UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
SAM NUNN ATLANTA FEDERAL CENTER
61 FORSYTH STREET SW SUITE 23T85
ATLANTA, GEORGIA 30303-8931

October 28, 2002

Duke Energy Corporation
ATTN: Mr. W. R. McCollum
Site Vice President
Oconee Nuclear Station
7800 Rochester Highway
Seneca, SC 29672

SUBJECT: OCONEE NUCLEAR STATION - NRC INTEGRATED INSPECTION REPORT 50-269/02-04, 50-270/02-04, AND 50-287/02-04

Dear Mr. McCollum:

On September 28, 2002, the NRC completed an inspection at your Oconee Nuclear Station. The enclosed report documents the inspection findings which were discussed on October 3, 2002, with Mr. Ron Jones and other members of your staff.

The inspection examined activities conducted under your licenses as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your licenses. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

Based on the results of this inspection, the inspectors identified one issue of very low safety significance (Green). This issue was determined to involve a violation of NRC requirements. However, because of the very low safety significance and because it has been entered into your corrective action program, the NRC is treating this issue as a non-cited violation (NCV), in accordance with Section VI.A.1 of the NRC's Enforcement Policy. Additionally, a licensee identified NCV is listed in Section 4OA7 of this report. If you contest any NCV in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the United States Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001, with copies to the Regional Administrator, Region II; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at the Oconee facility.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system

(ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

Robert Haag, Chief
Reactor Projects Branch 1
Division of Reactor Projects

Docket Nos.: 50-269, 50-270, 50-287, 72-04
License Nos.: DPR-38, DPR-47, DPR-55

Enclosure: NRC Integrated Inspection Report 50-269/02-04, 50-270/02-04, and 50-287/02-04 w/Attachment - Supplemental Information

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U. S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket Nos:	50-269, 50-270, 50-287, 72-04
License Nos:	DPR-38, DPR-47, DPR-55
Report No:	50-269/02-04, 50-270/02-04, 50-287/02-04
Licensee:	Duke Energy Corporation
Facility:	Oconee Nuclear Station, Units 1, 2, and 3
Location:	7800 Rochester Highway Seneca, SC 29672
Dates:	June 30, 2002 - September 28, 2002
Inspectors:	M. Shannon, Senior Resident Inspector S. Freeman, Resident Inspector D. Billings, Resident Inspector E. Christnot, Resident Inspector J. Ennis, Physical Security Inspector (3PP1, 3PP2, 3PP4, 4OA1.3, and 4OA3.3) L. Mellen, Senior Operations Engineer (Sections 1EP1, 1EP4, and 4OA1.2) W. Sartor, Senior Emergency Preparedness Inspector (Sections 1EP1, 1EP4, and 4OA1.2) J. Wallo, Physical Security Inspector (3PP1, 3PP2, 3PP4, 4OA1.3, and 4OA3.3)
Approved by:	Robert Haag, Chief Reactor Projects Branch 1 Division of Reactor Projects

Enclosure

SUMMARY OF FINDINGS

IR 05000269-02-04, IR 05000270-02-04, IR 05000287-02-04, Duke Energy Corporation, 06/30/2002 - 09/28/2002, Oconee Nuclear Station; Other Activities.

The inspection was conducted by the resident Inspectors, one regional based operations engineer, one regional based emergency preparedness inspector, and two regional based physical security inspectors. The inspectors identified one Green finding, which was identified as a non-cited violation. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using the Significance Determination Process (SDP) found in Inspection Manual Chapter 0609. Findings for which the SDP does not apply may be "Green" or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 3, dated July 2000.

A. Inspector Identified Findings

Cornerstone: Mitigating Systems

- Green. The inspectors identified a non-cited violation for the unauthorized design changes to the east penetration room blowout panels which changed the blowout panel design capability to remove water from the auxiliary building following a postulated main feedwater line rupture.

  This issue was considered to be of very low safety significance because at least one train of emergency feedwater would have been available during all of the accident sequences of concern. (Section 4OA5)

B. Licensee Identified Violations

One violation of very low safety significance, which was identified by the licensee, has been reviewed by the inspectors. Corrective actions taken or planned by the licensee appear reasonable. This violation is listed in Section 4OA7 of this report.

Report Details

Summary of Plant Status:

Unit 1 operated at or near 100% rated thermal power (RTP) during the inspection period except for one shutdown and one brief power reduction. The unit was shutdown on August 14, 2002, when the permanent magnet generator on the main turbine failed and for the repair of a service water leak inside containment. The repairs were completed on August 17, 2002, and the unit was returned to 100% RTP. The unit was reduced to 22% RTP on August 25, 2002, to repair a dump valve on a reheater drain tank. The repairs were completed on August 26, 2002, and the unit was returned to 100% RTP.

Unit 2 operated at or near 100% RTP during the entire inspection period.

