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

October 27, 2000

NOED 00-6-009

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 INSPECTION REPORT 50-269/00-06, 50-270/00-06, 50-287/00-06, AND 72-04/00-01

Dear Mr. McCollum:

On September 30, 2000, the NRC completed inspections at your Oconee facility. The enclosed report documents the inspection findings which were discussed on October 5, 2000, with Mr. J. Forbes 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 five issues of very low safety significance (Green). All five of these issues were determined to involve violations of NRC requirements. However, because of their very low safety significance and because they have been entered into your corrective action program, the NRC is treating these issues as non-cited violations, in accordance with Section VI.A.1 of the NRC's Enforcement Policy. In addition, a non-cited violation involving the failure to adequately perform the valve alignment procedure for the Siphon Seal Water Header B on August 10, 2000, is also identified in the attached report. This non-cited violation was not evaluated using the significance determination process, as no cornerstone was affected. If you deny these non-cited violations, you should provide a response with the basis for your denial, within 30 days of the date of this inspection report, 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

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Sincerely,

/RA/

Charles R. Ogle, Chief
Reactor Projects Branch 1
Division of Reactor Projects

Docket No: 50-269, 50-270, 50-287, 72-04
License No: DPR-38, DPR-47, DPR-55, SNM-2503

Enclosure: Inspection Report 50-269,270,287/00-06 and 72-04/00-01
w/Attached NRC's Revised Reactor Oversight Process

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REGION II

Docket No:	50-269, 50-270, 50-287, 72-04
License No:	DPR-38, DPR-47, DPR-55, SNM-2503
Report No:	50-269/00-06, 50-270/00-06, 50-287/00-06, 72-04/00-01
Licensee:	Duke Energy Corporation
Facility:	Oconee Nuclear Station, Units 1, 2, and 3
Location:	7800 Rochester Highway Seneca, SC 29672
Dates:	July 2, 2000 - September 30, 2000
Inspectors:	M. Shannon, Senior Resident Inspector D. Billings, Resident Inspector E. Chrisnot, Resident Inspector S. Freeman, Resident Inspector J. Coley, Reactor Inspector (Section 1R07) R. Chou, Reactor Inspector (Sections 4OA5.1-.3) G. Hutto, Resident Inspector, H. B. Robinson (Section 1R16)
Approved by:	C. Ogle, Chief Reactor Projects Branch 1 Division of Reactor Projects

Enclosure

SUMMARY OF FINDINGS

IR 05000269,270,287/00-06, on 07/02 - 09/30/2000, Duke Energy Corporation, Oconee Nuclear Station, Units 1, 2, and 3 - Mitigating Systems

The inspection was conducted by resident inspectors and two regional engineering inspectors. The inspection identified five Green findings, all of which involved non-cited violations. 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 to which the SDP does not apply are indicated by "no color" or by the severity level of the applicable violation.

Cornerstone: Mitigating Systems

- Green. The inspectors identified a non-cited violation of Paragraph 3.E of the Oconee Operating License for failure to follow the approved fire protection plan procedures when cleaning the floor in the Unit 2 east penetration room on September 15, 2000, with a flammable paint thinner. The licensee failed to evaluate and control the use of the flammable paint thinner before cleaning the floor with it, which constituted a degradation in the fire protection defense-in-depth strategy to prevent fires. This issue was determined to have very low safety significance because a fire in this area would not affect redundant safe shutdown functions (Section 1R05.2).

- No Color. The inspectors identified a non-cited violation for failure to adequately perform the valve alignment procedure for the Siphon Seal Water Header B on August 10, 2000. Operators signed that the procedure was completed even though they did not actually verify the position of the valves in the procedure, did not perform the procedure in sequence, and left four valves in a position not called for by the procedure. This issue was determined to have minimal regulatory safety significance because the associated header was isolated by red tags (Section 1R13.2).

- Green. A non-cited violation of Technical Specification 5.4.1 was identified for failure to provide an appropriate procedure for monitoring oil levels and refrigerant levels in the control room chillers. This issue was considered to have very low safety significance because the failure only resulted in the chillers being out of service for a short period of time with only a slight increase in control room temperature (Section 1R14.2).

- Green. A non-cited violation of Technical Specification 3.4.12 was identified for failure to verify the operability of alarms needed for one train of low temperature overpressure protection and for a deficient procedure. This issue was considered to have very low safety significance because the alarms were out of service for a short time and the remaining train of protection remained available (Section 1R14.3).

- Green. A non-cited violation of Custom Technical Specification 4.0.1 was identified for failure to properly complete the calibration of the core exit thermocouples for the inadequate core cooling monitor. This issue was considered to have very low safety significance because the calibration was only minimally affected (Section 1R22.5).

- Green. A non-cited violation of 10 CFR 50 Appendix B, Criterion XVI was identified for flooding of a low pressure injection (LPI) room that occurred on April 22, 2000, because corrective actions for previous LPI room flooding incidents had not been adequate to prevent recurrence. This issue was considered to have very low safety significance because Unit 3 was in Mode 6 with the reactor cavity filled, which would have provided additional time to regain cooling. In addition, the 3C LPI pump could have been realigned in a reasonable time to provide cooling (Section 1R23.2).

Report Details

Summary of Plant Status:

Unit 1 was at 100 percent power throughout the inspection period except for the period from September 21, 2000, to September 25, 2000, when reactor power was reduced to 55 percent to replace the 1B high pressure injection (HPI) pump and motor.

Unit 2 was at 100 percent power throughout the inspection period except for three power reductions. The unit was reduced to 97 percent power on August 27, 2000, when an extraction steam valve inadvertently closed. On September 9, 2000, and again on September 19, 2000, the unit was reduced to 89 percent power to facilitate control rod and main turbine valve testing.

Unit 3 was at 100 percent power throughout the inspection period except for a brief period on July 15, 2000, when reactor power was reduced to 87 percent to facilitate control rod and main turbine valve testing.

1. REACTOR SAFETY
Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R01 Adverse Weather Protection

a. Inspection Scope

The inspectors performed a plant walkdown during and following a heavy rainstorm to verify that equipment located in the turbine and auxiliary buildings was not affected by leakage of rainwater into the plant.

b. Issues and Findings

There were no findings of significance identified.

1R04 Equipment Alignment

.1 Partial Walkdown

a. Inspection Scope

The inspectors conducted partial equipment alignment walkdowns to evaluate the operability of selected redundant trains or backup systems, listed below, with the other train or system inoperable or out of service. The walkdowns included, as appropriate, reviews of plant procedures and other documents to determine correct system lineups, and verification of critical components to identify any discrepancies which could affect operability of the redundant train or backup system. The following systems were included in this review:

- Keowee Hydro Unit (KHU) 2 and Overhead Emergency Power path during replacement of air circuit breaker (ACB)-3, Underground Supply Breaker from KHU-1, on July 29, 2000

- KHU 1 and Overhead Emergency Power path during replacement of ACB-4, Underground Supply Breaker from KHU-2, on August 7, 2000

- Unit 1 HPI trains A and C during replacement of 1B HPI pump and motor on September 18, 2000

b. Issues and Findings

There were no findings of significance identified.

