



UNITED STATES
NUCLEAR REGULATORY COMMISSION

REGION II
SAM NUNN ATLANTA FEDERAL CENTER
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ATLANTA, GEORGIA 30303-8931

October 30, 2007

Duke Power Company LLC
d/b/a Duke Energy Carolinas, LLC
ATTN: Mr. Bruce H. Hamilton
Vice President
Oconee Nuclear Station
7800 Rochester Highway
Seneca, SC 29672

SUBJECT: OCONEE NUCLEAR STATION - INTEGRATED INSPECTION REPORT
05000269/2007004, 05000270/2007004, 05000287/2007004

Dear Mr. Hamilton:

On September 30, 2007, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Oconee Nuclear Station. The enclosed report documents the inspection findings which were discussed on September 27, 2007, with Mr. Graham Davenport 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 NRC has identified two self-revealing findings of very low safety significance (Green), which were determined to be violations of NRC requirements. However, because of their very low safety significance and because the issues were entered into your corrective action program, the NRC is treating these findings as non-cited violations (NCVs) consistent with Section VI.A of the NRC Enforcement Policy. 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, D.C. 20555-0001, with copies to the Regional Administrator, Region II; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, D.C. 20555-0001; and the NRC Resident Inspector at the Oconee facility.

DPC

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In accordance with 10 CFR 2.390 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/

James H. Moorman, III Chief
Reactor Projects Branch 1
Division of Reactor Projects

Docket Nos.: 50-269, 50-270, 50-287

License Nos.: DPR-38, DPR-47, DPR-55

Enclosure: NRC Integrated Inspection Report 05000269/2007004, 05000270/2007004,
05000287/2007004 w/Attachment: Supplemental Information

cc w/encl.: (See page 3)

DPC

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Letter to Bruce H. Hamilton from James H. Moorman, III dated October 30, 2007

SUBJECT: OCONEE NUCLEAR STATION - INTEGRATED INSPECTION REPORT
05000269/2007004, 05000270/2007004, 05000287/2007004

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U. S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket Nos: 50-269, 50-270, 50-287

License Nos: DPR-38, DPR-47, DPR-55

Report No: 05000269/2007004, 05000270/2007004, 05000287/2007004

Licensee: Duke Power Company LLC

Facility: Oconee Nuclear Station, Units 1, 2, and 3

Location: 7800 Rochester Highway
Seneca, SC 29672

Dates: July 1, 2007, - September 30, 2007

Inspectors: D. Rich, Senior Resident Inspector
A. Hutto, Resident Inspector
E. Riggs, Resident Inspector

Approved by: James H. Moorman, III, Chief
Reactor Projects Branch 1
Division of Reactor Projects

Enclosure

SUMMARY OF FINDINGS

IR 05000269/2007004, IR 05000270/2007004, IR 05000287/2007004, 07/01/2007 - 09/30/2007; Oconee Nuclear Station, Units 1, 2, and 3; Quarterly Integrated Inspection Report; Post-Maintenance Testing and Event Followup.

The report covered a three-month period of inspection by the onsite resident inspectors. Two Green non-cited violations were identified. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using IMC 0609, "Significance Determination Process" (SDP). 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 4, dated December 2006.

A. NRC Identified and Self-Revealing Findings

Cornerstone: Mitigating Systems

- Green. A self-revealing non-cited violation (NCV) of 10 CFR 50, Appendix B, Criterion XVI, Corrective Action, was identified for failure to take timely corrective action to repair the Standby Shutdown Facility (SSF) air conditioning compressor #2. As a result, the SSF was unnecessarily inoperable for over one week.