Unit 3 operated at or near 100% RTP during the entire inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R01 Adverse Weather Protection

a. Inspection Scope

The inspectors reviewed the licensee's implementation of the abnormal procedure for high winds in the area, exceeding 60 mph, which occurred on the afternoon and evening of August 26, 2002. The inspectors verified that the operator's actions specified in the abnormal procedure were taken in a timely manner prior to the onset and during the adverse weather condition and that adequate operator staffing was maintained during this adverse weather condition. The inspectors assessed whether any additional plant modifications, new evolutions, procedure revisions or operator workarounds existed that would pose a challenge to safe plant operation related to the high winds.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment

a. Inspection Scope

The inspectors conducted partial system alignment walkdowns to evaluate the operability of selected redundant trains or backup systems, while the other train or system was inoperable or out of service. The walkdowns included, as appropriate, reviews of plant procedures and other documents to determine correct system lineups, verification of critical components to identify any discrepancies which could affect operability of the redundant train or backup system, and verification that alignment problems that could cause initiating events or affect mitigating systems or barriers were identified and corrected. The following systems were included in this review:

- Keowee Hydro Unit 1 (KHU-1) during inspection and maintenance of KHU-2
- Unit 2B reactor building spray (RBS) during maintenance on 2A RBS
- Unit 3 low pressure service water (LPSW) system during planned maintenance of the 3A LPSW pump, motor, and power supply breaker

b. Findings

No findings of significance were identified.

1R05 Fire Protection

.1 Monthly Fire Protection Inspection

a. Inspection Scope

The inspectors conducted tours of selected areas to verify that combustibles and ignition sources were properly controlled, that fire detection and suppression capabilities were intact, and that related problems were identified and entered into the corrective action program. The inspectors selected the areas based on a review of the licensee's safe shutdown analysis and probabilistic risk assessment based sensitivity studies for fire-related core damage accident sequences. Inspections of the following areas were conducted during this inspection period:

- KHU main transformer
- startup transformers CT-1, CT-2, CT-3
- Unit 1, 2, and 3 cable rooms
- Unit 1, 2, and 3 auxiliary building, west penetration rooms

b. Findings

No findings of significance were identified.

.2 Fire Brigade Drill Performance

a. Inspection Scope

The inspectors observed a fire brigade drill on August 30, 2002. The simulated fire was an electrical fire in a motor control center near the main feedwater pumps and auxiliary feedwater pumps, a plant area important to safety. The inspectors observed the fire brigade performance in terms of the following: (1) protective clothing and self contained breathing apparatus equipment worn at the scene; (2) adequate fire hose available and properly laid out; (3) correct use and implementation of appropriate fire fighting techniques, such as deenergization of energized electrical panels prior to attempting to extinguish the fire; (4) sufficient fire fighting equipment at the scene to perform fire

fighting duties; (5) fire brigade leader's command and control; (6) communications between fire brigade members and with plant operators; (7) checking for fire victims and fire propagation into other plant areas; (8) utilization of pre-plan fire fighting strategies; and (9) implementation of the drill scenario and the drill objectives acceptance criteria. The inspectors attended the post fire drill critique to assess the licensee's ability to identify drill deficiencies and areas for improvement.

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures

.1 Internal Flooding

a. Inspection Scope

The inspectors toured both Keowee hydro units to verify that flood protection features were consistent with the licensee's design requirements and risk analysis assumptions. The inspectors checked the following: sealed electrical equipment, such as conduits; holes or unsealed penetrations in floors and walls between flood areas; operable sump pumps, level alarms, and control circuits including maintenance and calibrations of flood protection equipment; and sources of internal flooding that were not analyzed or not adequately maintained. The inspectors also verified that the licensee identified problems and entered them into the corrective action program at the appropriate level.

b. Findings

No findings of significance were identified.

.2 External Flooding

a. Inspection Scope

The inspectors reviewed the Updated Final Safety Analysis Report (UFSAR), corrective actions from Problem Investigation Process reports (PIPs), and abnormal operating procedures to determine the areas of the plant that were susceptible to flooding from external sources. The inspectors toured exterior portions of the auxiliary building and the standby shutdown facility (SSF) to verify that barriers to external flooding were intact. The inspectors also verified that the licensee identified problems and entered them into the corrective action program at the appropriate level.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification

a. Inspection Scope

The inspectors observed simulator training on August 22, 2002. The scenario involved a seismic event that resulted in equipment and structural damage. This placed the simulated unit in a controlled forced shutdown condition. During the controlled shutdown a main generator load rejection occurred which resulted in a reactor trip. As part of the scenario the operators were required to don a self-contained breathing apparatus. The inspectors observed crew performance in terms of communications; ability to take timely and proper actions; prioritizing, interpreting, and verifying alarms; correct use and implementation of procedures, including the alarm response procedures; timely control board operation and manipulation, including high-risk operator actions; and oversight and direction provided by the shift supervisor, including the ability to identify and implement appropriate Technical Specification (TS) actions.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness

a. Inspection Scope

The inspectors reviewed the licensee's effectiveness in performing routine maintenance activities. This review included an assessment of the licensee's practices pertaining to the identification, scoping, and handling of degraded equipment conditions as well as common cause failure evaluations. For each item selected the inspectors performed a detailed review of the problem history and surrounding circumstances, evaluated the extent of condition reviews as required, and reviewed the generic implications of the equipment and/or work practice problem. For those systems, structures, and components (SSCs) scoped in the maintenance rule per 10 CFR 50.65, the inspectors verified that reliability and unavailability were properly monitored and that 10 CFR 50.65 (a)(1) and (a)(2) classifications were justified in light of the reviewed degraded equipment condition. The inspectors reviewed the following items:

- PIP O-02-03346, Service air moved to a(1) status
- PIP O-01-01402, Unit 1B motor driven emergency feedwater (MDEFW) pump bearing failure

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Evaluation

a. Inspection Scope

The inspectors evaluated, as appropriate for the selected SSCs listed below: (1) the effectiveness of the risk assessments performed before maintenance activities were conducted; (2) the management of risk; (3) that, upon identification of an unforseen situation, necessary steps were taken to plan and control the resulting emergent work activities; and (4) that maintenance risk assessments and emergent work problems were adequately identified and resolved.

