



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

January 17, 2003

EA-02-034

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

**SUBJECT: OCONEE NUCLEAR STATION - NRC SUPPLEMENTAL INSPECTION
REPORT 50-269/02-13, 50-270/02-13, AND 50-287/02-13**

Dear Mr. Jones:

On December 17, 2002, the NRC completed a supplemental inspection at your Oconee Nuclear Station. The enclosed report documents the inspection findings which were discussed on December 17, 2002, with you and other members of your staff.

This supplemental inspection was an examination of your problem identification, root cause evaluation, extent of condition determination, and corrective actions associated with a White finding identified in the mitigating system cornerstone. The White finding involved a vulnerability to flooding in the Oconee Unit 1 auxiliary building from a potential rupture of the high pressure service water (HPSW) system piping.

Based on the results of this inspection, the NRC determined that your corrective actions (both planned and already completed) are appropriate to resolve the deficiencies related to the White finding. As such, the inspection objectives of Inspection Procedure 95001, "Inspection For One Or Two White Inputs In A Strategic Performance Area," have been satisfied. Therefore, the White finding (including associated violation 50-269,270,287/02-11-01) is considered closed.

It should be noted that the acceptability of your corrective actions are predicated on the approval of the license amendment request you submitted to the NRC on November 1, 2002. This amendment request seeks to revise the licensing basis associated with the failure of certain non-seismic piping in the auxiliary building, such that the assumed failure mode for this piping would be a crack rather than a large break. This inspection recognized that your corrective actions provided measures to address the consequences of flooding caused by a crack in the HPSW piping.

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

Sincerely,

/RA/

Robert C. Haag, 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 Supplemental Inspection Report 50-269,270,287/02-13
w/Attachment - Supplemental Information

cc w/encl: (See page 3)

DEC

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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: 50-269/02-13, 50-270/02-13, 50-287/02-13

Licensee: Duke Energy Corporation

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

Location: 7800 Rochester Highway
Seneca, SC 29672

Dates: December 2 - 3 and 16 - 17, 2002

Inspector: M. A. Giles, Resident Inspector - Catawba

Approved by: Robert Haag, Chief
Reactor Projects Branch 1
Division of Reactor Projects

Enclosure

SUMMARY OF FINDINGS

IR 05000269-02-13, 05000270-02-13, 05000287-02-13; Duke Energy Corporation; 12/3-4/2002 and 12/16-17/2002; Oconee Nuclear Station; Supplemental Inspection for degraded mitigating systems cornerstone.

The inspection was conducted by a resident inspector. The inspection identified no findings of significance. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 3, dated July 2000.

Cornerstone: Mitigating Systems

This supplemental inspection was performed by the NRC to assess the licensee's evaluation and corrective actions associated with a White finding related to a vulnerability to flooding in the Oconee Unit 1 auxiliary building from a potential rupture of the high pressure service water (HPSW) system piping. The performance issue for the finding was previously characterized as having low to moderate risk significance (White) in NRC Final Significance Determination letter dated July 26, 2002.

During this supplemental inspection, which was performed in accordance with Inspection Procedure 95001, the inspector determined that the licensee performed an overall adequate evaluation of the associated performance deficiency. Although the licensee did not perform a formal root cause analysis for this finding, a thorough and detailed auxiliary building internal flood study had been previously completed, which identified various licensing basis internal flooding scenarios within the auxiliary building, and the resulting effects on safety-related equipment.

The licensee implemented various corrective actions to prevent recurrence. The licensee has also planned for additional long-term corrective actions, some which are tied to a proposed license amendment regarding revisions to the Oconee licensing basis for the Updated Final Safety Analysis Report (UFSAR) section on water level (flood) design in the auxiliary building. The UFSAR revision would reflect HPSW piping failure being a piping crack rather than a full pipe break. The inspector determined that if the proposed license amendment is approved, the corrective actions associated with this finding would be adequate.

Based on these inspection results, the White finding (including associated violation 50-269,270, 287/02-11-01) is considered closed.

A. Inspector Identified and Self-Revealing Findings

No findings of significance were identified.

B. Licensee Identified Violations

None.

Report Details

01 Inspection Scope

This supplemental inspection was performed by the NRC to assess the licensee's evaluation and corrective actions associated with a low to moderate risk significance (White) finding applicable to Unit 1. The White finding was in the mitigating systems cornerstone in the reactor safety strategic performance area. The performance issues associated with this finding were previously described in NRC Inspection Report 50-269, 270,287/00-08 and later characterized as White in the NRC Final Significance Determination letter dated July 26, 2002. The inspection involved a review of the licensee's problem identification, root cause analysis, and corrective actions associated with this White finding.