The inspectors determined that the licensee's failure to promptly repair the SSF air conditioning compressor #2 was a performance deficiency. This finding was more than minor because it affected the availability and reliability attribute of the Mitigating Systems Cornerstone, in that it reduced the reliability of the SSF air conditioning system, which was required to maintain building temperatures for both habitability and electrical equipment operability. The licensee determined that the SSF remained available as long as one of the two compressors was functional. However, in the event of the SSF being required, reduced capacity and reliability of the air conditioning system would have reduced the likelihood of successful operation of the SSF. The SSF was inoperable from September 4 - 7, 2007, while inadequate repairs were conducted, and again from September 7 - 13, 2007, while no action was taken. The SSF was available for most of this period because compressor #1 was functional. This finding was evaluated using the SDP and was determined to be of very low safety significance because there was no loss of safety function. The inspectors determined this finding was related to the cross cutting aspect of appropriate corrective action being taken in a timely manner [P.1.d], as described in the corrective action component of the problem identification and resolution cross cutting area (Section 1R19).

Cornerstone: Barrier Integrity

- Green. A self-revealing NCV of Technical Specification (TS) 3.4.12, Low Temperature Overpressure Protection (LTOP), was identified for failure to take the appropriate actions when administrative controls specified by TS 3.4.12 were required and not available.

Enclosure

The inspectors determined that the licensee's failure to implement administrative controls to provide low-temperature, overpressure protection for the Reactor Coolant System (RCS) was a performance deficiency. In that not all RCS overpressure protection requirements were met, the finding was considered to be more than minor because it affected the barrier integrity cornerstone objective to provide reasonable assurance that the physical design barriers protect the public from radio-nuclide releases caused by accidents or events. In the event of an overpressure condition, a required control room alarm would not have functioned, which would have affected the operators' ability to recognize the event and take action. The likelihood of an overpressure condition and subsequent loss of inventory caused by an RCS overflow, actuation of pressurizer heaters, or loss of decay heat removal, was evaluated by a Phase III SDP analysis. Due to the low probability of the initiating events, the likelihood of appropriate operator action, and the availability of automatic overpressure protection, the finding was determined to be of very low safety significance. The inspectors determined the cause of this finding was related to the cross cutting area of Human Performance [H.2.a], within the specific component of Resources, and its aspect of minimizing long-standing equipment issues (Section 4OA3).

B. Licensee-Identified Violations

None

REPORT DETAILS

Summary of Plant Status:

Unit 1 began the report period at 100 percent rated thermal power (RTP). On September 8, 2007, the Unit was reduced to 88 percent RTP for turbine valve movement testing and was returned to 100 percent RTP later the same day where it remained until the end of the inspection period.

Unit 2 began the report period at 100 percent RTP. On August 29, 2007, the Unit was reduced to approximately 73 percent RTP to comply with Technical Specification (TS) 3.5.2, Condition B with the 2A high pressure injection (HPI) pump out-of-service (OOS) for repairs. The 2A HPI pump was returned to service, and the unit was returned to 100 percent RTP on September 3, 2007, where it remained until the end of the inspection period.

Unit 3 began the report period at 100 percent RTP. On July 21, 2007, the Unit was reduced to 88 percent RTP for turbine valve movement testing and was returned to 100 percent RTP later the same day, where it remained until the end of the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R04 Equipment Alignment

Partial Walkdown

a. Inspection Scope

The inspectors conducted partial equipment alignment walkdowns to evaluate the operability of selected redundant trains or backup systems while the other train or system was inoperable or OOS. 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. Documents reviewed are listed in the Attachment to this report. The following three systems were included in this review:

- 3A Low Pressure Service Water (LPSW) Pump with the 3B pump OOS for preventive maintenance (PM)
- 3A and 3B Motor Driven Emergency Feedwater (MDEFW) Pumps and the standby shutdown facility (SSF) Auxiliary Service Water (ASW) Pump with the Unit 3 Turbine Driven Emergency Feedwater (TDEFW) Pump OOS for maintenance
- Unit 1, 2, and 3 TDEFW Pumps with SSF OOS for repair of the diesel generator (DG) emergency trip lever

Enclosure

b. Findings

No findings of significance were identified.

1R05 Fire Protection

Fire Area Walkdowns

a. Inspection Scope

The inspectors conducted tours in eight areas of the plant 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 sequences. Documents reviewed are listed in the Attachment to this report. Inspections of the following areas were conducted during this inspection period:

- Unit 1, 2 and 3 Control Rooms (2)
- Unit 1, 2 and 3 Equipment Rooms (3)
- Turbine Building (TB) Basement (1)
- TB Ground Floor (1)
- Keowee Hydro Station (1)

b. Findings

No findings of significance were identified.