- Work Order (WO) 98516200-01, ONOE-17122, Install pressure relief on valve 1MS-156
- WO 98507950, Isolate the high pressure service water (HPSW) cooling water backup supply to the Unit 1 high pressure injection (HPI) pump motor coolers for maintenance
- PIP O-02-03498, Unit 3 turbine driven emergency feedwater (TDEFW) pump removed from service for training
- Unit 1 downpower to valve in moisture separator reheaters
- WO 98501476, Addition of carbohydrazide to the low pressure injection (LPI) system
- MP/0/A/3007/62, Temporary cooling chilled water system with portable chiller
- Risk interaction of Unit 1B MDEFW pump out of service when SSF auxiliary service water (ASW) pump packing failed during testing
- WO 98398118, Remove and install new relay in power supply breaker for 3A LPSW pump motor

b. Findings

No findings of significance were identified.

1R14 Personnel Performance During Nonroutine Plant Evolutions

a. Inspection Scope

The inspectors reviewed personnel performance during selected non-routine events and/or transient operations. As appropriate, the inspectors: (1) reviewed operator logs, plant computer data, or strip charts to determine what occurred and how the operators responded; (2) determined if operator responses were in accordance with the response required by procedures and training; and (3) confirmed that personnel performance deficiencies were captured in the licensee's corrective action program. The non-routine evolutions reviewed during this inspection period included the following:

- Unit 1 rapid shutdown and manual tripping of the main generator on August 14, 2002, due to failed permanent magnet generator
- Unit 1 down power on August 25, 2002, to valve in steam to the moisture separator reheaters

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations

a. Inspection Scope

The inspectors reviewed operability evaluations affecting risk significant systems to assess, as appropriate: (1) the technical adequacy of the evaluations; (2) whether continued system operability was warranted; (3) whether other existing degraded conditions were considered; (4) if compensatory measures were involved, whether the compensatory measures were in place, would work as intended, and were appropriately controlled; (5) where continued operability was considered unjustified, the impact on TS limiting conditions for operation; and (6) that related problems were identified and entered into the corrective action program. The inspectors reviewed the operability evaluations described in the following PIPs:

- PIP O-02-03709, EOP Sequence of Alternate Boron Dilution Path
- PIP O-02-03161, Operability of 3B steam generator due to missing one inch thick plate washers
- PIPs O-02-03079 and 01569, Operability of Unit 2 and 3 siphon seal water relief valves due to lifting during testing and leaking
- PIP O-02-02723, Operability of SSF for the new route during EOP implementation due to Unit 2 OTSG replacement activities
- PIP O-02-03735, 600 V switchgear busses and cabinets not in the PM program (did not affect breakers)
- PIP O-02-03783, Operability of Unit 2 TDEFW pump with bearing oil cooler isolated
- PIP's O-02-02140 and O-02-04778, Operability of safety related 4160 Volt breakers due to potential manufacturing defect resulting in Y relay failures

b. Findings

No findings of significance were identified.

1R16 Operator Workarounds

a. Inspection Scope

The inspectors reviewed the following operator workarounds to verify that the cumulative effects would not reduce the reliability or availability of the system, provide a potential for mis-operation of the system, affect multiple mitigating systems, or affect the operators ability to respond to plant transients and accidents in a timely manner.

- PIP O-02-04760, Operators are required to make volume changes to the reactor coolant system (RCS) in order to obtain a valid RCS leakage. This results in unnecessary RCS volume changes and, if not performed properly, could result in a reactivity event.

- PIP O-01-02804, Operators are required to monitor the HPI, LPI, and RBS pump room temperatures. Failure to identify high temperature and take appropriate actions could affect the pumps capability to perform their accident mitigation function after a design basis event where all cooling is lost and the rooms heat up.

- PIP O-99-03123, Operators are required to manually throttle the HPI, LPI, and RBS pump discharges during a design basis event. If not performed properly this could result in pump run out and damage to the pumps. This, in turn, could affect the capability of the pumps to perform their accident mitigation function.

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing

a. Inspection Scope

The inspectors reviewed post-maintenance test (PMT) procedures and/or test activities for risk significant systems to assess whether: (1) the effect of testing on the plant had been adequately addressed by control room and/or engineering personnel; (2) testing was adequate for the maintenance performed; (3) acceptance criteria were clear and adequately demonstrated operational readiness consistent with design and licensing basis documents; (4) test instrumentation had current calibrations, range, and accuracy consistent with the application; (5) tests were performed as written with applicable prerequisites satisfied; (6) jumpers installed or leads lifted were properly controlled; (7) test equipment was removed following testing; (8) equipment was returned to the status required to perform its safety function; and (9) related problems were identified and entered into the corrective action program. The inspectors observed testing and/or reviewed the results of the following tests:

- PT/0/A/0400/011, SSF Diesel Generator Test, Revision 10 (PMT on July 1, 2002, following 10 year overhaul of diesel)

- PT/0/A/0250/25, A High Pressure Service Water Pump Test, Revision 34
- PT/2/A/0261/10, Essential Syphon Vacuum System Test, Revision 12
- TN/1/A/13743/MM/01E, PMT for Essential Syphon Vacuum System Pump, Revision 0
- PT/2/A/0204/007, Reactor Building Spray Pump Test, Revision 57
- PT/0/A/0610/024, Keowee Emergency Start for Troubleshooting and Post Maintenance Checkouts, Revision 5