.2 Complete Walkdown

a. Inspection Scope

The inspectors performed a full walkdown of the Unit 3 low pressure service water (LPSW) system to verify that components were properly operating, labeled, and in good working condition. The walkdown involved the system components in the turbine building and the auxiliary building. The full LPSW system inspection included reviews of operating procedures, maintenance procedures, instrumentation calibration procedures, system drawings, and outstanding work requests. The reviews also included corrective action program documents to verify that the licensee was properly identifying and correcting system problems.

b. Issues and Findings

There were no findings of significance identified.

1R05 Fire Protection

.1 Monthly Fire Protection Inspection

a. Inspection Scope

The inspectors conducted tours of areas important to reactor safety to verify that combustibles and ignition sources were properly controlled, and that fire detection and suppression capabilities were intact. The inspectors selected the areas based on a review of the licensee's safe shutdown analysis and the probabilistic risk assessment based sensitivity studies for fire-related core damage accident sequences. Inspection of the following areas were conducted during this inspection period: the standby shutdown facility (SSF) diesel generator room; the SSF electrical rooms; transformers CT-1, CT-2, CT-3, CT-4, CT-5; Unit 1 and Unit 2 east penetration room; and the Unit 1 and Unit 2 west penetration rooms.

b. Issues and Findings

There were no findings of significance identified.

.2 Flammable Liquid Use in the Unit 2 East Penetration Room

a. Inspection Scope

The inspectors toured the Unit 2 east penetration room to evaluate, as appropriate, conditions related to the use of paint thinner. The inspectors questioned work control personnel on the paint thinner flammability limits and personnel hazards due to the thinner vapors. The inspectors also reviewed the Material Safety Data Sheet (MSDS).

b. Issues and Findings

The inspectors identified a non-cited violation (NCV) for failure to follow procedures as required to evaluate and assess the use of flammable liquids in the Unit 2 east penetration room.

On September 15, 2000, during plant status tours, the inspectors observed licensee personnel cleaning an approximately 500 square foot area in the Unit 2 east penetration room using Carboline 33 thinner and a mop. Based on observation, the inspectors estimated that there was approximately one to two gallons of paint thinner on the floor. Following discussions with the inspectors, work control personnel toured the area and stopped work due to the amount of the vapors.

The MSDS listed the thinner as a health hazard for inhalation and a flammable hazard (Class I combustible). The MSDS also described the thinner as being heavier than air and that it would flashback from a source of ignition. The east penetration room included three potential sources of ignition in the immediate area where the thinner was being used. The inspectors utilized the Fire Protection SDP to verify the significance of the thinner use. The failure to appropriately evaluate and control the use of the flammable paint thinner constituted a degradation in the fire protection defense-in-depth to prevent fires. However, as a fire in this area would not affect redundant safe shutdown functions it was evaluated to be of very low safety significance (Green).

Nuclear Site Directive (NSD) 313 Control of Combustible and Flammable Material, Revision 3, requires that supervisors and job sponsors assess the use of flammable/combustible materials to minimize the potential for fire initiations. The inspectors concluded through discussions with work control personnel that while the use of the material had been considered, the method of application using mops and the amount used, approximately one to two gallons of Carboline 33 thinner, had not been adequately assessed to minimize the potential for fire initiation and was therefore not in compliance with NSD 313. The inspectors considered this a violation of Paragraph 3.E of the Oconee Operating License, which requires the licensee to implement and maintain all provisions of an approved fire protection plan. NSD 313 is part of that approved plan. This is being treated as an NCV, consistent with Section VI.A of the enforcement policy and is identified as NCV 50-270/00-06-01: Failure to Evaluate Flammable Material Use in the Unit 2 East Penetration Room. This violation is in the

licensee's corrective action program as Problem Investigation Process report (PIP) O-00-03351.

.3 (Closed) Licensee Event Report (LER) 50-270/99-004-(00, 01): Reactor Coolant Pump Oil Collection System Outside Design Basis with respect to 10 CFR 50, Appendix R (iii) (O)

This LER and its revision documented issues involving the Unit 2 reactor coolant pump (RCP) oil collection systems. Unresolved Item (URI) 50-269,270/99-06-05 discussed the oil collection system issue. Subsequently, the URI was closed and two non-cited violations were identified, NCV 50-269,270/00-05-01, Failure of RCP Oil Collection System to Collect Oil and NCV 50-269,270/00-05-02, Failure to Report Conditions Outside of Appendix R Design Basis. The violations were placed in the licensee's corrective action program as PIPs O-98-03838, O-99-02532, and O-99-02646. Based on the NCVs identified in IR 50-269,270,287/00-05, this LER and its revision are closed.

1R07 Heat Sink Performance

a. Inspection Scope

The inspectors reviewed completed test procedures, work orders, preventive maintenance procedures and other documentation to ensure that heat exchanger deficiencies that could mask or degrade performance were identified. Selected components examined consisted of the low pressure injection (LPI) heat exchangers (HXs), the high pressure injection (HPI) motor coolers, the turbine driven emergency feedwater (TDEFW) pump bearing oil coolers, the Keowee generator thrust bearing coolers, the Keowee turbine guide bearing oil coolers, and the condenser circulating water (CCW) 42-inch diameter underground header. The licensee's responses to NRC Generic Letter (GL) 89-13, Service Water System Problems Affecting Safety-Related Equipment, dated January 26, 1990, May 31, 1990, September 1, 1994, and April 4, 1995, were reviewed to determine the licensee's commitments to the GL for the service water system program. In addition, the licensee's service water system program manual and the raw water program health report for the first half of 2000, as well as the health reports for each individual system examined were reviewed. Calculations for the temperature monitoring test method and the heat transfer test method were examined, as well as completed preventive maintenance procedures used for inspection and cleaning, tube plugging criteria drawings, and the licensee's monitoring program for asiatic clams. This monitoring program was examined because the licensee does not chemically treat the service water system, relying instead on corrective maintenance. A walkdown inspection of the components selected for inspection and the Keowee facility was performed. A peer assessment of Duke Power's Oconee nuclear raw water program, dated April 27, 2000, and five applicable PIPs were also reviewed. This review included the following test procedures, preventive maintenance procedures, calculations, work orders, assessments and PIPs:

- Work Order 98233194-01, Keowee Unit 2 Turbine Guide Bearing Oil Cooler Inspection

- PT/2/A/2200/004, Revision 6, KHU-2GBO Heat Exchanger 3 Year Surveillance

(performed March 22, 2000)