1R07 Heat Sink Performance

a. Inspection Scope

The inspectors observed portions of the 2A Component Cooling (CC) heat exchanger cleaning and inspection, and reviewed documentation of the results. The inspectors observed photographs of the as found condition of the LPSW tube side of the cooler to determine if there was no significant biological or corrosion fouling of the heat exchanger surfaces or tube blockage, and that excessive corrosion of the cooler water boxes did not exist. The inspectors also assessed the appropriateness of the heat exchanger cleaning/inspection interval based on the as found condition. Documents reviewed are listed in the Attachment to this report.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification

a. Inspection Scope

The inspectors observed licensed operator simulator training on August 14, 2007. The scenario involved failure of the integrated control system, two dropped control rods, and a main steam line break inside the reactor building with automatic actuation of Engineered Safeguards Channels 1, 2, 3, 4, 5, and 6. Procedures utilized included alarm response guides, Abnormal Procedure (AP) - 28, Integrated Control Instrument Failure; AP-15, Dropped Control Rods; and Emergency Procedure (EP) - 01, Emergency Operating Procedure. The inspectors observed crew performance and shift supervisor oversight 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 the ability to identify and implement appropriate TS actions and properly classify the simulated event.

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, 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:

- Problem Investigation Process report (PIP) O-07-3553, SSF ASW Pump Test was stopped due to high vibration
- PIP O-07-0490, Unit 3 TDEFW pump vibration in the alert range

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessment and Emergent Work Evaluations

a. Inspection Scope

For the eight selected SSCs and activities listed below, the inspectors evaluated the following attributes: (1) the effectiveness of the risk assessments performed before maintenance activities were conducted; (2) the management of risk; (3) that, upon identification of an unforeseen 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.

- PIP O-07-3950, 230KV switchyard grading
- Work Order (WO) 01740337, Keowee Hydro-electric Unit (KHU) Fire Protection Valve Testing
- PIP O-07-4670, Loss of Unit 3 Control Rod position indication
- PIP O-07-4674, 2A HPI pump failure
- PIP O-07-4858, SSF Heating, Ventilation and Cooling (HVAC) Compressor #2 in lead mode but discovered off
- OD 500667, SSF Cable Trench Modification
- PIP O-07-3654, Operability Test of 4160 V breakers with the SSF OOS
- PIP O-07-3696, Unit 2 TDEFW Pump Governor Valve Test with the SSF OOS and with the TDEFW Pump in a protected train status

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations

a. Inspection Scope

The inspectors reviewed selected 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) whether identified compensatory measures were in place, would work as intended, and were appropriately controlled; and (5) the impact on TS limiting conditions for operation (LCOs), where continued operability was considered unjustified. Documents reviewed are listed in the Attachment to this report. The inspectors reviewed the following seven operability evaluations:

- PIP O-07-3553, SSF ASW Pump Test was stopped due to high vibration
- PIP O-07-3871, SSF DG stopped using emergency stop due to cylinder temperature differences
- PIP O-07-2933, Leak on valve 2 FDW-353
- PIP O-07-4120, Foreign material discovered in KHU 1 Governor Oil Tank
- PIP O-00-3673, SSF CO2 System seismic discrepancies

- PIP O-07-4334, Insulation removal in the Unit 3 LPI pump room
- PIP O-07-5184, LPSW potentially piped incorrectly to MDEFW Pump Coolers

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing (PMT)

a. Inspection Scope

The inspectors reviewed PMT procedures and/or test activities, as appropriate, for selected 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 operational readiness was adequately demonstrated 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) installed jumpers or lifted leads were properly controlled; (7) test equipment was removed following testing; and (8) equipment was returned to the status required to perform its safety function. Documents reviewed are listed in the Attachment to this report. The inspectors observed testing and/or reviewed the results of the following seven tests:

