours were taken throughout the reporting period on a routine basis. During the plant tours, ongoing activities, housekeeping, security, equipment status, and radiation control practices were observed.

b. Plant Status

Unit 1 operated at 100 percent power throughout the inspection period.

With one exception, Unit 2 operated at 100 percent power throughout the inspection period. On January 25, 1996, an estimated 90 gallons of borated water was inadvertently pumped into the Reactor Coolant System (RCS) due to a leaking boric acid system valve, 2CS 72. Prompt operator detection and corrective actions limited the power reduction to approximately 98 percent for a brief time period.

Unit 3 operated at 100 percent power throughout the inspection period.

c. Wrong Unit, Wrong Component Events

On January 22, 1996, a Unit 1 control room operator inadvertently started the Unit 2 Turbine Driven Emergency Feedwater (TDEFW) pump. The operator was following written instructions for testing the Unit 1 TDEFW pump, and mistakenly placed the Unit 2 pump control switch in the RUN position. The two pumps' control switches are physically close to each other on the control panel. There are no physical barriers or markings separating the Unit 1 control section from Unit 2.

The evolution being performed was Performance Test PT/1/A/150/22/L, TDEFW Pump Cooling Water Supply Valve Test. Step 12.9 directs the operator to place the Unit 1 switch in RUN. The pump would not actually have started, since previous steps had tripped the pump turbine trip and throttle valve. Placing the switch in RUN would only have initiated cooling water to the pump, which was the feature to be tested. While reading the procedure, the operator performing step 12.9 mistakenly positioned himself at the Unit 2 control switch. When he placed the Unit 2 TDEFW pump switch in RUN, the pump started. A Unit 2 control room operator immediately recognized that the Unit 1 operator had started the

ENCLOSURE 3

Unit 2 pump by mistake, and informed the control room Senior Reactor Operator and the Unit 1 operator of the problem. The Unit 2 pump was then shut down.

The licensee performed a Human Performance Analysis and determined the root cause to be a failure of the Unit 1 operator to properly perform the required self-checking procedure of matching the switch name plate with the specific action detailed in the procedure. Failure to follow the requirements of procedure PT/1/A/150/22/L, step 12.9 is considered Example 1 of Violation 50-269,270,287/95-30-01, Wrong Unit and Component Events Resulting From Failure To Follow Procedure.

On January 23, 1996, Operations personnel were in the process of removing Auxiliary Building Exhaust Fan 1-16 from service for maintenance. The removal from service and red-tagging of the exhaust fan was performed per Enclosure 3.1 of OP/O/A/1102/06, Removal and Restoration Procedure, in conjunction with specific component instructions on the red tag (#96-0081-5). When the non-licensed operator (NLO) arrived at Motor Control Center (MCC) 2XR, he mistakenly opened the breaker on Air Handling Unit (AHU) 2-16 instead of exhaust fan 1-16. When the NLO returned to the Unit 1 control room, he found the power indicating light for the exhaust fan was still on. He then reported this to the Unit 1 Control Room Operator. The NLO was directed back to the MCC, where the wrong component error was identified. The AHU was reset and the exhaust fan was then properly tagged.

The licensee conducted a Human Performance Evaluation and determined that self-checking was not performed in this instance. The pre-job briefing had identified that the Unit 1 exhaust fan was powered from a Unit 2 MCC, but no particular precautions were identified. The failure of the NLO to follow the requirements of procedure OP/O/A/1102/06, Enclosure 3.1, and the instructions on the equipment tag is considered Example 2 of Violation 50-269,270,287/95-30-01, Wrong Unit and Component Events Resulting From Failure To Follow Procedure.

Both the wrong unit/component events resulted in equipment operations of minor safety significance. The immediate corrective actions taken were properly evaluated and performed. In addition, the Site Vice President mandated a site-wide one-hour work stoppage on January 25, 1996. During the work stoppage, supervisors and managers discussed the recent errors and management expectations to all site personnel.

Within the areas reviewed, a violation with two examples was identified.

ENCLOSURE 3

3. Maintenance and Surveillance Testing (62703 and 61726)

- a. Maintenance activities were observed and/or reviewed during the reporting period to verify that work was performed by qualified personnel and that approved procedures adequately described work that was not within the skill of the craft. Activities, procedures and work orders (WO) were examined to verify that proper authorization and clearance to begin work was given, cleanliness was maintained, exposure was controlled, equipment was properly returned to service, and limiting conditions for operation were met.