- Work Order 98235416-01, Keowee Unit 1 Turbine Guide Bearing Oil A Cooler Inspection
- PT/1/A/2200/004, Revision 10, KHU-1GBO Heat Exchanger 3 Year Surveillance (performed April 5, 2000)
- TT/0/A/0620/022, Revision 0, Load Run, Endurance and Margin, and Hot Restart Test (performed August 22, 1996)
- TT/0/A/0620/043, Revision 0, KHS Heat Exchanger Temperature Surveillance (this is a new procedure and although data has been collected with it, it has not been officially run to date)
- TT/O/A/0610/012, Revision 0, Keowee Turbine Guide Bearing Oil Cooler Test
- Calculation No. KC-Unit 1-2-2083, Minimum Flow Rate and Minimum Pressure for Generator Thrust Bearing Coolers Cooling Water Supply
- Calculation No. OSC-4338, Unit 3 LPI Heat Exchanger Performance Calculation
- PT/0/A/0251/018, Revision 17, LPI Cooler Test (performed April 16, 2000)
- CP/0/A/4002/012, Revision 1, Monitoring Program for Asiatic Clams (performed May 18, 2000 and May 24, 2000)
- PT/2/A/0600/012, Revision 57, Turbine Driven Emergency Feedwater Pump Test (performed June 19, 2000)
- MP/0/A/1100/012, Revision 12, Cooler-Oil-Emergency Feedwater Pump Turbine -Refueling Preventive Maintenance (performed June 19, 2000)
- PT/3/A/0230/015, Revision 13, High Pressure Injection Motor Cooler Flow Test (performed May 3, 2000)
- Oconee Updated Final Safety Analysis Report (UFSAR), Section 9.2.2, Cooling Water Systems
- Duke Power Company Group Environment, Health, and Safety Report, dated April 4, 2000, Status of Corbicula Populations and Their Biofouling Potential in the Vicinity of the Duke Power Nuclear Stations in 1999

Corrective action documents reviewed included:

- Final Report for the Peer Assessment of Duke Power's Oconee Nuclear Raw Water Program (performed April 2000)
- PIP-O-99-01637

- PIP-O-00-02515
- PIP-O-00-01391
- PIP-O-00-02471
- PIP-O-99-00233

b. Issues and Findings

There were no findings of significance identified.

1R11 Licensed Operator Requalification

a. Inspection Scope

The inspectors observed the "A Shift" main control room operating crew during an August 15, 2000, simulator drill. The inspectors observed crew performance in terms of communication; ability to take timely action in the safe direction; 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 Specifications (TS) actions, such as reporting and emergency plan actions and notifications.

b. Issues and Findings

There were no findings of significance identified.

1R12 Maintenance Rule Implementation

a. Inspection Scope

The inspectors sampled portions of selected structures, systems and components (SSCs) listed below, as a result of performance-based problems, to assess the effectiveness of maintenance efforts that apply to scoped SSCs. Reviews focused, as appropriate, on: (1) maintenance rule scoping in accordance with 10 CFR 50.65; (2) characterization of failed SSCs; (3) safety significance classifications; (4) 10 CFR 50.65 (a)(1) or (a)(2) classifications; and (5) the appropriateness of performance criteria for SSCs classified as (a)(2) or goals and corrective actions for SSCs classified as (a)(1). The selected SSCs were as follows:

- SSF Battery
- Keowee Battery
- 125 Volt Direct Current (VDC) Vital Batteries
- SSF Battery Chargers
- 125 VDC Vital Battery Chargers

- RCS Mid-loop Level Instruments

b. Issues and Findings

There were no findings of significance identified.

1R13 Maintenance Risk Assessments and Emergent Work Evaluations

.1 Assessments and Evaluations

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. The following items were reviewed under this inspection procedure:

- Underground Emergency Power Path for replacement of ACB-3
- Underground Emergency Power Path for replacement of ACB-4
- Siphon Seal Water (SSW) Header A for relief valve replacement
- Overhead Emergency Power Path for Keowee main transformer deluge system test
- SSW Header B for relief valve replacement
- Unit 2 Reactor Protection System (RPS) Channel E for troubleshooting
- Unit 1 HPI Pump B for pump and motor replacement
- Use of Carboline paint thinner in penetration room

b. Issues and Findings

There were no findings of significance identified.

.2 SSW Header Isolation

a. Inspection Scope

The inspectors reviewed the methods used by the licensee to isolate the SSW headers during routine maintenance in order to evaluate the effectiveness of the licensee's risk assessments. During the inspection, the inspectors reviewed removal and restoration (R&R) documents O-2-0-2389 and O-2-0-1035, along with Operating Procedure

OP/0/A/1104/052, SSW System, Revision 11.

b. Issues and Findings

The inspectors identified that an incorrect risk assessment was made prior to separate isolations of SSW Headers A and B, because the work scope was changed by the operators after the licensee's initial risk assessment. In addition, the inspectors identified that operators did not verify valve positions prior to signing off the SSW Header B valve alignment procedure.

For the isolation of SSW Header A on August 8, 2000, ORAM-SENTINAL, the licensee's risk assessment software, identified an orange condition. This was because the SSW header isolation was scheduled at the same time that the Keowee overhead emergency power path was to be out of service for testing. During isolation of SSW Header A, operations personnel independently decided to isolate only the portion of the header supplying cooling water to the CCW pumps, thereby eliminating entry into a TS LCO. This left the seal supply to the safety-related essential siphon vacuum (ESV) pumps intact. This action reduced the risk shown on ORAM-SENTINAL from orange to green.

Based on the method used to isolate SSW Header A, work control personnel modified ORAM-SENTINAL to show the subsequent isolation of SSW Header B as a green condition. However, when operations personnel isolated SSW Header B on August 10, 2000, they chose to isolate the entire header without informing work control personnel. This removed a portion of the seal supply flow to the ESV pumps which resulted in an increase in risk. ORAM-SENTINAL should have characterized this as a yellow condition, but because work control was not informed and the risk was not reevaluated, ORAM-SENTINAL remained green.

In addition, the inspectors noted that when operators isolated SSW Header B on August 10, 2000, they were instructed to isolate the entire header using the R&R process along with system procedure OP/0/A/1104/052. The procedure called for SSW Header B flow to be isolated to each individual CCW pump, closing a total of twelve valves. The R&R called for SSW Header B flow to be isolated to each individual CCW pump for Units 2 and 3 only, with the Unit 1 pumps to be isolated by a separate upstream block valve; a total of nine valves. The operators inappropriately assumed the R&R for SSW Header B contained the same steps as the procedure and did not verify the system valve positions as required by the procedure. Subsequently, after completing the R&R for SSW Header B, the operators signed all steps in Procedure OP/0/A/1104/052 as completed without actually having checked the positions of the valves. The inspectors later noted that the four CCW valves for Unit 1 were not in the position as signed off in the procedure.