- OP/0/A/1600/010, Operation Of The SSF DG following the SSF biennial outage
- WO 01772255, SSF HVAC following repairs to control circuitry
- PT/0/A/0600/021, SSF DG Operation following Emergency Manual Trip repairs
- PT/1/A/0261/010, Essential Siphon Vacuum (ESV) System Test following the replacement of the C ESV pump
- PT/2/A/0204/007, 2B Reactor Building Spray Pump Test following mechanical seal cleaning and calibration of the B Train flow instrument
- PT/2/A/0230/015, HPI Motor Cooler Flow Test following LPSW filter replacement
- PT/1/A/0600/013, 1B MDEFW Pump Test following breaker maintenance

b. Findings

Introduction: A Green self-revealing non-cited violation (NCV) of 10 CFR 50, Appendix B, Criterion XVI, Corrective Action, was identified for failure to take timely corrective action to repair the SSF air conditioning compressor. As a result, the SSF was unnecessarily inoperable for over one week.

Description: The cooling section of the SSF HVAC system includes two air conditioning compressors, both of which are required for operability of the SSF. The compressor selected as the "lead" compressor should run continuously, and the "lag" compressor should cycle as needed. The air conditioning system is necessary for both SSF control room habitability and electrical equipment operability. On September 4, 2007, compressor #2, the lead compressor, was found off while the lag unit, compressor #1,

was running. The licensee assessed the issue as an electrical controls problem, and replaced several electrical components in the control circuit for compressor #2. The licensee functionally tested the unit, and restored it to service on September 7, 2007. Later that same day, compressor #2 was again found off while selected as the lead compressor. Operators verified an active work order was open on the compressor, which was the specified action by operations' procedures. However, the open work order was actually the completed work order, which had been inappropriately left open from the earlier repair. Operators did not investigate further, and did not recognize there were no efforts in progress to troubleshoot or repair the compressor. Operations shift management did not assess the condition; therefore, they did not recognize the SSF was inoperable, and did not track the inoperable condition by entering TS 3.10.1 Conditions A, B, C, D, and E. On September 13, 2007, operations shift management recognized the condition of compressor #2 and declared the SSF inoperable. Subsequent troubleshooting efforts indicated the thermostatic expansion valve was not functioning correctly. As a result, the expansion valve was replaced along with the unloader solenoid valve.

Analysis: The inspectors determined that the licensee's failure to promptly repair the SSF air conditioning compressor #2 was a performance deficiency. This finding was more than minor because it affected the availability and reliability attribute of the Mitigating Systems Cornerstone, in that it reduced the reliability of the SSF air conditioning system, which was required to maintain building temperatures for both habitability and electrical equipment operability. The licensee determined that the SSF remained available as long as one of the two compressors was functional. However, in the event of the SSF being required, reduced capacity and reliability of the air conditioning system would have reduced the likelihood of successful operation of the SSF. The SSF was inoperable from September 4 - 7, 2007, while inadequate repairs were conducted, and again from September 7 - 13, 2007, while no action was taken. The SSF was available for most of this period because HVAC compressor #1 was functional. This finding was evaluated using the SDP and was determined to be of very low safety significance because there was no loss of safety function. The inspectors determined this finding was related to the cross cutting aspect of appropriate corrective action being taken in a timely manner (P.1.d), as described in the corrective action component of the problem identification and resolution cross cutting area.

Enforcement: 10 CFR 50, Appendix B, Criterion XVI requires conditions adverse to quality to be promptly identified and corrected. Contrary to the above, on September 7, 2007, the licensee did not promptly identify a condition adverse to quality, in that the need for repairs to a malfunctioning SSF air conditioning compressor was not recognized for six days. Because this violation was of very low safety significance, it is being treated as an NCV, consistent with Section VI.A.1 of the NRC Enforcement Policy: NCV 05000269,270,287/2007004-01, Failure to Promptly Identify a Condition Adverse to Quality. This violation is in the licensee's corrective action program as PIP O-07-05069.

1R22 Surveillance Testing

a. Inspection Scope

The inspectors witnessed surveillance tests and/or reviewed test data of the six risk-significant SSCs listed below, to assess, as appropriate, whether the SSCs met TS, the Updated Final Safety Analysis Report (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. Documents reviewed are listed in the Attachment to this report.