Maintenance activities observed or reviewed in whole or in part are as follows:

- (1) Preventive Maintenance (PM) 12 Cylinder Diesel Engine, WO 95067029

The inspector reviewed activities in progress on January 10, 1996, during the performance of maintenance procedure PM/O/A/5050/034, Diesels - Standby Shutdown Facility (SSF) - Lower Main Bearings - Inspection. The activity was performed and documented in accordance with the procedure, torque wrenches were within current calibration, and a Quality Control inspector was involved in monitoring the activity. The inspector determined this activity was acceptable.

- (2) Unit 1 Investigate/Repair Main Turbine Oil Tank Temperature Controller, WO 95097758

The inspector observed activities in progress on January 23, 1996, to investigate and repair the temperature controls on the Unit 1 main turbine oil tank. The temperature was varying from 104 degrees F to 125 degrees F when the system was controlling in the automatic mode. The controller maintains the temperature at set-point by varying the Low Pressure Service Water (LPSW) flow to the oil tank cooler. The LPSW flow is controlled by manipulating the position of LPSW control valve 1LPSW-51. The effort involved calibration of the loop instrumentation and was accomplished per calibration procedure IP/O/B/0280/02, Turbine And Auxiliaries Oil Pumping System Instrument Calibration. The inspector concluded that the documentation was current and that the work effort was acceptable.

- (3) Unit 2 Reactor Protection System (RPS) Channel 'B' Main Feedwater and Main Turbine Trip Calibration, WO 95077546

On January 23, 1996, the inspector reviewed activities in

ENCLOSURE 3

progress during the instrument calibrations associated with the 'B' main feedwater pump turbine and the main generator turbine trip controls. The work activity was performed in accordance with instrument procedures IP/O/A/0305/015, Nuclear Instrumentation RPS Removal From and Return to Service For Channels A, B, C, and D, and IP/O/A/0305/010, RPS Channel 'B' Main Feedwater Pumps and Main Turbine Trips Calibration. The inspector concluded that the work observed met acceptable standards.

(4) Repair of 1LP-104 Bleed Off Plug Leak, WO 96000906

On January 2, 1996, the licensee began to experience increased RCS leakage on Unit 1. The licensee made a Reactor Building (RB) entry, and identified that 1LP-104 had a stem leak. The packing on 1LP-104 was tightened. RCS leakage was re-calculated and had reduced significantly. A subsequent entry in the RB identified that the bleed off plug on 1LP-104 was leaking. On January 10, 1996, the licensee incorporated a minor modification, Project Number ONOE-8750, to have a vendor inject sealant into a clamp installed on the body of 1LP-104 to prevent the bleed off plug leak from recurring. The inspector reviewed the corrective minor modification package (WO 96000906) and the licensee's procedure MP/O/A/1800/016, System Leakage Repairs Using Vendor Injection Methods. The completed minor modification appropriately addressed the problem. No problems were identified. The licensee's actions were appropriate in addressing this issue.

(5) Snubber Inspection

On January 23, 1996, Maintenance personnel performing snubber inspections found a snubber on an Auxiliary Steam line with an apparently empty oil reservoir. The procedure which controls disposition of inoperative snubbers, MP/3/A/3018/011, Enclosure 13.5, Inoperative Snubber Data Sheet, requires the immediate notification of Operations when such a condition is found. The Maintenance technician did not inform the appropriate Operations personnel, but proceeded to request assistance from Engineering to evaluate operability of the snubber and the Auxiliary Steam System. Consequently, Operations was unaware of a potential operability concern until the following day. The licensee discovered the omission, and took appropriate actions, including reminding the technicians of the procedural requirements involved.

The inspector considered the licensee's corrective actions in this instance to be appropriate. Plant management

ENCLOSURE 3

emphasized the need to ensure Operations is informed of any condition affecting equipment status or operability. Electronic bulletin board notices, site newspaper articles, and supervisor-led discussion sessions were used to disseminate this message.

(6) PM 2A Reactor Building Spray (RBS) Pump Breaker, WO 95095978

On January 2, 1996, the inspector observed the inspection, cleaning, lubrication and testing of the 2A RBS Pump in accordance with IP/O/A/2001/003A, Inspection and Maintenance of 4.16 KV and 6.9 KV Air Circuit Breakers (ACBs). The inspector verified that the WO had the appropriate authorizations, that the procedure being utilized was a controlled copy, and that all test equipment was calibrated. All activities observed were satisfactory.

(7) Reconnect Wire on Relay K1GBORL63TA/2X, WO 96005442

This work activity corrected a wiring discrepancy associated with a DC turbine bearing oil pump relay (K1GBORL63TA/2X) for Keowee Hydro Unit 1. The inspector noted that this work was done online. The inspector reviewed the electrical drawings and verified that there was no potential impact on emergency operation of the unit due to this work. All activities observed were satisfactory.