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing

Routine Surveillance Testing Observations

a. Inspection Scope

The inspectors witnessed surveillance tests and/or reviewed test data of the selected risk-significant SSCs listed below, to assess, as appropriate, whether the SSCs met TS, UFSAR and licensee procedure requirements. In addition, the inspectors determined if the testing effectively demonstrated that the SSCs were ready and capable of performing their intended safety functions. The following testing was observed and/or reviewed:

- PT/0/A/0620/016, Keowee Hydro Emergency Start Test, Revision 28
- PT/0/A0620/021, Standby Shutdown Facility Diesel-Generator Operation, Revision 9
- IP/0/A/3000/023, 125 Volt DC Instrument and Control Battery Performance Test, Revision 13
- PT/3/A/0600/015, Control Rod Movement, Revision 14
- PT/0/A/0400/011, SSF Diesel Generator Test, Revision 10 (Quarterly surveillance test on September 19, 2002, to observe diesel cylinder exhaust temperatures)
- IP/0/A/0310/014C, Engineered Safeguards System Analog Channel C On Line Calibration, Revision 40

b. Findings

No findings of significance were identified.

1R23 Temporary Modifications

a. Inspection Scope

The inspectors reviewed documents and observed portions of the installation of temporary modification ONTM-2129, which installed monitoring equipment on the Unit 3 RPS channel D +15Vdc power supply due to spurious alarms. Among the documents reviewed were system design bases, the UFSAR, TS, system operability/availability evaluations, and the 10 CFR 50.59 screening. The inspectors observed, as appropriate, that the installation was consistent with the modification documents, was in accordance with the configuration control process, adequate procedures and changes were made, and post installation testing was adequate.

b. Findings

No findings of significance were identified.

Cornerstones: Emergency Preparedness

1EP1 Exercise Evaluation

a. Inspection Scope

The inspectors reviewed the objectives and scenario for the Oconee Nuclear Station biennial, full-participation 2002 emergency response exercise to determine whether they were designed to suitably test major elements of the licensee's emergency plan.

During the period September 16 - 19, 2002, the inspectors observed and evaluated the licensee's performance in the exercise, as well as selected activities related to the licensee's conduct and self-assessment of the exercise. The exercise was conducted on September 17, 2002. Licensee activities inspected during the exercise included those occurring in the control room simulator (CRS), technical support center (TSC), operational support center (OSC), joint information center (JIC), and the emergency operations facility (EOF). The NRC's evaluation focused on the risk-significant activities of event classification, notification of governmental authorities, onsite protective actions, offsite protective action recommendations, and accident mitigation. The inspectors also evaluated command and control, the transfer of emergency responsibilities between facilities, communications, adherence to procedures, and the overall implementation of the emergency plan. The inspectors attended the post-exercise critique to evaluate the licensee's self-assessment process, as well as the presentation of critique results to plant management.

b. Findings

No findings of significance were identified.

1EP4 Emergency Action Level and Emergency Plan Changes

a. Inspection Scope

The inspectors reviewed Revision 2002-02 dated June 2002, to the Radiological Emergency Plan (REP) against the requirements of 10 CFR 50.54(q) to determine whether any of those changes decreased REP effectiveness.

a. Findings

No findings of significance were identified.

1EP6 Drill Evaluation and Simulator Observations

a. Inspection Scope

The inspectors observed an emergency drill and simulator scenario conducted on July 30, 2002, to evaluate licensee performance in the area of emergency preparedness, and to assess the licensee's critique of those performances. The inspectors specifically verified the proper classification and notification of events and development of protective action recommendations during the simulations. These observations were made in the CRS and the TSC. Operator performance and communication during the drill were also monitored at the simulator.

b. Findings

No findings of significance were identified.

3. SAFEGUARDS

Cornerstones: Physical Protection

3PP1 Access Authorization (Behavior Observation Program)

a. Inspection Scope

During the period July 22-25, 2002, the inspectors reviewed the licensee's Behavior Observation Program to evaluate the effectiveness and proper implementation of the behavioral observation portion of the licensee's personnel screening and fitness for duty (FFD) program. One licensee supervisor, two contractor supervisors, and three individuals assigned escort duties were interviewed to determine their understanding of the behavior observation program. The inspectors evaluated the effectiveness of each individual's training, including their ability to recognize aberrant behavioral traits, indications of alcohol or narcotics use, and knowledge of work call-out reporting procedures.

The inspectors reviewed the licensee's Semi-Annual FFD report for the period July 1 - December 31, 2001, a sample of the licensee's PIPs for the period January 2001 -

July 2002 and Security Quarterly Event Logs for 2001 to evaluate the licensee's threshold for conducting for-cause testing for events related to human performance errors.

The licensee's activities were evaluated against requirements in the Duke Power Company Nuclear Security and Contingency Plan, as they related to the Oconee Nuclear Station, associated licensee procedures, and 10 CFR Part 26 (Fitness for Duty Programs). Specific licensee documents reviewed are identified in the Attachment to this report.

a. Findings

An unresolved item was identified regarding the licensee's failure to for-cause test an individual, as required by of 10 CFR 26.24(a)(3), following an accident involving a failure in individual performance that resulted in personal injury.