The inspectors concluded that there was minimal risk involved with this procedure error because it occurred as part of work in progress with SSW Header B inoperable and all three units under a TS condition for the emergency siphon. However, the operators did not verify the position of the system valves, did not perform the procedure in sequence as written, and inappropriately initialed that the system valves were in a designated position when they were not in that position. Accordingly, the inspectors concluded that this procedure error was more than minor. If left uncorrected this type of procedural compliance error would be a more significant safety concern because the licensee relies

on valve lineups to ensure proper operation of standby emergency mitigation systems. As no cornerstone was affected, this finding was not evaluated using the SDP.

TS 5.4.1 requires that procedures be established implemented and maintained for activities recommended in Regulatory Guide 1.33, Appendix A. Because the SSW system is needed to support the LPSW system (Regulatory Guide 1.33, Appendix A, Section 3, PWR Procedures), failure to adequately perform Procedure OP/0/A/1104/052 is considered to be a violation of TS 5.4.1. This issue is being treated as an NCV, consistent with Section VI.A of the enforcement policy and is identified as NCV 50-269,270,287/00-06-02: Failure to Adequately Perform Procedure When Isolating SSW Header. This violation is in the licensee's corrective action program as PIP O-00-02925.

1R14 Personnel Performance During Nonroutine Plant Evolutions

.1 Nonroutine Plant Evolutions

a. Inspection Scope

The inspectors reviewed, as described below: (1) personnel performance during selected non-routine events and/or transient operations; (2) licensee event reports focusing on those events involving personnel response to non-routine conditions; and (3) operator response after reactor trips that required more than routine expected operator responses, or which involved operator errors. 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; (3) evaluated the occurrence and subsequent personnel response using the SDP; and (4) 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:

- Flooding in the Unit 2 east penetration room on August 3, 2000
- Partial loss of communications on August 8, 2000
- RCP standpipe alarms on August 19, 2000
- Spill from the Unit 1 and 2 spent fuel pool demineralizer on August 29, 2000
- Power reduction to replace the 1B HPI pump on September 21, 2000

b. Issues and Findings

There were no findings of significance identified.

.2 (Closed) LER 50-269/00-002-00: Technical Specification (TS) 3.0.3 Entry due to Control Room Chiller Refrigerant Leaks

On March 9, 2000, from 10:35 a.m. until 12:46 p.m., while Units 1, 2, and 3 were

operating at 100 percent power, both control room heating ventilation and air conditioning (HVAC) chillers became inoperable due to loss of refrigerant. On March 9, 2000, the Train B chiller was removed from service and the Train A chiller was placed in service. Shortly after being placed in service, the Train A chiller tripped and could not be restarted. Attempts were then made to place the Train B chiller back in service without success. Both chillers tripped due to low refrigerant levels resulting from refrigerant leakage. The refrigerant had leaked from degraded fittings on both chillers and the reduced refrigerant levels in the chillers had not been detected during routine operator rounds. In addition, maintenance methods to detect refrigerant leaks on the chillers were not defined by procedure. The leaking fittings were subsequently replaced, refrigerant was added, both chillers were returned to operable status, and TS 3.0.3 was exited. While both chillers were off, control room temperature increased from 68 degrees Fahrenheit (F) to 69.4 degrees F. On August 13, 1999, a similar event occurred and the units also entered TS 3.0.3 at that time. The Train A chiller tripped at that time due to incorrect oil to refrigerant ratio. One of the corrective actions was to revise the operations rounds sheets to monitor operating parameters that would indicate refrigerant leakage. The proposed change to the operations rounds sheets was not properly communicated to operations and was not implemented. Another corrective action was to revise the preventive maintenance procedure to verify correct oil levels and refrigerant charges routinely. The revision did not consider the need to enhance the procedure for refrigerant addition monitoring or leak detection methods.

The inspectors evaluated this LER using the SDP of Reactor Inspection Findings for At-Power Situations. Due to the short time frame when both chillers were out of service and the slight increase in control room temperature the inspectors determined that this issue was of very low safety significance (Green).

The failure to provide an appropriate procedure for monitoring oil levels and refrigerant levels was considered to be a failure to provide an appropriate procedure recommended by Regulatory Guide 1.33, Section 4.s, Control Room Heating and Ventilation, which is a violation of TS 5.4.1. This violation is being treated as a non-cited violation (NCV), consistent with Section VI.A of the NRC Enforcement Policy and is identified as NCV 50-269,270,287/00-06-03: Inadequate Procedures for Operation and Maintenance of the Control Room Chillers. This violation is in the licensee's corrective action program as PIP O-00-0933. Based on the identified NCV, this LER is closed.

.3 (Closed) LER 50-287/00-003-00: Technical Specification Alarms Inoperable due to Operator Error and Deficient Procedure

On May 8, 2000, while in Mode 5, operators discovered that two alarm points required by TS were deleted from alarm. These alarm points monitored pressurizer level and pressure, and constituted a portion of one train of the low temperature overpressure protection (LTOP) system. Further investigation found that the alarm points were required from April 13, 2000, through April 16, 2000, and that the TS 3.4.12 completion time had been exceeded for the LTOP function. The licensee found that the reactor operators had not complied with the procedure steps in procedure OP/3/A/1104/49, Low Temperature Overpressure Protection, Revision 18, to verify operability of the alarms prior to entry into LTOP mode of applicability and as a result, the LTOP computer points were not returned to service as intended by the procedure. The other train of LTOP,

automatic power operated relief valve (PORV) operation, remained available during the time the alarms were out of service. In addition, the TS surveillance procedure used to verify the operability of the alarms every 12 hours was deficient because it did not correctly require identification of the status of the alarm points. The inspectors discussed this issue with the operator that initially performed the procedure steps to verify the operability of the LTOP alarm function and concluded that his failure to comply with the procedure was not the result of changing priorities or pressure to complete the task.

The inspectors evaluated this LER using the Shutdown Operations SDP. Due to the short duration when the alarms were out of service and the fact that the PORV remained available, the inspectors determined that this issue was of very low safety significance (Green).

The failure to perform the procedure steps in OP/3/A/1104/49, Low Temperature Overpressure Protection, Revision 18, was a violation of T.S. 3.4.12, LTOP System, Limiting Condition of Operation (LCO) 3.4.12a. In addition, because procedure OP/3/A/0600/01, Periodic Instrument Surveillance, Revision 195, was deficient, the licensee failed to meet the 12-hour surveillance requirements of TS 3.4.12.6.c, Alarms. These violations are being treated as an NCV, consistent with Section VI.A of the NRC Enforcement Policy and are identified as NCV 50-287/00-06-04: Failure to Ensure the Low Temperature Overpressure Protection Alarm Function Operable. This violation is in the licensee's corrective action program as PIP O-00-01794. Based on the identified NCV, this LER is closed.