(8) Replace Turbine Packing Box Instrument Tubing, WO 95014945

On January 23, 1996, the inspector observed portions of the work in progress to replace Keowee Unit 2 turbine packing box instrument tubing. The work was done in accordance with TN/2/A/OE7256. The inspector verified that the work did not affect unit operability. All activities observed were satisfactory.

- b. The inspectors observed surveillance activities to ensure they were conducted with approved procedures and in accordance with site directives. The inspectors reviewed surveillance performance, as well as system alignments and restorations. The inspectors assessed the licensee's disposition of any discrepancies which were identified during the surveillance.

Surveillance activities observed or reviewed in whole or in part are as follows:

(1) Low Pressure Injection (LPI) Pump Test - Recirculation, PT/1/A/0203/06A

On January 8, 1996, the inspector observed activities in

ENCLOSURE 3

progress during performance testing of the Unit 1 LPI pumps. The test was to verify operability of the pumps, to cycle the associated check valves and to verify that the discharge check valves reseal. The testing was performed in accordance with the procedure to acceptable standards, and the acceptance criteria were met.

- (2) Engineered Safeguards System Logic Subsystem 2, RB Spray Channel 8 Functional Test - IP/0/A/0310/008D

On January 3, 1996, the inspector observed the performance of the quarterly RB Spray Channel 8 Functional Test. The inspector observed activities in progress and verified that the procedure acceptance criteria were met. Activities observed were accomplished in accordance with approved procedures and no discrepancies were noted.

- (3) Unit 1 Control Rod Movement, PT/1/A/600/15

The inspector witnessed the monthly performance test of the Unit 1 Control Rod Movement on January 4, 1996. The purpose of the procedure was to test Control Rod Drive operation under actual operating conditions. The test met the monthly surveillance requirements as specified in TS 4.1.2.

The operators performed the control rod movements per the procedure and were cognizant of plant operating status during the test. The procedure acceptance criteria were met. The inspector concluded that this test was performed to acceptable standards.

- (4) 1A Motor Driven Emergency Feedwater (MDEFDW) Pump Test, PT/1/0600/13

On January 16, 1996, the inspector observed the performance of the quarterly operability test of the 1A MDEFDW Pump. The inspector verified that pump discharge pressure, suction pressure, flow, and vibration data were within the procedure's acceptance criteria. Work activities observed were accomplished in accordance with approved procedures, and no discrepancies were noted.

- (5) Unit 3 TDEFW Pump Test, PT/3/A/0600/12

On January 24, 1996, the inspector observed the performance of the quarterly operability test of the Unit 3 TDEFW Pump. The inspector verified that pump discharge pressure, suction pressure, flow, and vibration data were within the procedure's acceptance criteria.

ENCLOSURE 3

(6) Stroke Test, PT/1/A/O/50/22R

On December 19, 1995, the licensee determined that containment isolation valve IRC-6, had been inoperable from an undetermined time until November 29, 1995. The valve is a motor-operated pressurizer sample valve, which is normally closed. Stroke time testing on November 29, 1995, resulted in a stroke time significantly shorter than expected. Investigation into the cause revealed that the wrong valve operator gear ratio had been installed sometime after 1992. The licensee replaced the gear pack and retested the valve. Later evaluation concluded that the valve would not have been able to shut against maximum d/p during routine sampling if required.

The licensee made the appropriate 10 CFR 50.72 notification and initiated a root cause investigation. The inspectors will track this item by review of the Licensee Event Report, 260/95-08, Containment Isolation Valve Inoperable.

Within the areas reviewed, licensee activities were satisfactory.

4. Onsite Engineering (37551 and 40500)

During the inspection period, the inspectors assessed the effectiveness of the onsite design and engineering processes by reviewing engineering evaluations, operability determinations, modification packages and other areas involving the Engineering Department.

a. Propane Issue

On January 4, 1996, an NLO detected a propane smell in the RB personnel hatch area of the Auxiliary Building. The licensee determined that the propane odor came from a gas space heater at the Unit 3 RB hatch area in the Auxiliary Building that had a blown out pilot light. The licensee shut the pilot valve inlet to isolate the leak. The licensee then opened a roll-up door by the hatch to ventilate the area. This issue was documented in Problem Identification Process (PIP) 0-096-0014. The inspector identified several concerns regarding the use of propane in the Auxiliary Building, and the location of the propane storage tanks (one per unit) near safety-related equipment. The licensee generated PIP 0-096-0025 to disposition the inspector's concerns. The licensee informed the inspectors that the five-hundred gallon propane tanks had been originally installed on or about October 1979, per a work order that the licensee was unable to retrieve. The three tanks were replaced in 1982 with one-thousand gallon tanks. The Unit 2 propane tank is located within a few feet of the Unit 2 Borated Water Storage Tank. The licensee was unable to locate a safety evaluation concerning the installation of the propane tanks. The