- PT/0/A/0251/010, ASW Pump Test [inservice test (IST)]
- PT/2/A/0600/013A, 2A MDEFW Pump Test [IST]
- PT/0/A/0610/017, Operability Test of 4160 Volt Breakers
- PT/3/A/0203/006A, 2B LPI Pump Test – Recirculation
- PT/0/A/0400/005, SSF ASW Pump Test [IST]
- PT/2/A/0290/010, TDEFW Pump Governor Valve Test

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications

a. Inspection Scope

The inspectors reviewed documents and observed portions of the installation of two selected temporary modifications. Among the documents reviewed were system design bases, the UFSAR, TS, system operability/availability evaluations, and the 10 CFR 50.59 screening. As appropriate, the inspectors determined if: the installation was consistent with the modification documents; it was in accordance with the configuration control process; adequate procedures and changes were made; and post installation testing was adequate. Documents reviewed are listed in the Attachment to this report. The following items were reviewed under this inspection procedure:

- OD 101441, Repair of 1B Core Flood Tank Manway
- OD 101013, Leak Seal Injection of 1LPSW-463

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness

1EP6 Drill Evaluationa. Inspection Scope

The inspectors observed and evaluated a simulator/plant based emergency preparedness drill held on July 11, 2007. The drill scenario involved an Alert declaration as a result of a plant transient without an immediate reactor trip, followed by a steam generator tube rupture concurrently with a leaking main steam relief valve. This represented a Site Area Emergency based on the loss of containment and the potential loss of RCS integrity. The scenario progressed to a General Emergency based on containment radiation monitor indications that exceeded levels indicative of significant fuel damage. The operators and Technical Support Center personnel were observed to determine if they properly classified the events and made the appropriate notifications that were both timely and accurate. Notification sheets were reviewed for accuracy and to determine if protective action recommendations were made in accordance with the licensee's emergency plan procedures. The inspectors observed the post drill critique to assess whether the licensee captured any drill deficiencies or weaknesses.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator (PI) Verificationa. Inspection Scope

The inspectors verified the PI listed in the table below (for all three units), to determine its accuracy and completeness against requirements in Nuclear Energy Institute (NEI) 99-02, Regulatory Assessment Performance Indicator Guideline.

Cornerstone: Mitigating Systems		
Performance Indicator	Verification Period	Records Reviewed
Safety System Functional Failures	4th quarter of 2006, 1st, 2nd quarter of 2007	Licensee Event Reports (LERs)

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems

Daily Screening of Corrective Action Reports

As required by Inspection Procedure (IP) 71152, "Identification and Resolution of Problems," and in order to help identify repetitive equipment failures or specific human performance issues for follow-up, the inspectors performed daily screening of items entered into the licensee's corrective action program. This review was accomplished by reviewing copies of PIPs, attending daily screening meetings, and accessing the licensee's computerized database.

4OA3 Event Followup

- .1 (Closed) LER 05000269/2006005-01, TS LCO Conditions Not Entered and Required Action Completion Times Not Met Due to Undetected Inoperable LTOP RCS Pressure Indication and Alarms. A description of the event and inspection finding follows. This LER is closed.

a. Inspection Scope

The inspectors reviewed a self-revealing condition of instrumentation required for RCS low temperature over-pressure protection being inadvertently disconnected, without procedure or documentation. Documents reviewed are listed in the Attachment to this report.

b. Findings

Introduction: A Green self-revealing NCV of TS LCO 3.4.12 was identified for failure to take the appropriate actions when administrative controls specified by TS 3.4.12, LTOP, were required and not available.