1R15 Operability Evaluations

a. Inspection Scope

The inspectors reviewed selected operability evaluations affecting the risk significant mitigating systems listed below, 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 LCOs. The inspectors reviewed the seven operability evaluations described in the following PIPs:

- PIP O-00-02412, Thermal Binding in Unit 2 Pressurizer Relief Valve Block Valve
- PIP O-00-02494, Unit 3 TDEFW Oil Cooler Pump did not Develop Pressure or Flow
- PIP O-00-00391, RCP 1B2 Seal Leakoff Flow
- PIP O-00-01995, Unit 3B Motor Driven Emergency Feedwater (MDEFW) Pump did not Meet Acceptance Criteria
- PIP O-00-03096, 2B HPI Pump Upper Motor Bearing Temperature

- PIP O-00-03351, Heavy Fumes in the Unit 2 East Penetration Room

b. Issues and Findings

There were no findings of significance identified.

1R16 Operator Workarounds

a. Inspection Scope

The inspectors performed a review of existing operator workarounds and assessed their cumulative impact on plant safety. Specifically, the inspectors reviewed the PIPs associated with the workarounds, interviewed operations personnel and reviewed Nuclear System Directive 506, Operator Workarounds, Revision 0, to determine if the existing workarounds affected reliability and availability of risk significant systems, increased the probability of an initiating event, or affected the operators' ability to respond to plant transients and accidents.

b. Issues and Findings

There were no findings of significance identified.

1R17 Permanent Plant Modifications

(Closed) LER 50-269/00-003-00: Technical Specification 3.0.3 due to Control Room Chiller Failure

On June 6, 2000, both chilled water units were scheduled for back-to-back maintenance. As part of the maintenance, a control circuit board was to be replaced with a newer model on a like-for-like basis. Following replacement of the control board on the Train B chiller, the unit was placed back in service and work was started on the Train A chiller. Shortly after being placed back in service, the Train B chiller tripped and the units entered TS 3.0.3 due to both chillers being inoperable. TS 3.0.3 was exited before any power reductions were initiated. Subsequent reviews by the licensee found that a 1995 modification to a control circuit, which was not documented on the electrical schematics, probably resulted in a failure of the new control board that caused the Train B chiller unit to trip. The 1995 control board modification was removed and the Train B chiller was placed back in service. This undocumented, non-safety related modification issue is in the licensee's corrective action program as PIP O-00-02141. This LER is closed.

1R19 Post Maintenance Testing

.1 Monthly Post Maintenance Tests

a. Inspection Scope

The inspectors reviewed post-maintenance test (PMT) procedures and/or test activities, as appropriate, for selected risk significant mitigating 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; and (8) equipment was returned to the status required to perform its safety function. The inspectors observed testing and/or reviewed the results of the following tests:

- IP/0/A/0400/054, Keowee ACB-3 Replacement, Revision 0, Section 10.12
- IP/0/A/3000/023, 125 VDC Instrument and Control Battery Performance Test, Revision 4, Batteries 3CA and 3CB
- Purchase Order ON18869, Battery Capacity Acceptance Test for Replacement Cells for Batteries 1CA, 1CB, 2CA, 2CB
- PT/1/A/0230/015, High Pressure Injection Motor Cooler Flow Test, Revision 12
- PT/1/A/0202/011, High Pressure Injection Pump Test, Revision 63

b. Issues and Findings

There were no findings of significance identified.

.2 (Closed) LER 50-287/00-004-00: Missed Leak Rate Test due to Planning Process Weakness

On January 3, 1998, fittings were replaced on the impulse lines for four reactor building pressure switches. On May 15, 2000, the licensee identified that the required local leak rate testing following the January 3, 1998, maintenance activity was not completed until December 4, 1998. Technical Specification 4.4.1.3 required a local leak rate test after modification or replacement of components that could affect reactor building integrity. The penetrations were subsequently tested on December 4, 1998, and test results were acceptable. This minor violation is in the licensee's corrective action program as PIP O-00-1896. This LER is closed.

.3 (Closed) LER 50-287/98-001-00: Missed Surveillance Due to Inappropriate Actions

On December 3, 1998, at 12:56 p.m., reactor coolant system temperature and pressure were increased such that containment integrity was required by TS 3.6. However, a subsequent review of work orders found that local leak rate testing following work on the containment pressure switch line fittings had not been completed. Technical Specification 4.4.1.3 required a local leak rate test after modification or replacement of components that could affect reactor building integrity. On December 4, 1998, at 2:15 a.m., the local leak rate test was completed and the test results were acceptable. This minor violation is in the licensee's corrective action program as PIP O-98-5778. This LER is closed.

1R22 Surveillance Testing

.1 Routine Surveillance Tests

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:

- IP/1/B/0275/016, Feedwater Temperature Compensated Flow Instrument Calibration, Revision 2
- IP/0/B/0270/011, Steam Generator Outlet Pressure Instrument Calibration, Revision 7
- PT/1/A/0202/011, High Pressure Injection Pump Test, Revision 63
- IP/0/A/0203/001A, Borated Water Storage Tank Level Instrument Calibration, Revision 29
- IP/0/A/0305/005D, Reactor Building HI Pressure Trip Channel D, Revision 27
- PT/3/A/0600/013, Motor Driven Emergency Feedwater Pump Test, Revision 36

b. Issues and Findings

There were no findings of significance identified.

.2 Notice of Enforcement Discretion (NOED 00-6-009) on Keowee Surveillance

On September 5, 2000, the licensee requested enforcement discretion from the testing requirements of TS surveillance requirement (SR) 3.8.1.9.a. The NRC stated that the KHU limits for frequency and voltage contained in TS SR 3.8.1.9.a, must be achieved and maintained within the required 23 second time frame specified in the same TS SR. Testing of the KHUs documented that although the KHUs reached the specified voltage and frequency within the 23 seconds, there was an overshoot in frequency and subsequent operation within the frequency band was not regained within the specified 23 seconds. Given the NRCs interpretation of the upper voltage and frequency limits associated with the requirements of SR 3.8.1.9.a and the overshoot characteristics of the KHUs, this surveillance requirement was not being met. Therefore, the licensee requested that the requirement to meet the upper voltage and frequency limits associated with SR 3.8.1.9.a be removed temporarily until engineering evaluations could be conducted to define the appropriate limits. The failure to meet the testing requirements of SR 3.8.1.9.a, will be tracked as URI 50-269,270,287/00-06-05:

Inadequate Surveillance Testing of Keowee Hydro Units - NOED 00-6-009, pending completion of licensee evaluations and further NRC review.