ENCLOSURE 3

licensee tagged out the space heaters and isolated the associated propane tanks until the completion of a safety evaluation. The licensee's evaluation will address the safety consequences of having the propane tanks onsite, address the consequences of a propane ignition in the Auxiliary Building, and evaluate the necessity of removing the propane tanks. This item is being documented as URI 50-269,270,287/95-30-02, Propane Issue.

b. Final Safety Analysis Report (FSAR) and Procedural Discrepancy Concerning Spent Fuel Pool (SFP) Level

On January 17, 1996, the inspector identified a discrepancy in the borated water level in the SFP as described in the FSAR and the level referenced in several procedures. FSAR section 9.1.4.2.3 states in part, "The fuel storage racks provide a minimum of 23.5 feet of water shielding over stored assemblies," and procedures PT/O/A/0600/01, Periodic Instrument Surveillance, and MP/O/A/1500/009, Defueling/Refueling Procedure, describe that the SFP level will be maintained greater than -2.0 feet from zero (i.e., normal operating level). The requirement of greater than -2.0 feet from zero translates to a minimum of 21.5 feet of water shielding over the stored assemblies. This issue is being identified as DEV 50-269,270,287/95-30-03, Procedural Discrepancy With FSAR SFP Level. The licensee initiated a PIP 0-096-0110 to address this issue.

Within the areas reviewed an unresolved item and a deviation were identified.

5. Plant Support (71750, 40500, and 82701)

The inspectors assessed selected activities of licensee programs to ensure conformance with facility policies and regulatory requirements. During the inspection period, the areas of Radiological Controls, Physical Security and Fire Protection were reviewed.

a. Radiological Control Area Access

The residents reviewed the licensee's progress in reducing the number of Radiological Control Area access locations. Reducing the number of access locations from 8 to 3 (or fewer) is considered by the licensee to be an improvement in controlling personnel frisking, dosimetry and RWP compliance. The licensee is also making preparations to eliminate the transition or buffer zones between the RCA and the Turbine Building. This will clearly define those areas and their radiological requirements. The licensee has made good progress in this effort.

b. Emergency Plan and Implementing Procedures

This area was inspected to determine whether significant changes were made in the licensee's emergency preparedness program since April 1994, to assess the impact of any such changes on the overall state of emergency preparedness at the facility, and to determine whether the licensee's actions in response to actual emergencies were in accordance with the Emergency Plan and its implementing procedures. Requirements applicable to this area are found in 10 CFR 50.47(b)(16), 10 CFR 50.54(q), Appendix E to 10 CFR Part 50, and the licensee's Emergency Plan.

The version of the Plan in effect at the time of the current inspection was Revision 95-04, which became effective on December 31, 1995. Since the previously referenced April 1994 inspection, the NRC has formally reviewed and approved nine revisions of the licensee's Emergency Plan, with reviews of Revisions 95-03 and 95-04 pending as of the closing date of the inspection in this area.

The inspector reviewed all licensee records regarding the transmittal of Emergency Plan Implementing Procedure (EPIP) revisions to the NRC between April 1, 1994, and the date of this inspection. The records verified that each of the revisions made to the EPIPs during that period had been transmitted to the NRC within 30 days of the implementation date as required.

Changes made since April 1994 in the licensee's emergency preparedness program/capability were discussed with the Emergency Planning Manager. The major changes were determined to be as follows:

- ▶ A dedicated room for briefing/debriefing of damage control teams was added to the Operational Support Center (OSC). Large-scale, wall-mounted plant diagrams were available to facilitate the planning of mission routes during an emergency. Computer terminals in this room allowed Radiation Protection (RP) staff to obtain radiological monitoring system data so that areas of the plant with high radiation levels could be identified and avoided.
- ▶ Implementation of Emergency Action Levels (EALs), based on the NUMARC methodology, occurred on November 1, 1995.

Review of the Plan and EPIPs confirmed that the changes described above were appropriately incorporated into those documents.

The inspector verified that current letters of agreement (i.e., updated within the past three years) existed between the licensee and the offsite support organizations listed in Appendix 5 to the

ENCLOSURE 3

Emergency Plan. Several of the agreements were dated March 1993, and were therefore due for renewal. Also verified through document examination was the licensee's conduct of the required annual review of EALs with state and local government authorities for both 1994 and 1995.