A review of PIPs related to personal injury accidents determined that, on July 30, 2001, an employee fell from a ladder while working in the basement of the Unit 3 turbine building and sustained fractures to his left shoulder, left ankle, and left heel, and lacerated his left elbow. The licensee's investigation of this incident, which was documented in PIP O-01-02864, considered and rejected the following as causes for the accident: the gloves and shoes worn by the employee, heat stress, fatigue, and the scaffolding used on the job. The PIP stated, "Based on the Root Cause Team's conclusions, Technician A failed to maintain adequate safety focus as he descended the ladder." The inspectors concluded that this was an accident involving a failure in individual performance which resulted in an injury, but the licensee did not for-cause test the individual, as required by 10 CFR 26.24(a)(3). Although the wording of the requirement for for-cause testing contained in Access Services Procedure, "NRC Drug and Alcohol Testing Procedures for Program Administrators," was consistent with 10 CFR 26.24(a)(3), discussions with licensee personnel indicated that they did not interpret the regulation as requiring mandatory testing, unless there was a reasonable suspicion that the worker's behavior contributed to the event.

Pending further Agency review, the licensee's failure to conduct for-cause testing after the July 30, 2001, accident in accordance with 10 CFR 26.24(a)(3) is being identified as Unresolved Item (URI) 50-269,270,287/02-04-01: Failure to For-Cause Test an Individual Following an Accident.

3PP2 Access Control

.1 Oconee Nuclear Station

a. Inspection Scope

During the period July 22-25, 2002, the effectiveness of the licensee's access control procedures and associated equipment designed to detect and prevent the introduction of contraband into the protected area were evaluated. The inspectors evaluated, by direct observation, the adequacy of search equipment testing procedures demonstrated

by a licensee representative on equipment at the site's Personnel Access Portal (PAP). The inspectors also observed and assessed the adequacy of searches of personnel and packages at the PAP and package searches conducted at the Vehicle Access Portal.

The licensee's Key and Lock Control Program was examined. The inspectors evaluated the licensee's procedures for controlling access to and accounting for security-related keys. The inspectors further evaluated key and lock accountability through independent verification of the location of five security key rings. The inspectors evaluated the effectiveness of the licensee's program to control vehicles and visitors within the protected area. The inspectors also reviewed a sample list of current plant personnel with vital area access to evaluate the licensee's process for granting vital area access for personnel identified as having a need for such access.

The licensee's activities were evaluated against requirements in the Duke Power Company Nuclear Security and Contingency Plan, as they related to the Oconee Nuclear Station, associated licensee procedures, 10 CFR 73.55, "Requirements for Physical Protection of Licensed Activities in Nuclear Power Reactors Against Radiological Sabotage," and 10 CFR 73.56, "Personnel Access Authorization Requirements for Nuclear Power Plants." Specific licensee documents reviewed are described in the Attachment to this report.

b. Findings

No findings of significance were identified.

.2 Oconee Independent Spent Fuel Storage Facility

a. Inspection Scope

The inspectors evaluated physical security implementation at the Independent Spent Fuel Storage Installation (ISFSI). The inspector evaluated the protected area barrier, access controls, alarm assessment (closed circuit television system [CCTV]), and the intrusion detection system. The inspectors directly observed testing of the intrusion detection system and CCTV assessment of ISFSI alarms by the Central Alarm Station.

The licensee's activities were evaluated against requirements in the Oconee Nuclear Station Independent Spent Fuel Storage Installation Security Program, associated licensee procedures, and 10 CFR 73.51, "Requirements for the Physical Protection of Stored Spent Nuclear Fuel and High-Level Radioactive Waste." Specific licensee documents reviewed are described in the Attachment to this report.

b. Findings

No findings of significance were identified.

3PP3 Response to Contingency Events

The Office of Homeland Security developed a Homeland Security Advisory System (HSAS) to disseminate information regarding the risk of terrorist attacks. The HSAS

implements five color-coded threat conditions with a description of corresponding actions at each level. NRC Regulatory Information Summary (RIS) 2002-12a, dated August 19, 2002, "NRC Threat Advisory and Protective Measures System," discusses the HSAS and provides additional information on protective measures to licensees.

a. Inspection Scope

On September 10, 2002, the NRC issued a Safeguards Advisory to reactor licensees to implement the protective measures described in RIS 2002-12a in response to the Federal government declaration of threat level "orange." Subsequently, on September 24, 2002, the OHS downgraded the national security threat condition to "yellow" and a corresponding reduction in the risk of a terrorist threat.

The inspectors interviewed licensee personnel and security staff, observed the conduct of security operations, and assessed licensee implementation of the threat level "orange" protective measures. Inspection results were communicated to the region and headquarters security staff for further evaluation.

b. Findings

No findings of significance were identified.

3PP4 Security Plan Changes

a. Inspection Scope

During the period covered by this inspection report, the inspectors evaluated five modifications (revisions number 9, 10, 11, 12, and 13) to the Duke Power Company Nuclear Security and Contingency Plan as they related to the Oconee Nuclear Station and the Oconee Independent Spent Fuel Storage Installation. The five revisions were submitted under the provisions of 10 CFR 50.54(p) and were evaluated against the previously-approved physical security plan.

b. No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator (PI) Verification

.1 Initiating Events, and Barrier Integrity Cornerstones

a. Inspection Scope

The inspectors verified the PIs listed in the table below, to determine their accuracy and completeness against requirements in Nuclear Energy Institute (NEI) 99-02, Regulatory Assessment Performance Indicator Guideline, Revision 2.