.3 (Closed) URI 50-269,270,287/00-05-12: Potential Inadequate Surveillance Testing of Keowee Hydro Units

This URI is being closed based on the licensee's September 5, 2000, request for enforcement discretion from the testing requirements of SR 3.8.1.9.a. This issue will be tracked using URI 50-269,270,287/00-06-05.

.4 (Closed) LER 50-287/00-002-00: Missed Surveillance Due to Incorrect Interpretation of Requirements

This item was originally documented by URI 50-287/99-07-01, which was closed by NCV 50-287/99-08-02. This issue is in the licensee's corrective action program as PIP O-00-4301 and PIP O-00-4936. Based on the identified NCV, this LER is closed.

.5 (Closed) LER 50-287/98-003-00: Missed Calibration Due to Lack of Training and Lack of Formal Process

On December 23, 1998, a few weeks after the Unit 3 startup on December 7, 1998, the control room operator observed differences in the qualified core exit thermocouples (CETCs) on Train A and Train B of the inadequate core cooling monitor (ICCM) screens. On December 28, 1998, the Operations Shift Manager identified that the surveillance requirement for calibration of the CETCs had not been completed, in that only the first two steps of the five-step procedure had been completed. Both trains of the Unit 3 CETCs were declared out of service and the unit entered a 48-hour TS LCO. Maintenance then completed the third and fourth step of the procedure and the LCO was exited. On January 7, 1999, it was discovered that the "as left" portion of the calibration procedure (step five) had still not been performed and both trains of CETCs were declared inoperable and the 48-hour LCO was again entered. The calibration for the CETCs was subsequently completed later on January 7, 1999. The observed differences in calibration of the CETCs were later determined to be minimal.

The inspectors evaluated this LER using the SDP of Reactor Inspection Findings for At-Power Situations. Because the calibration of the CETCs was only slightly affected, the inspectors determined that this issue was of very low safety significance (Green).

TS 4.0.1 and TS Table 4.1-1, Item 60, require the CETCs to be calibrated every 18 months. The failure to properly complete the calibration of the CETCs between December 7, 1998, and January 7, 1999, was considered to be a violation of TS. This violation is being treated as an NCV, consistent with Section VI.A of the NRC Enforcement Policy and is identified as NCV 50-287/00-06-06: Failure to Complete the Technical Specification Required Surveillance Calibration for the Qualified Core Exit Thermocouples. This violation is in the licensee's corrective action program as PIP O-98-06045. This LER is closed.

1R23 Temporary Plant Modifications

.1 Active Temporary Modifications

a. Inspection Scope

The inspectors reviewed the installation of the caustic storage bins in Units 1, 2, and 3 to ensure that it did not have an adverse affect on the safety functions of important safety systems.

b. Issues and Findings

There were no findings of significance identified.

.2 (Closed) URI 50-287/00-05-13: Inadequate Corrective Action to Prevent Low Pressure Injection Room Flooding

On April 22, 2000, the licensee began draining the Unit 3 borated water storage tank (BWST) to the sump in LPI Room 82. The normal power supply to the sump pumps was deenergized and a modification to connect temporary power to the pumps was signed off as complete. However, the modification had only been scheduled and implemented in one of the LPI rooms; not Room 82. Therefore, when the sump in Room 82 filled, there was no power for the sump pumps to remove the water and the room flooded to a depth of approximately 4 inches before operators stopped the draining.

Headquarters personnel performed a Phase 2 screening in accordance with the shutdown SDP. This issue was considered to have very low safety significance (Green) because Unit 3 was in Mode 6 with the reactor cavity filled, which would have provided additional time to regain cooling. In addition, the 3C LPI pump could have been realigned in a reasonable time to provide cooling.

The inspectors noted that PIP O-99-04661 was initiated on November 18, 1999, following similar events during outages on both Unit 1 and Unit 2. The corrective actions for that PIP included taking extra care during the planning stage of the outage to ensure that temporary power installation was scheduled to be installed during times when the LPI room sumps were needed. The inspectors determined that this corrective action was not adequately implemented to correct the problem from the previous outages and was therefore a violation of 10 CFR 50, Appendix B, Criteria XVI. This is being treated as an NCV, consistent with Section VI.A of the enforcement policy and is identified as NCV 50-287/00-06-07: Inadequate Corrective Action to Prevent Low Pressure Injection Room Flooding. This violation is in the licensee's corrective action program as PIPs O-00-02099, O-00-02100, and O-00-02101.

4. OTHER ACTIVITIES

4OA1 Performance Indicator (PI) Verification

.1 Quarterly PI Verification

a. Inspection Scope

The inspectors verified the following Reactor Safety PIs for accuracy:

Cornerstone	Indicator
Initiating Events	Unplanned Power Changes per 7,000 Critical Hours Scrams With a Loss of Normal Heat Removal
Mitigating Systems	Safety System Unavailability for: • Emergency AC Power Systems • High Pressure Safety Injection Systems • Auxiliary Feedwater Systems • Residual Heat Removal System
Barrier Integrity	Reactor Coolant System Specific Activity Reactor Coolant System Leakage

To verify the PI data, the inspectors reviewed control room logs, chemistry logs, surveillance records, data reported to the NRC, and PIPs.

b. Issues and Findings

There were no findings of significance identified. The emergency AC power system PI was under development; therefore, the criteria was reviewed but not fully verified.

.2 PI Collecting and Reporting Verification Using Temporary Instruction (TI) 2515/144

a. Inspection Scope

The inspectors reviewed the licensee's PI data collecting and reporting process to determine whether the NRC/Industry guidance was being implemented properly. The inspectors reviewed indicator definitions, calculational methods, clarifying notes, and FAQs contained in NEI 99-02 for the following six indicators:

Cornerstone	PI
Initiating Events	Unplanned Power Changes per 7,000 Critical Hours
Mitigating Systems	Safety System Unavailability for the Auxiliary Feedwater System and High Pressure Injection System
Mitigating Systems	Safety System Functional Failures
Emergency Preparedness	Emergency Response Organization Drill Participation
Occupational Radiation Safety	Occupational Exposure Control Effectiveness

Cornerstone	PI
Public Radiation Safety	Protected Area Security Equipment Performance Index

b. Issues and Findings

TI 2515/144 was completed with no findings of significance being identified.

4OA5 Other

.1 Review of Evaluations for Changes, Tests, and Experiments

a. Inspection Scope

Utilizing Inspection Procedure (IP) 60851, the inspectors reviewed a summary of changes, tests, and experiments for the Independent Spent Fuel Storage Installation (ISFSI**)** that was submitted to NRC on June 29, 2000. The summary was completed subject to the provisions of 10 CFR 72.48 for the Oconee Specific and General License ISFSI between January 1, 1999, and December 31, 1999. The changes included the addition of Phase III for the horizontal storage modules (HSMs), reclassification of the site specific HSM seismic structures, update of the UFSAR for additional control facilities, and minor editorial changes to the UFSAR.