Since the April 1994 inspection, the licensee made three emergency declarations (on 6/15/94, 8/10/94, and 7/18/95) at the NOUE level. The inspector's examination of licensee's documentation of these events concluded that each was correctly classified based on the EALs, and that notifications to offsite authorities were made in accordance with applicable requirements. Two relatively minor PIP items were generated following the licensee's assessment of the 8/10/94 event. No significant response deficiencies were identified by the licensee's review of the other two NOUE declarations.

No violations or deviations were identified.

c. Emergency Facilities, Equipment, Instrumentation, and Supplies

This area was inspected to determine whether the licensee's Emergency Response Facilities (ERFs) and associated equipment, instrumentation, and supplies were maintained in a state of operational readiness, and to assess the impact of any changes in this area upon the emergency preparedness program. Requirements applicable to this area are found in 10 CFR 50.47(b)(8) and (9), 10 CFR 50.54(q), Sections IV.E and VI of Appendix E to 10 CFR Part 50, and the licensee's Emergency Plan.

The inspector toured the Control Room, Technical Support Center (TSC), OSC, and Emergency Operations Facility. Selective examination of equipment and supplies indicated that a high level of operational readiness was being maintained for these ERFs. TSC and OSC radiological kits (including survey instruments) were checked and found to be well organized and maintained.

Based upon ERF walk-downs, observation of licensee activities, review of changes to the EIPs, inspection of completed surveillance procedures, and statements by licensee representatives, the inspector concluded that no degradation of capabilities with respect to the ERFs and their associated equipment had occurred since the NRC inspection of this program area in April 1994. The ERFs were well designed and continued to be meticulously maintained. This area was judged to be a program strength.

No violations or deviations were identified.

ENCLOSURE 3

d. Organization and Management Control

This area was inspected to determine the effects of any changes in the licensee's emergency organization and/or management control systems on the emergency preparedness program, and to verify that any such changes were properly factored into the Emergency Plan and EIPs. Requirements applicable to this area are found in 10 CFR 50.47(b)(1) and (16), Section IV.A of Appendix E to 10 CFR Part 50, and the licensee's Emergency Plan.

The organization and management of the emergency preparedness program were reviewed and discussed with licensee representatives. Although there were no organizational changes since April 1994, a significant personnel change occurred in the management of the emergency program when a new Safety Assurance Manager (to whom the Emergency Planning Manager reported) was assigned on January 1, 1995. Interviews with the Emergency Planning Manager and staff disclosed that these personnel changes had not altered the established culture of strong management support for emergency preparedness at Oconee.

The inspector discussed the status of offsite interfaces with the Emergency Planning Manager. Since April 1994, reassignment of the position of Director, Emergency Preparedness Agency, had occurred in both Oconee County (twice) and Pickens County. The licensee representative stated that these changes had not adversely affected the interfaces with those counties in the area of emergency preparedness.

No violations or deviations were identified.

e. Training

This area was inspected to determine whether the licensee's key emergency response personnel were properly trained and understood their emergency responsibilities. Requirements applicable to this area are contained in 10 CFR 50.47(b)(2) and (15), Section IV.E of Appendix E to 10 CFR Part 50, and the licensee's Emergency Plan.

The training program for the Oconee Emergency Response Organization (ERO) was described in Section O of the Emergency Plan and in the "Emergency Response Training Manual". In an effort to gauge the effectiveness of this training program, the inspector conducted an interview with an Operations Shift Manager (the position designated as Control Room Emergency Coordinator). The purpose of this interview process was to ascertain the Operations Shift Manager's (OSM's) understanding of emergency classification, offsite notifications and Protective Action Recommendations (PARs), site evacuation, emergency worker dose limits, and responsibilities of the Control Room Emergency

ENCLOSURE 3

Coordinator (CREC). The interview, which lasted 90 minutes, began with technical questions relating to the duties, responsibilities, and functions of the CREC during an emergency situation, and then presented four simulated accident scenarios that required event classification and PAR formulation, as appropriate. The inspector delineated the guidelines for the interview at the outset, including the "open book" nature of the evaluation. The Emergency Planning Manager was present during the interview to allow for confirmation and firsthand understanding of observations. The OSM was judged to have demonstrated comprehensive understanding of his duties and responsibilities as CREC in the event of an emergency. All emergency classifications and PARs were timely and correct. No problems were identified during this interview.