Cornerstone: Initiating Events		
Performance Indicator	*Verification Period*	*Records Reviewed*
Unplanned Scrams	3 rd and 4th quarter, 2001 and 1st and 2 nd quarter, 2002	• Licensee Event Reports • NRC Inspection Reports • Monthly Operating Reports • operator logs • licensee power history curves
Scrams with Loss of Normal Heat Removal		
Unplanned Power Changes	4th quarter 2001 and 1st and 2nd quarter 2002	

Cornerstone: Barrier Integrity		
Performance Indicator	*Verification Period*	*Records Reviewed*
Reactor Coolant System Specific Activity	4 th quarter, 2001 1 st quarter, 2002, and 2 nd quarter, 2002	• plant chemistry data
Reactor Coolant System Leakage		• operator logs

b. Findings

No findings of significance were identified.

.2 Emergency Preparedness Cornerstone

a. Inspection Scope

On September 16 - 18, 2002, licensee records were reviewed to determine whether the submitted PI statistics (through the second quarter of 2002) were calculated in accordance with the guidance contained in Section 2.4 (Emergency Preparedness Cornerstone) of NEI 99-02, Revision 2. The inspectors assessed the accuracy of the PI for Emergency Response Organization (ERO) Drill and Exercise Performance (DEP) through review of a sample of drill records and simulator evaluation reports. The latest reported DEP PI value (an aggregate of data from the past eight quarters) was 94.6 percent. The accuracy of the PI for ERO Drill Participation was assessed through review of the training records for selected individuals assigned to key positions in the ERO as of the end of the second quarter of 2002. The latest reported ERO drill participation PI value was 94.6 percent. The inspectors assessed the accuracy of the PI for the siren portion of the Alert and Notification System (ANS) Reliability through review of a sample of the licensee's records of the biweekly silent test and an quarterly full cycle test conducted for the past 4 quarters. The latest reported ANS reliability PI value was 98.3 percent.

b. Findings

No findings of significance were identified.

.3 Physical Protection PI Verification

a. Inspection Scope

The inspectors evaluated the licensee's PI data associated with the Intrusion Detection System (IDS) and CCTV to determine if the licensee provided accurate reporting for compensatory time relative to equipment degradation for the Protected Area Equipment Performance Index PI. Guidance in NEI 99-02, Revision 2 was utilized for evaluating the accuracy and completeness of the data. The evaluation included a review of selected tracking and trending reports, equipment maintenance logs, and security event reports for the year of 2001. The inspectors also reviewed a sample list of licensee's event reports and security logs for the same period to determine the accuracy of the data associated with the Personnel Screening Program Performance and Fitness for Duty/Personnel Reliability Program PIs.

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems

a. Inspection Scope

The inspectors performed an in-depth review of (three) issues entered into the licensee's corrective action program. The samples selected were within the cornerstone of mitigating systems and involve risk significant systems. The inspectors reviewed the actions taken to determine if the licensee had adequately addressed the following attributes:

- Complete, accurate, and timely identification of the problem
- Evaluation and disposition of operability and reportability issues
- Consideration of previous failures, extent of condition, generic or common cause implications
- Prioritization and resolution of the issue commensurate with the safety significance
- Identification of the root cause and contributing causes of the problem
- Identification and implementation of corrective actions commensurate with the safety significance of the issue

The following issues and corrective actions were reviewed:

- PIP O-02-03526; Degraded SSF diesel grommets/seals identified by contractor personnel.

- PIP O-02-03570; Documented high SSF diesel cylinder exhaust differential temperatures (>200 degrees F).

- PIPs O-01-00857, O-02-02140, and O-02-04778; Documented failures of 4160 V AC breakers ("A" control room chiller and 1C HPI pump) to close from March 2001 to April 2002. The root cause was thought to be faulty relays as a result of excessive varnish inside the coil housing, which prevented the breaker closing relay from receiving the close signal.

b. Findings

No findings of significance were identified.

4OA3 Event Followup

.1 (Closed) Licensee Event Report (LER) 50-270/00-02-(00 and 01): TS 3.0.3 Shutdown Initiated due to Control Room Cooling Chillers

This LER addressed the inoperability of the control room chillers on December 19, 2000. An ongoing test had potentially introduced air into the chiller service water piping causing the chillers to lose cooling and trip off line. The licensee entered TS 3.0.3 for a loss of both chillers and completed appropriate actions to return the chillers to service. The inspectors reviewed the LER and determined that the event had a very low risk significance because licensee analysis determined that venting of the piping and return of the chillers to service could have been accomplished under accident conditions in less than ten hours. This LER has been entered into the licensee's corrective action program as PIP O-00-04643. No findings of significance were identified. This event did not constitute a violation of NRC requirements.

.2 (Closed) LER 50-269/01-01-00: Revised Analysis Does Not Pass 10 CFR 50.46 Acceptance Criteria

This LER addressed a report from Framatome Technologies Incorporated (FTI) on January 11, 2001, that a potentially limiting break had not been considered in the small break loss of coolant accident (SBLOCA) analyses spectrum, and that preliminary re-analysis results did not meet 10 CFR 50.46 maximum peak clad temperature acceptance criteria. The assumptions were that one HPI pump was out of service, a second pump failed to operate, no loss of power, and the need for operator action to trip the RCPs within two minutes after a loss of subcooled margin. The inspectors reviewed the LER and determined that the event had a very low risk significance because licensee analysis determined that the full allowed outage time of 30 days for an HPI pump had only been used in September 2000 and the median response time for operators to secure the RCPs was approximately 14 seconds, which is well below the two minute limit. This LER has been entered into the licensee's corrective action program as PIP O-01-00157. No findings of significance were identified. This event did not constitute a violation of NRC requirements.