The inspectors also reviewed minor modification ONOE-14622, Machine ISFSI Transfer Cask, dated May 30, 2000, and the following Transnuclear West (TNW) document for the evaluation of the change impact:

- Safety Evaluation Form SRS 72-1406

b. Issues and Findings

There were no findings of significance identified.

.2 Review of ISFSI Phase IV HSM Concrete Pad Construction

a. Inspection Scope

Under IP 60853, the inspectors examined the ISFSI rebar for splice lengths, minimum concrete covering depths, spacings, and sizes to the design drawings before the concrete pour. The inspectors observed the concrete pour, testings, and sampling. The licensee craft used vibrators to uniform and level the concrete pour. The inspectors observed that the quality control inspectors performed testings for air content, temperature, and slump and took sampling for future concrete compression tests. The inspectors also reviewed several material tickets for mixed concrete to verify that the ratio and weights of cement, sand, aggregate, admixtures, and water were adequate. The following specifications and drawings were reviewed:

- Specification OSS-0160.00-00-0002, Specification for Receiving and Placing Concrete for QA Condition Structures, Revision 0
- ASTM C-94-94, Standard Specification for Ready-Mixed Concrete
- Drawing O-39-32-01, ISFSI Phase IV Horizontal Storage Modules Basement Concrete & Reinforcing Plan, Sections, & Details, Revision A
- Drawing O-39-32-02, ISFSI Phase IV Horizontal Storage Modules Approach Slabs & Reinforcing Plan, Sections, & Details, Revision A
- Drawing O-39-34-01, ISFSI Phase IV Horizontal Storage Modules Overall Layout & Details, Revision A

The inspectors also reviewed the following records for the main storage pad completed several weeks ago:

- Form QCC-1D, Record of Concrete Placed for Slump, Air Content, and Temperature, Revision 3
- Form QCC-1Q, Moisture Check, Revision 3
- Form QCC-1P, Batch Plant Inspection Report, Revision 5
- Form QCC-1E, Finishing, Curing, and Final Concrete Inspection Log, Revision 1
- S&ME Report 1263-00-338, Pre-qualification of Raw Materials for the Manufacture of Concrete

Report 1263-00-338 included cement testing results, the certificate of conformance, coarse and fine aggregate testing results, mixing water testing results, air entraining and retarding admixture, and water reducer.

b. Issues and Findings

There were no findings of significance identified.

.3 Observation of Dry Cask Loading for Units 1 & 2

a. Inspection Scope

The inspectors, per IP 60855, observed: the setup and welding of the automatic welding machine; the monitoring of hydrogen concentration inside the top air space of the cask during the welding; various quality control (QC) inspections and nondestructive examinations; the penetrate examinations on the first (root) and final passes of welding for the inner top cover plate; and sealing the vent and siphon ports. The inspectors observed and verified that six spent fuel assemblies were removed from the correct locations of the spent fuel pool and inserted into the designated locations of the canister, as stated in the Enclosure 12.9, Loading Fuel Into Dry Storage Canister, of

Procedure MP/0/A/1500/016. The inspectors observed that the licensee transported the cask from the spent fuel building decontamination area to the HSM on the storage pad at a very slow travel speed and with a security escort. The inspectors observed that the radiation protection personnel constantly monitored the radiation level during the entire operation.

The following procedures and document were reviewed:

- MP/O/A/1500/016, Independent Spent Fuel Storage Installation Phase III Dry Storage Canister Loading and Storage, Revision 11
- PT/O/A/0750/012, Development of Fuel Movement Instructions Procedure, Revision 13
- ONEI 0400-144, Dry Storage Canister 1-38 (57), Revision 0

ONEI 0400-144 contained the description and limits of the spent fuel assemblies to be placed in the canister. The inspectors reviewed the required records and data contained in the working copy of the procedure. The inspectors also reviewed records for crane operator qualification.

b. Issues and Findings

There were no findings of significance identified.

.4 (Closed) LER 50-269/99-001-(00, 01): Emergency Feedwater (EFW) Outside Design Basis Due to Deficient Documentation

This LER and its revision documented issues related to the Oconee EFW system being outside the current licensing basis. Disposition of these issues was addressed in Inspection Report 269,270,287/00-05 (i.e., NCV 50-269,270-287/00-05-14 through 18 and URI 50-269,270,287/00-05-19.) Accordingly, this LER and its revision are closed.

4OA6 Meetings

Exit Meeting Summary

The inspectors presented the inspection results to Mr. J. Forbes, Station Manager, and other members of licensee management at the conclusion of the inspection on October 5, 2000. 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.

PARTIAL LIST OF PERSONS CONTACTED

Licensee
T. Coutu, Superintendent of Operations
T. Curtis, Mechanical System/Equipment Engineering Manager

J. Forbes, Station Manager
W. Foster, Safety Assurance Manager
D. Hubbard, Modifications Manager
C. Little, Civil, Electrical& Nuclear Systems Engineering Manager
W. McCollum Site Vice President, Oconee Nuclear Station
B. Medlin, Superintendent of Maintenance
M. Nazar, Manager of Engineering
L. Nicholson, Regulatory Compliance Manager
M. Thorne, Emergency Preparedness Manager
J. Twiggs, Manager, Radiation Protection
J. Weast, Regulatory Compliance

NRC

D. LaBarge, Project Manager

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

50-269,270,287/00-06-05	URI	Inadequate Surveillance Testing of Keowee Hydro Units - NOED 00-6-009 (Section 1R22.2)

Opened and Closed During this Inspection

50-270/00-06-01	NCV	Failure to Evaluate Flammable Material Use in the Unit 2 East Penetration Room (Section 1R05.2)
50-269,270,287/00-06-02	NCV	Failure to Adequately Perform Procedure When Isolating SSW Header (Section 1R13.2)
50-269,270,287/00-06-03	NCV	Inadequate Procedures for Operation and Maintenance of the Control Room Chillers (Section 1R14.2)
50-287/00-06-04	NCV	Failure to Ensure the Low Temperature Overpressure Protection Alarm Function Operable (Section 1R14.3)
50-287/00-06-06	NCV	Failure to Complete the Technical Specification Required Surveillance Calibration for the Qualified Core Exit Thermocouples (Section 1R22.5)
50-287/00-06-07	NCV	Inadequate Corrective Action to Prevent Low Pressure Injection Room Flooding (Section 1R23.2)

Previous Items Closed

50-270/99-004-00-(00,01)	LER	Reactor Coolant Pump Oil Collection System Outside Design Basis with respect to 10 CFR 50, Appendix R (iii) (O) (Section 1R05.3)