The inspector reviewed the licensee's assessment and documentation of ERO performance during the emergency response training drills conducted in 1994-1995. The core of the ERO drill program consisted each year of five drills (one was the required annual exercise), which allowed for participation by all five Operations shifts. In each case, the Control Room Simulator was used to drive the drill play. In addition, during each year, the licensee conducted two site assembly drills and two off-hour response drills (involving actual travel to the plant and activation of ERFs). The licensee's drill critiques identified substantive issues for corrective action, and the status and progress of such planned corrective actions was monitored and tracked through use of the plant-wide PIP system. The inspector reviewed the critique records for indications of repetitive performance problems. No adverse trends were identified. The level of dedication of the licensee's resources to maintaining and improving emergency response capabilities through the conduct of elective drills was indicative of station management's commitment to the emergency preparedness program.

On the limited basis of documental review and the OSM interview, the inspector concluded that the licensee's methodology for training emergency response personnel appeared to be very effective, and that this area of the emergency preparedness program was a strength.

No violations or deviations were identified.

f. Independent Audits and Internal Reviews

This area was inspected to determine whether the licensee had performed an independent audit of the emergency preparedness program, and whether the emergency planning staff had conducted a review of the Emergency Plan and the EIPs. Requirements applicable to this area are found in 10 CFR 50.54(t) and the licensee's Emergency Plan.

ENCLOSURE 3

In the period since the previously referenced April 1994 inspection, the licensee's Regulatory Audit Group conducted two annual independent audits. The inspector reviewed detailed documentation of the 1994 and 1995 audits, the reports of which were respectively identified as NG-94-12(ALL) and SA-95-54(ALL)(RA). Substantive findings were identified by both audits, which appeared to have been thorough, and appropriate corrective actions were completed or planned.

The inspector reviewed records of the annual internal reviews of the Plan and EPIPs for 1994 and 1995. These were performed and documented in accordance with applicable procedures, and adequately assessed program accomplishments and necessary corrective actions.

No violations or deviations were identified.

g. Control Room Emergency Ventilation System (84750)

The inspector interviewed a System Engineer having responsibility for the Control Room Emergency Ventilation System (CREVS) in connection with a potential generic NRC concern regarding the operability of humidistats used to control heaters in such a system. Since the CREVS at Oconee did not utilize heaters, the concern was determined not to be applicable at this facility.

Within the areas reviewed, licensee activities were satisfactory.

6. Inspection of Open Items (92901, 92902 and 92903)

The following open items were reviewed using licensee reports, inspection record review, and discussions with licensee personnel, as appropriate:

a. (Closed) VIO 269,270,287/94-28-02, Compressive Limit For Steam Generator Differential Temperature Not Addressed in Procedures

A dryout of the 3B Once Through Steam Generator (OTSG) occurred on August 10, 1994, during the Unit 3 trip when the associated turbine by-pass valves failed to control the steam header pressure. The licensee became aware of a B & W differential temperature limit (60 degrees fahrenheit) between the OTSG tubes and shell during preparations for refilling the 3B OTSG. The differential temperature was exceeded by 22 degrees. However, the differential limits were not addressed in the licensee's procedure and this omission could have resulted in exceeding these limits by more than what had occurred.

The licensee generated PIP 03-094-1077 to document the Steam Generator dryout, evaluate the event, and describe the corrective

ENCLOSURE 3

actions. As part of these corrective actions, cautions were added (changes #20,24, and 22 for Units 1,2, and 3 Emergency Operating Procedures (EOPs), respectively) in both sections of 502 and 503. These changes alerted the Operator At The Controls (OATC) to the OTSG tube-to-shell compressive temperature limits. This corrective action was documented as being completed in the PIP. The inspector reviewed the Unit 1 EOP and verified that the cautions were implemented in the procedure (i.e., Caution 13.0 in Section 502 and Caution 10 in Section 503). Based on this review and the associated corrective actions, this violation is closed.

- b. (Closed) VIO 50-270/94-36-02, Failure to follow High Pressure Injection (HPI) Restoration Procedure

The licensee had placed the Unit 2 Seal Supply Filter 2A in service with the vent and drain valves open. A leak check was required prior to returning the system to service per requirements specified in Step 2.5 of OP/2/A/1104/02, High Pressure Injection System, but was not performed.

The licensee generated PIP 2-094-1667 which required the individuals involved in the event to review the applicable procedure and propose enhancements. The individuals were counseled in relation to the event, and were required to perform an evaluation of the importance of a thorough review of procedures prior to performing them. Procedure enhancements have been incorporated to verify that vent and drain valves of the seal supply filter be closed prior to placing the filter in service. The procedure enhancements included signoff steps for the vent and drain valve realignment.

The inspector verified the enhancements to OP/1/A/1104/02, Enclosure 6.7, Swapping Seal Supply Filters, were implemented. Based on the corrective actions taken by the licensee, this violation is closed.