Description: On November 27, 2006, Unit 1 was in Mode 5 recovering from a refueling outage. TS 3.4.12 became applicable at approximately 7:00 p.m., when RCS vent paths were closed with RCS temperature less than 325 degrees F. TS 3.4.12 required an operable power operated relief valve, as well as required administrative controls to assure a minimum time period of ten minutes was available for operator action to mitigate an LTOP event. One of the administrative controls required by TS 3.4.12 was a low range RCS pressure instrument which provided an audible high pressure alarm to the operator. This signal was provided by a modification which installed a low range electronic board in reactor protection system (RPS) channel "C" narrow range RCS pressure, and installed a jumper to connect the output to Operator Aid Computer (OAC) point O1A2235. The modification was temporary, in that it was installed and removed each outage. The modification was implemented approximately 9 years ago to address concerns documented in PIP 98-2552 that LTOP protection was susceptible to single point failure. A permanent modification was planned, but has not yet been completed.

As indicated by plant computer data, the high pressure alarm was available when Unit 1 was cooled down to begin refueling. However, the associated jumper was inappropriately removed during the outage, without knowledge of the operators and without documentation. When LTOP conditions were entered again on November 27, 2006, operators believed they met TS requirements, including the high pressure alarm. Due to the design of the circuit, OAC point O1A2235 indicated zero pressure and good quality, even though the circuit was open. As RCS pressure was raised over the next several days, operators did not recognize the failed indication, even though it continued to read zero. Licensee procedure PT/1/A/0600/001, Periodic Instrument Surveillance, required operators to verify LTOP requirements every 12 hours, including verification that OAC point O1A2235 was operable. Although O1A2235 indicated zero pressure, and did not correlate to other plant pressure instruments, operators completed PT/1/A/0600/001 each shift and did not recognize the failed indication. On December 8, 2006, at 10:26 a.m., RCS temperature was raised above 325 degrees F and TS 3.4.12 was no longer applicable. The disconnected jumper was identified by a technician on December 9, 2006, while performing the procedure to remove the jumper and restore RPS Channel C to the normal condition.

TS 3.4.12 Condition F allowed compensatory actions to be taken when required administrative controls were not available. TS 3.4.12 Condition G requires the RCS to be depressurized and a vent path established within 12 hours, if compensatory actions are not taken. During the time period when LTOP controls were required by TS 3.4.12, compensatory actions were implemented several times by the assignment of a dedicated control room operator, with no other duty but to monitor RCS pressure and pressurizer level. However, from 1:22 p.m. on December 6, 2006, to 10:26 a.m. on December 8, 2006, the licensee failed to meet TS 3.4.12 Condition F and Condition G Required Actions.

Analysis: The inspectors determined that the licensee's failure to implement administrative controls to provide low-temperature, overpressure protection for the RCS was a performance deficiency. In that not all RCS overpressure protection requirements were met, the finding was considered to be more than minor because it affected the barrier integrity cornerstone objective to provide reasonable assurance that the physical design barriers protect the public from radio-nuclide releases caused by accidents or events. In the event of an overpressure condition, a required control room alarm would not have functioned, which would have affected the operators' ability to recognize the event and take action. The likelihood of an overpressure condition and subsequent loss of inventory caused by an RCS overfill, actuation of pressurizer heaters, or loss of decay heat removal, was evaluated by a Phase III SDP analysis. Due to the low probability of the initiating events, the likelihood of appropriate operator action, and the availability of automatic overpressure protection, the finding was determined to be of very low safety significance (Green). The inspectors determined the cause of this finding was related to the cross cutting area of Human Performance, within the specific component of Resources, and its aspect of minimizing long-standing equipment issues (H.2.a).

Enforcement: Technical Specification 3.4.12.b requires implementation of administrative controls that assure greater than or equal to 10 minutes are available for operator action

to mitigate an LTOP event. TS 3.4.12 Condition F requires compensatory measures to be established within 4 hours if administrative controls are not implemented. Condition G requires depressurization of the RCS and establishment of an RCS vent path within 12 hours, if required action of Condition F is not met. Contrary to the above, on December 6, 2006, the licensee failed to implement an administrative control and failed to take required actions prescribed by TS 3.4.12, Conditions F and G. Because the finding was determined to be of very low safety significance and has been entered into the licensee's corrective action program (PIP O-06-8576), this violation is being treated as a NCV, consistent with Section VI.A.1 of the NRC Enforcement Policy: NCV 05000269/2007004-02, Failure to Implement LTOP Controls.