.3 (Closed) Licensee Event Report (LER) 50-269/02-S-01-00: Security Access Revoked for Falsification of Criminal Record

This LER addresses the licensee's granting of temporary unescorted access to the protected during the period March 18-20, 2002, and escorted access to one vital area on March 19, 2002, based on incomplete information submitted by the individual on his Background Investigation Questionnaire (BIQ). The incomplete information involved the individual failing to report nineteen arrests on a variety of criminal charges. The licensee received the individual's criminal history information and terminated the individual's plant access on March 20, 2002. Based on a review of the individual's access authorization file and Access Authorization Procedure NSD-218 Revision 7, the inspectors concluded the licensee followed their access authorization process for granting temporary unescorted access. Based on information available, no findings of significance or violations of regulatory requirements were identified.

4OA5 Other

(Closed) URI 50-269,270,287/00-08-04: Risk Significance of Uncontrolled Design Changes to Penetration Room Blowout Panels

Introduction

The inspectors identified a non-cited violation (NCV) for unauthorized design changes to the east penetration room blowout panels, which changed the blowout panel design capability to remove water from the auxiliary building following a postulated main feedwater line rupture. This issue was considered to be of very low safety significance (Green) because at least one train of emergency feedwater would have been available during all of the accident sequences of concern.

Description

This URI concerned an uncontrolled design change for all three units which bolted and sealed the east penetration room lower blowout panels in place; thereby, inhibiting their design function to blow out in order to prevent flooding within the penetration rooms following a postulated rupture of feedwater piping in the room. The licensee had unknowingly modified the east penetration room blowout panels by adding exterior bolts, a polymer sealer, a polymer cloth, and a silicone sealant to the blowout panels. The uncontrolled design change to the panels was considered to be in violation of 10 CFR 50, Appendix B, Criterion III, Design Control.

Analysis

A regional senior reactor analyst performed a Phase III SDP evaluation of this performance deficiency. It was determined to be of very low safety significance (Green), because only one initiating event (i.e., main feedwater piping break) involved the deficient blowout panels. Also, only two small sections of main feedwater piping would require blowout panel actuation. Even with the failure of the blowout panels, at least one train of emergency feedwater would be available in all the accident sequences. This virtually eliminated secondary side heat removal failure sequences from

contributing to core damage. Consequently, the dominant accident sequences involved a failure of two unprotected engineered safeguards features containment pressure transmitters located in the mechanical penetration room being affected by the main feedwater piping break. This would cause containment isolation and a total loss of reactor coolant pump (RCP) motor and thermal barrier cooling. The latter, in conjunction with the loss of the HPI pumps from the ensuing flood, will preclude RCP seal cooling. However, the combination of the two transmitters failing in this manner, coupled with a failure of operators to secure the operating RCPs and restore seal cooling, is very remote.

Enforcement

10 CFR 50, Appendix B, Criterion III, Design Control, requires that "Design changes, including field changes, shall be subject to design control measures commensurate with those applied to the original design and be approved by the organization that performed the original design." Contrary to the requirements of 10 CFR 50, Appendix B, design control measures were not commensurate with those applied to the original design and design changes were not properly reviewed and approved in that unapproved and undocumented design changes to the east penetration room lower blowout panels were implemented by the licensee several years prior to December 2000. These changes included addition of external bolting, addition of a polymer sealing, addition of a polymer cloth and addition of a silicone sealant which changed the design response of the panels during a postulated steam or feedwater line rupture. The failure to meet the design control requirements of 10 CFR 50, Appendix B, is being treated as a NCV, consistent with Section VI.A.1 of the enforcement policy and is identified as NCV 50-269,270,287/02-04-02: Unauthorized Design Changes to the East Penetration Room Blowout Panels. This issue of very low safety significance (Green) was entered into the licensee's corrective action program in PIP O-99-01286.

4OA6 Management Meetings

Exit Meeting

The inspectors presented the inspection results to Mr. Ron Jones, Station Manager, and Mr. Bruce Hamilton, Manager of Engineering, and other members of licensee management at the conclusion of the inspection on October 3, 2002. The licensee acknowledged the findings presented.

The inspectors asked the licensee whether any of the material examined during the inspection should be considered proprietary. No proprietary information was identified.

4OA7 Licensee Identified Violations

The following violation of very low safety significance (Green) was identified by the licensee and is a violation of NRC requirements, which meets the criteria of Section VI of the NRC Enforcement Policy, NUREG-1600, for being dispositioned as a NCV.

NCV Tracking Number	Requirement Licensee Failed to Meet
50-287/02-04-03	On June 24, 2002, the licensee placed the Unit 3 TDEFW pump in recirculating mode for training purposes while the SSF ASW pump was out of service for maintenance as described in PIP O-02-03498. Based on the licensee's risk evaluation program (Oram Sentinal), the risk for performing this evolution with the SSF ASW pump out of service is "Red." However, contrary to 10 CFR 50.65 Paragraph (a)(4), the licensee improperly assessed this combination of equipment unavailability and went on to remove the TDEFW pump from service. This licensee identified violation was evaluated by the regional SRA and, because the Unit 3 TDEFW pump was only unavailable for a short time and contingency plans would have been available, it was determined to be of very low safety significance (Green).