7. Review of Licensee Event Reports (92700)

The below listed LERs were reviewed to determine if the information provided met NRC requirements. The determination included: adequacy of description, compliance with TS and regulatory requirements, corrective actions taken, existence of potential generic problems, reporting requirements satisfied, and the relative safety significance of each event. The following LERs were reviewed:

- a. (Closed) LER 287/94-02, Reactor Trip from Blown Control System Fuse Due to an Unknown Cause

On August 10, 1994, while operating at 100 percent full power, Unit 3 tripped as a result of a momentary loss of power to

ENCLOSURE 3

Integrated Control System inverter 3KI. During the course of this event the 3B OTSG was isolated and dried out, and the tube-to-shell delta temperature limit was exceeded for the 3B OTSG. These and other issues associated with this event were discussed in NRC Inspection Reports 50-269,270,287/94-24 and 28. The remaining open issues associated with this event are being tracked under violation 50-269,270,287/94-28-03. This LER is closed.

b. (Closed) LER 270/94-03, Unplanned Reactor Protective System Actuation While Sub-Critical Due to Deficient Work Practices

Oconee Unit 2 experienced an unanticipated RPS trip on July 28, 1994, during a unit shutdown for a SG tube leak. The reactor was sub-critical and all control rods were fully inserted. The OATC placed the RPS in bypass at an RCS pressure of approximately 1700 psig, which shifted the high pressure trip set-point to 1710 psig. The operator continued to reduce RCS temperature/pressure by using the pressurizer spray valve. The lower temperature resulted in a shrink in pressurizer level to below the level setpoint. The makeup valve opened in response to the decreased pressurizer level and began to refill the pressurizer. The added inventory caused an increase in pressure and resulted in reaching the RPS trip setpoint pressure of 1710 psig. The OATC was in the process of pulling the Group 1 control rods out of the core and was unaware of the increasing pressure until the trip occurred.

The licensee determined the cause of the event was the OATC's lack of attention to details in that the operator was distracted with the Group 1 control rod manipulation. The licensee's corrective actions were to re-emphasize to the operators in shift meetings and the training classroom the requirement to monitor the control panel at all times. Control room supervisors were again informed of the requirement for them to be aware of the operator activities and to maintain an overall knowledge of the activities in progress. In addition, operations procedure, OP/1,2,3/A/1102/10, Enclosure 4.2, Hot Shutdown Conditions to 250/350 PSIG Conditions, was revised to allow for placing the RPS in By-Pass at a lower pressure and a note was added to remind the OATC of the changed high pressure setpoint.

Based on the above corrective actions, this LER is closed.

c. (Closed) LER 270/94-04, Unplanned Trip of ES Digital Channels 1-4

An ES actuation occurred during a Unit 2 Refueling Outage on October 21, 1994, with the reactor defueled. The actuation resulted from placing 2 analog channels in Test Trip at the same time. Channel 'A' was inadvertently tripped by the technician during the calibration of Channel 'B'. Equipment utilized in the calibration of ES Channels 'A' and 'B' is located in adjacent

ENCLOSURE 3

cabinets. However, some steps involve work in the 'A' cabinet for calibration of the 'B' Channel per calibration procedure IP/O/A/0310/004B, Engineered Safeguards System Analog Channel B RC Pressure Channel Calibration.

The licensee determined that the root cause of this event was inadequate: (1) work practice; (2) error detection; and (3) self-checking. A deficient procedure contributed to the event in that some relevant information should have been provided. This included the need for a caution statement alerting the individuals that work in both cabinets was required for the calibration of the 'B' train.

The licensee's corrective actions taken to prevent recurrence included adding a caution to IP/O/A/0310/004B, Change #31, to require technicians to return to the proper cabinet after work in another cabinet. Applicable procedures, IP/O/A/0310/14B, IP/O/A/0310/04B, were revised to reference channel and cabinet locations for the appropriate steps. Additional labels were added on the cabinets to enhance identification and add awareness.

Based on these corrective actions, this LER is closed.

- d. (Closed) LER 269/93-06, Design Deficiency Results in a Condition Outside the Design Basis of Containment for a Main Steam Line Break

This LER addresses the potential of over pressurizing the containment during a main steam line break (MSLB) inside containment without the integrated control system or operator action. Accordingly, the licensee made supplemental responses to IE Bulletin 80-04 (dated August 19, 1993 and June 14, 1995) addressing planned system modifications to automatically isolate feedwater to the steam generators during a MSLB, and block the start of the turbine driven emergency feedwater pump. As indicated in Inspection Report 50-269,270,287/95-31, this modification (NSM ON-2873) was verified to be implemented on Unit 1 during the End Of Cycle (EOC) 16 refueling outage. Through a review of the Oconee commitment tracking list, a 13-year NSM schedule, the inspector committed to install modification NSM and Unit 3 EOC 16 refueling MSLB modification in TS a confirmed by the inspector after verifying that the addressed in the Unit 1 OOP/1/A/1102/01, Controlling OP/1/A/1102/10, Controlling OP/1/A/1102/02, Reactor Trip Recovery) and PT/1/A/600/01, Periodic Checks Schedule Sheet. This LER is closed.

how are these commitments to be tracked by US?