.2 (Closed) LER 05000269/2007001-01, Dual Unit Trip from Jocassee Breaker Failure

On February 15, 2007, a breaker failure in the Jocassee Switchyard caused a phase to ground fault, which resulted in a trip of both Oconee Units 1 and 2. Issues from the event were covered in detail in NRC Inspection Report 05000269/2007002, Sections 1R12, 4OA2, and 4OA3. This issue was captured in the licensee's corrective action program under PIPs O-07-0940 and O-07-0941. This LER is closed.

4OA6 Management Meetings (Including Exit Meeting)

Exit Meeting Summary

The inspectors presented the inspection results to Mr. Graham Davenport, Regulatory Compliance Manager, and other members of licensee management at the conclusion of the inspection on September 27, 2007. 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.

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

S. Batson, Superintendent of Operations
D. Baxter, Station Manager
R. Brown, Emergency Preparedness Manager
E. Burchfield, Reactor and Electrical Systems Manager
S. Capps, Mechanical/Civil Engineering Manager
N. Constance, Operations Training Manager
C. Curry, Maintenance Manager
G. Davenport, Compliance Manager
M. Glover, Engineering Manager
B. Hamilton, Site Vice President
D. Hubbard, Training Manager
T. King, Security Manager
L. Nicholson, Safety Assurance Manager
J. Smith, Regulatory Affairs
J. Steeley, Training Supervisor
P. Stovall, SRG Manager
J. Twiggs, Radiation Protection Manager
J. Weast, Regulatory Compliance

NRC

J. Moorman, III, Chief, Reactor Projects Branch 1
L. Olshan, Project Manager, NRR

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

None

Opened and Closed

05000269,270,287/2007004-01	NCV	Failure To Promptly Identify A Condition Adverse To Quality (Section 1R19)
05000269/2007004-02	NCV	Failure To Implement LTOP Controls (Section 4OA3.1)

Closed

05000269/2006005-01	LER	LTOP Tech Spec Requirements Not Met (Section 4OA3.1)
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05000269/2007001-01

LER

Dual Unit Trip from Jocassee Breaker
Failure (Section 4OA3.2)Items Discussed

None

DOCUMENTS REVIEWED**Section 1R04: Equipment Alignment**

OSS-0254.00-00-1039, Design Basis Specification for the Low Pressure Service Water System
 OSS-0254.00-00-1000, Design Basis Specification for the Emergency Feedwater and the
 Auxiliary Service Water Systems
 Drawing OFD-124A-3.1, Flow Diagram of Low Pressure Service Water System – Turbine
 Building (Low Pressure Service Water Pumps)
 Drawing OFD-121D-3.1, Flow Diagram of Emergency Feedwater System – Unit 3
 Drawing OFD-121D-1.1, Flow Diagram of Emergency Feedwater System – Unit 1
 Drawing OFD-121D-2.1, Flow Diagram of Emergency Feedwater System – Unit 2

Section 1R05: Fire Protection

UFSAR Section 9.5.1, Fire Protection System
 Design Basis Specification OSS-0254.00-00-4008, Fire Protection

Section 1R07: Heat Sink Performance

WO 1679015, 2A CC Cooler Clean Out Tubeside
 Service Water Visual Inspection Checklist
 MP/0/A/1800/137, Cooler - Component Cooling - Disassembly, cleaning, and Assembly
 MP/0/A/1100/017, Heat Exchanger Tube Plugging and Stabilization/Sleeving-
 Mechanical/Welded/Explosive and Documentation of Tube Repair

Section 1R15: Operability Evaluations

OSS-0254.00-00-1000, Design Basis Specification for the Emergency Feedwater and the
 Auxiliary Service Water Systems
 OSS-0254.00-00-1039, Design Basis Specification for the Low Pressure Service Water System
 OSS-0254.00-00-1008, Design Basis Specification for the SSF Diesel Support Systems
 OSS-0254.00-00-1045, Design Basis Specification for the Keowee Governor Oil System
 UFSAR Section 10.4.7, Emergency Feedwater System
 UFSAR Section 8.3.1.1.1, Keowee Hydro Station
 TS 3.5.3, 3.7.7, 3.8.1, 3.10.1