50-269/00-002-00	LER	Technical Specification 3.0.3 Entry due to Control Room Chiller Refrigerant Leaks (Section 1R14.2)
50-287/00-003-00	LER	Technical Specification Alarms Inoperable due to Operator Error and Deficient Procedure (Section 1R14.3)
50-269/00-003-00	LER	Technical Specification 3.0.3 due to Control Room Chiller Failure (Section 1R17)
50-287/00-004-00	LER	Missed Leak Rate Test due to Planning Process Weakness (Section 1R19.2)
50-287/98-001-00	LER	Missed Surveillance Due to Inappropriate Actions (Section 1R19.3)
50-269,270,287/00-05-12	URI	Potential Inadequate Surveillance Testing of Keowee Hydro Units (Section 1R22.3)
50-287/00-002-00	LER	Missed Surveillance due to Incorrect Interpretation of Requirements (Section 1R22.4)
50-287/98-003-00	LER	Missed Calibration due to Lack of Training and Lack of Formal Process (Section 1R22.5)
50-287/00-05-13	URI	Inadequate Corrective Action to Prevent Low Pressure Injection Room Flooding (Section 1R23.2)
2515-144	TI	PI Collecting and Reporting Verification (Section 40A1.2)
50-269/99-001-(00,01)	LER	Emergency Feedwater (EFW) Outside Design Basis due to Deficient Documentation (Section 4OA5.4)

Discussed

None.

LIST OF ACRONYMS USED

AC	-	Alternating Current
ACB	-	Air Circuit Breaker
AHU	-	Air Handling Unit
ALARA	-	As Low As Reasonably Achievable
ASME	-	American Society of Mechanical Engineers
BS	-	Building Spray
BWST	-	Borated Water Storage Tank
CC	-	Component Cooling
CCW	-	Condenser Circulating Water
CETC	-	Core Exit Thermal Couple

CFR	-	Code of Federal Regulations
DBD	-	Design Basis Document
DC	-	Direct Current
ECCS	-	Emergency Core Cooling System
ERO	-	Emergency Response Organization
ESV	-	Essential Siphon Vaccum
F	-	Fahrenheit
GL	-	Generic Letter
gpm		Gallons per Minute
HPI	-	High Pressure Injection
HSM	-	Horizontal Storage Module
HVAC		Heating Ventilation and Air Conditioning
HX	-	Heat Exchanger
ICCM	-	Inadequate Core Cooling Monitor
IP	-	Inspection Procedure
ISFSI	-	Independent Spent Fuel Storage Installation
ITS	-	Improved Technical Specifications
ISFSI	-	Independent Spent Fuel Storage Installation
KHU	-	Keowee Hydro Unit
KV	-	Kilovolt
LCO	-	Limiting Conditions for Operation
LER	-	Licensee Event Report
LOCA	-	Loss Of Cooling Accident
LPI	-	Low Pressure Injection
LPSW	-	Low Pressure Service Water
LTOP	-	Low Temperature Overpressure Protection
MCC	-	Motor Control Center
MDEFW	-	Motor Driven Emergency Feedwater
MSDS	-	Material Safety Data Sheet
NI	-	Nuclear Instruments
NCV	-	Non-Cited Violation
NRC	-	Nuclear Regulatory Commission
NRR	-	Nuclear Reactor Regulation
NSD	-	Nuclear System Directive
PI	-	Performance Indicator
PIP	-	Problem Investigation Process
PMT	-	Post-Maintenance Testing
PORV	-	Power Operated Relief Valve
PRA	-	Probabilistic Risk Assessment
psig	-	pounds per square inch gauge
QA	-	Quality Assurance
QC	-	Quality Control
RBS	-	Reactor Building Spray
RCMU	-	Reactor Coolant Make-Up
RCP	-	Reactor Coolant Pump
RCS	-	Reactor Coolant System
RCW	-	Raw Cooling Water
RPS	-	Reactor Protection System
R&R	-	Removal and Restoration

SDP	-	Significance Determination Process
SLC	-	Selected Licensee Commitments
SR	-	Surveillance Requirement
SSC	-	Structure, System and/or Component
SSF	-	Standby Shutdown Facility
SSW		Siphon Seal Water
TDEFW	-	Turbine Driven Emergency Feedwater
TIA	-	Task Interface Agreement
TNW	-	Transnuclear West
TS	-	Technical Specification
UFSAR	-	Updated Final Safety Analysis Report
URI	-	Unresolved Item
V	-	Volt

NRC's REVISED REACTOR OVERSIGHT PROCESS

The federal Nuclear Regulatory Commission (NRC) recently revamped its inspection, assessment, and enforcement programs for commercial nuclear power plants. The new process takes into account improvements in the performance of the nuclear industry over the past 25 years and improved approaches of inspecting and assessing safety performance at NRC licensed plants.

The new process monitors licensee performance in three broad areas (called strategic performance areas): reactor safety (avoiding accidents and reducing the consequences of accidents if they occur), radiation safety (protecting plant employees and the public during routine operations), and safeguards (protecting the plant against sabotage or other security threats). The process focuses on licensee performance within each of seven cornerstones of safety in the three areas:

Reactor Safety	Radiation Safety	Safeguards
● Initiating Events	● Occupational	● Physical Protection
● Mitigating Systems	● Public	
● Barrier Integrity		
● Emergency Preparedness		

To monitor these seven cornerstones of safety, the NRC uses two processes that generate information about the safety significance of plant operations: inspections and performance indicators. Inspection findings will be evaluated according to their potential significance for safety, using the Significance Determination Process, and assigned colors of GREEN, WHITE, YELLOW or RED. GREEN findings are indicative of issues that, while they may not be desirable, represent very low safety significance. WHITE findings indicate issues that are of low to moderate safety significance. YELLOW findings are issues that are of substantial safety significance. RED findings represent issues that are of high safety significance with a significant reduction in safety margin.

Performance indicator data will be compared to established criteria for measuring licensee performance in terms of potential safety. Based on prescribed thresholds, the indicators will be classified by color representing varying levels of performance and incremental degradation in safety: GREEN, WHITE, YELLOW, and RED. GREEN indicators represent performance at a level requiring no additional NRC oversight beyond the baseline inspections. WHITE corresponds to performance that may result in increased NRC oversight. YELLOW represents performance that minimally reduces safety margin and requires even more NRC oversight. And RED indicates performance that represents a significant reduction in safety margin but still provides adequate protection to public health and safety.

The assessment process integrates performance indicators and inspection so the agency can reach objective conclusions regarding overall plant performance. The agency will use an Action Matrix to determine in a systematic, predictable manner which regulatory actions should be taken based on a licensee's performance. The NRC's actions in response to the significance (as represented by the color) of issues will be the same for performance indicators as for inspection findings. As a licensee's safety performance degrades, the NRC will take more and increasingly significant action, which can include shutting down a plant, as described in the Action Matrix.

More information can be found at: http://www.nrc.gov/NRR/OVERSIGHT/index.html.

Attachment