13-year NSM commitment to Unit 2 EOC 15 to reflect the were also further concerns appropriately

artup; procedure for unit shutdown; and

ENCLOSURE 3

8. Exit Interview

The inspection scope and findings were summarized on January 31, 1996, by P. Harmon with those persons indicated by an asterisk (*) in paragraph 1. An Interim exit was conducted on January 11, 1996, by J. Kreh with those persons indicated by a double asterisk (**) in paragraph 1. The inspectors described the areas inspected and discussed in detail the inspection results. A listing of inspection findings is provided. Proprietary information is not contained in this report. Dissenting comments were not received from the licensee.

<u>Item Number</u>	<u>Status</u>	<u>Description and Reference</u>
VIO 269,270,287/ 95-30-01	Open	Wrong Unit and Component Events Resulting From Failure to Follow Procedure (paragraph 2.c)
URI 269,270,287/ 95-30-02	Open	Propane Issue (paragraph 4.a)
DEV 269,270,287/ 95-30-03	Open	Procedural Discrepancy With FSAR SFP Level (paragraph 4.b)
VIO 269,270,287/ 94-28-02	Closed	Compressive Limit for Steam Generator Differential Temperature Not Addressed in Procedures (paragraph 6.a)
VIO 50-270/94-36-02	Closed	Failure to Follow HPI Restoration Procedure (paragraph 6.b)
LER 287/94-02	Closed	Reactor Trip From Blown Control System Fuse Due to an Unknown Cause (paragraph 7.a)
LER 270/94-03	Closed	Unplanned Reactor Protective System Actuation While Sub-Critical Due to Deficient Work Practices (paragraph 7.b)
LER 270/94-04	Closed	Unplanned Trip of ES Digital Channels 1-4 (paragraph 7.c)
LER 269/93-06	Closed	Design Deficiency Results in a Condition Outside the Design Basis of Containment for a Main Steam Line Break (paragraph 7.d)

9. Acronyms

ACB	Air Circuit Breaker
B&W	Babcock & Wilcox
CFR	Code of Federal Regulations
CREC	Control Room Emergency Coordinator
CREVS	Control Room Emergency Ventilation System
CS	Coolant Storage System Valve Designator
DEV	Deviation
EAL	Emergency Action Level
EOC	End Of Cycle
EOP	Emergency Operating Procedure
EPIP	Emergency Plan Implementing Procedure
ERF	Emergency Response Facility
ERO	Emergency Response Organization
ES	Engineered Safeguards
FSAR	Final Safety Analysis Report
HPI	High Pressure Injection
I&E	Instrument and Electrical
LER	Licensee Evaluation Report
LP	Low Pressure Injection System Valve Designator
LPI	Low Pressure Injection
LPSW	Low Pressure Service Water
MCC	Motor Control Center
MDEFDW	Motor Driven Emergency Feedwater
MP	Maintenance Procedure
MSLB	Main Steam Line Break
NLO	Non-licensed Operator
NOUE	Notification of Unusual Event
NUMARC	Nuclear Management and Resources Council (now known as Nuclear Energy Institute)
NRC	Nuclear Regulatory Commission
NSM	Nuclear Station Modification
OATC	Operator At The Controls
OP	Operating Procedure
OTSG	Once-Through Steam Generator
OSC	Operational Support Center
OSM	Operations Shift Manager
PAR	Protective Action Recommendation
PIP	Problem Identification Process
PM	Preventive Maintenance
psig	Pounds Per Square Inch Gauge
PT	Performance Test
RB	Reactor Building
RBS	Reactor Building Spray
RCA	Radiation Control Area
RCS	Reactor Coolant System
RP	Radiation Protection
RPS	Reactor Protection System
RWP	Radiation Work Permit

ENCLOSURE 3

SFP	Spent Fuel Pool
SG	Steam Generator
SSF	Standby Shutdown Facility
TDEFW	Turbine Driven Emergency Feedwater
TS	Technical Specifications
TSC	Technical Support Center
URI	Unresolved Item
VIO	Violation
WO	Work Order