SUPPLEMENTAL INFORMATION

PARTIAL LIST OF PERSONS CONTACTED

Licensee

S. Batson, Mechanical/Civil Engineering Manager
T. Curtis, Reactor & Electrical Systems Manager
W. Foster, Safety Assurance Manager
P. Fowler, Access Services Manager, Duke Power
B. Hamilton, Manager of Engineering
D. Hubbard, Modifications Manager
R. Jones, Station Manager
T. King, Security Manager
W. McCollum, Site Vice President, Oconee Nuclear Station
B. Medlin, Superintendent of Maintenance
L. Nicholson, Regulatory Compliance Manager
R. Repko, Superintendent of Operations
J. Twiggs, Manager, Radiation Protection
J. Weast, Regulatory Compliance

NRC

L. Olshan, Project Manager

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

50-269,270,287/02-04-01	URI	Failure to For-Cause-Test an Individual Following an Accident (Section 3PP1)

Opened and Closed

50-269,270,287/02-04-02	NCV	Unauthorized Design Changes to the East Penetration Room Blowout Panels (Section 4OA5)
50-287/02-04-03	NCV	Licensee Identified Failure to Appropriately Assess the Increase in Risk From Maintenance Activities (Section 4OA7)

Attachment

Previous Items Closed

50-269,270,287/00-08-04	URI	Risk Significance of Uncontrolled Design Changes to Penetration Room Blowout Panels (Section 4OA5)
50-270/00-02-(00 and 01)	LER	TS 3.0.3 Shutdown Initiated Due to Control Room Chillers (Section 4OA3.1)
50-269/01-01-00	LER	Revised Analysis Does Not Pass 10 CFR 50.46 Acceptance Criteria (Section 4OA3.2)
50-269/02-S-01-00	LER	Security Access Revoked for Falsification of Criminal Record (4OA3.3)

Items Discussed

None

LIST OF ACRONYMS

AFIS	-	Automatic Feedwater Isolation System
ANS	-	Alert and Notification System
AV	-	Apparent Violation
BIQ	-	Background Investigation Questionnaire
CAP	-	Corrective Action Program
CCW	-	Condenser Circulating Water
CFR	-	Code of Federal Regulations
CRDM	-	Control Rod Drive Mechanism
CRS	-	Control Room Simulator
DEC	-	Duke Energy Corporation
DEP	-	Drill and Exercise Performance
EOC	-	End-of-Cycle
EOF	-	Emergency Operations Facility
ERO	-	Emergency Response Organization
HSAS	-	Homeland Security Advisory System
HPI	-	High Pressure Injection
HPSW	-	High Pressure Service Water
HX	-	Heat Exchanger
IR	-	Inspection Report
ISI	-	Inservice Inspection
JIC	-	Joint Information Center
KHU	-	Keowee Hydro Unit
LAR	-	License Amendment Request
LER	-	Licensee Event Report
LPI	-	Low Pressure Injection
LPSW	-	Low Pressure Service Water

LPT	-	Liquid Penetrant
MDEFW	-	Motor Driven Emergency Feedwater
MT	-	Magnetic Particle
NCV	-	Non-Cited Violation
NDE	-	Non-Destructive Examination
NRC	-	Nuclear Regulatory Commission
NRR	-	Nuclear Reactor Regulation
NSD	-	Nuclear System Directive
NSM	-	Nuclear System Modification
ONS	-	Oconee Nuclear Station
OSC	-	Operational Support Center
PIP	-	Problem Investigation Process report
PMT	-	Post-Maintenance Test
PT	-	Performance Test
PWSCC	-	Pure Water Stress Corrosion Cracking
RBCU	-	Reactor Building Cooling Unit
RBS	-	Reactor Building Spray
RCP	-	Reactor Coolant Pump
REP	-	Radiological Emergency Plan
RIS	-	Regulatory Information Summary
RT	-	Radiographic
RTP	-	Rated Thermal Power
SDP	-	Significance Determination Process
SSC	-	Structure, System and Component
SSF	-	Standby Shutdown Facility
TI	-	Temporary Instruction
TDEFW	-	Turbine Driven Emergency Feedwater
TMI	-	Three Mile Island
TS	-	Technical Specification
TSC	-	Technical Support Center
UFSAR	-	Updated Final Safety Analysis Report
URI	-	Unresolved Item
UT	-	Ultrasonic
WO	-	Work Order

LIST OF DOCUMENTS REVIEWED

(Sections 3PP1 and 3PP2)

Duke Power Company Nuclear Security and Contingency Plan, Revision 13 - (sections relevant to the Oconee Nuclear Station and to the scope of this inspection)

Duke Power Nuclear System Directive 218, Duke Power Company Nuclear Access Authorization Program, Revision 7

Licensee Security Procedures (SP):

SP-401, Intrusion Detection System, Oconee and ISFSI Protected Area, Revision 9

SP-403, Walk Through Metal Detectors, Revision 4

SP-411, Security Locks and Keys, Revision 3

SP-522, Independent Spent Fuel Storage Installation Security Program, Revision 11

Duke Power, Human Resources, Access Services Procedure: NRC Drug and Alcohol Testing Procedures for Program Administrators, Revision 2