Section 1R19: PMT

UFSAR Section 9.6, Standby Shutdown Facility
 UFSAR Section 10.4.7, Emergency Feedwater System
 UFSAR Section 6.5.2, Containment Spray Systems
 UFSAR Section 9.2.2.2.5, Essential Siphon Vacuum and Siphon Seal Water Systems
 USFAR Section 6.3.2.2.1, High Pressure Injection System

Section 1R22: Surveillance Testing

Drawing OFD-121D-2.1, Flow Diagram of Emergency Feedwater System – Unit 2
 Drawing OFD-121D-1.2, Flow Diagram of Emergency Feedwater System (Auxiliary Service Water)
 Drawing OFD-102A-2.2, Flow Diagram of Low Pressure Injection System (LPI Pump Discharge)
 UFSAR Section 10.4.7, Emergency Feedwater System
 UFSAR Section 6.3.3.2, Low Pressure Injection and Core Flooding Systems
 TS 3.5.3, 3.8.1, 3.7.5, 3.10.1
 SLC 16.9.9

Section 1R23: Temporary Plant Modifications

OD 101441, Repair of 1B Core Flood Tank Manway
 OD 101013, Leak Seal injection of 1LPSW-463
 UFSAR Section 6.3, Emergency Core Cooling System
 UFSAR Section 9.2.2.2.3, Low Pressure Service Water System

Section 4OA3: Event Followup

LER 05000269/2006005-00
 LER 05000269/2006005-01
 PIP 06-08576
 PIP 98-2552
 Operations Control Room Log, Unit 1, November 27, 2006 through December 8, 2006
 PT/1/A/0600/001, Periodic Instrument Surveillance

LIST OF ACRONYMS

ADAMS	-	Agency wide Documents Access and Management System
AP	-	Abnormal Procedure
ASW	-	Auxiliary Service Water
CC	-	Component Cooling
CFR	-	Code of Federal Regulations
DEC	-	Duke Energy Corporation
DG	-	Diesel Generator
EP	-	Emergency Procedure

ESV	-	Essential Siphon Vacuum
FDW	-	Feedwater
FME	-	Foreign Material Exclusion
HPI	-	High Pressure Injection
HVAC	-	Heating, Ventilation and Cooling
IP	-	Inspection Procedure
IR	-	Inspection Report
IST	-	Inservice Test
KHU	-	Keowee Hydroelectric Unit
kV	-	Kilo Volt
LCO	-	Limiting Condition for Operation
LER	-	Licensee Event Report
LOCA	-	Loss of Coolant Accident
LPI	-	Low Pressure Injection
LPSW	-	Low Pressure Service Water
LTOP	-	Low Temperature Overpressure Protection
MDEFW	-	Motor Driven Emergency Feedwater
NCV	-	Non-Cited Violation
NDE	-	Non-Destructive Examination
NRC	-	Nuclear Regulatory Commission
NRR	-	Nuclear Reactor Regulation
OAC	-	Operator Aid Computer
ONS	-	Oconee Nuclear Station
OOS	-	Out of Service
PARS	-	Publicly Available Records
PI	-	Performance Indicator
PIP	-	Problem Investigation Process report
PM	-	Preventive Maintenance
PMT	-	Post-Maintenance Testing
PT	-	Performance Test
RCS	-	Reactor Coolant System
RII	-	Region II
RPS	-	Reactor Protection System
RTP	-	Rated Thermal Power
RV	-	Reactor Vessel
SDP	-	Significance Determination Process
SLC	-	Selected Licensee Commitments
SSC	-	Structure, System and Component
SSF	-	Standby Shutdown Facility
TB	-	Turbine Building
TDEFW	-	Turbine Driven Emergency Feedwater
TLD	-	Thermoluminescent Dosimetry
TS	-	Technical Specification
UFSAR	-	Updated Final Safety Analysis Report
WO	-	Work Order