The inspectors assessed the adequacy of the licensee's root cause evaluation by determining if the root cause(s) and contributing cause(s) were understood, and if the resulting corrective actions were sufficient to address those causes in order to prevent recurrence. This assessment included a review of the licensee's root cause analysis, Problem Investigation Process reports (PIPs), completed/planned corrective actions, flooding design studies, station operating and abnormal procedures, related/referenced documents and drawings, interviews with key plant personnel, and field walkdowns of applicable systems.

02 Evaluation of Inspection Requirements

02.01 Problem Identification

- a. Determination of who (i.e., licensee, self-revealing, or NRC) identified the issues and under what conditions

During the preparation of the Oconee Auxiliary Building Design Basis Document (DBD), the licensee identified a statement in the Flooding Section of the Seismic DBD regarding dry fire protection headers in the auxiliary building being an acceptable means of preventing flooding. PIP O-96-00421, dated February 29, 1996, was initiated to determine if this was appropriate. Subsequently, on June 6, 1998, the licensee generated PIP O-98-03017 and acknowledged that this statement was incorrect, and that fire protection headers inside portions of the auxiliary building were normally charged. The HPSW header in the auxiliary building also serves as the fire suppression header.

During a flood protection inspection performed by the resident inspectors in the Spring of 2001, this issue was reviewed to determine the current risk significance of potential flooding problems and any adverse impact on safety related equipment. Also the effectiveness of the licensee's implemented corrective actions was reviewed. It was concluded at that time that the licensee's corrective actions appeared to be untimely. In order for the NRC to adequately analyze the potential risk associated with the failure of non-seismic piping, unresolved item (URI) 50-269,270,287/00-08-02, Risk Significance of Potential Flooding Problem From Non-Safety Related Lines in the Auxiliary Building,

was identified in NRC Integrated Inspection Report 50-269,270,287/00-08 (Section 1R06).

b. Determination of how long the issues existed, and prior opportunities for identification

In a letter dated September 26, 1972, the NRC questioned whether the failure of any non-seismic equipment, particularly in the circulating and fire protection systems, could adversely affect the performance of safety related equipment. The licensee responded on October 24, 1972, and stated that the fire protection headers in the auxiliary building were dry except when manually energized to fight a fire.

On December 31, 1976, the licensee submitted a report that compared the Oconee fire protection system with Appendix A to Branch Technical Position APCSB 9.5-1, Guidelines for Fire Protection for Nuclear Plants Docketed Prior to July 1, 1976. Position A.5 of that report again inappropriately stated that the failure or inadvertent operation of an automatic fire suppression system would not incapacitate redundant safe shutdown systems or functions.

The inspector concluded that both of these instances, which involve a condition that has existed since initial plant operation, provided the licensee prior opportunities for identification.

c. Determination of the plant-specific risk consequences (as applicable) and compliance concerns associated with the issues

During an open regulatory conference conducted on June 27, 2002, the licensee discussed this finding and their assessment of risk significance with the NRC. The licensee estimated the change in core damage frequency (CDF) to be approximately 6×10^{-7} /year, and concluded that the finding was of very low risk significance. The NRC staff concluded that the inspection finding was appropriately characterized as White with the change in CDF being slightly greater than 1×10^{-6} /year. This difference mainly reflected the NRC's disagreement in the licensee's use of EPRI Table A-43, Pipe Failure Rates for Babcock and Wilcox Fire Protection System (FPS) to estimate the frequency of HPSW pipe ruptures in the Oconee Unit 1 auxiliary building. The NRC determined that since the HPSW system is constructed of metal, uses untreated lake water, and has shown signs of corrosion, that Table A-40, Service Water System (SWS) Pipe Failure Rates, would provide a more appropriate estimate of failure rates for the HPSW piping. Therefore, this finding was determined to be White for Unit 1. Although the same flooding vulnerability also existed for Units 2 and 3, the risk significance for these units was determined to be Green. This difference is because during the one-year evaluation period, Unit 1 had temperature sensitive reactor coolant pump (RCP) seals installed, while Units 2 and 3 utilized high temperature RCP seals. The RCP seals were upgraded for Unit 1 during November 2000.

The NRC determined that a non-compliance and violation (VIO) of 10 CFR 50, Appendix B, Criterion XVI, Corrective Action, had occurred. Although the licensee initiated PIPs O-96-00421 and O-98-03017 when the potential loss of redundant safety-related equipment due to auxiliary building flooding event was identified, the licensee failed to initiate specific corrective actions to address the condition adverse to quality in a timely

manner. The licensee contends that the corrective actions for this finding, and the timeliness of the actions, were commensurate with the understood safety significance in light of other site issues.

This issue also resulted in non-compliances and violations with 10 CFR 50.48 and License Condition 3.D of the Oconee facility operating licenses. These non-compliances existed because the licensee did not assure that a rupture of the HPSW system would not adversely affect safety-related equipment. The licensee contends that Oconee will be in compliance with the above, once the license amendment request submitted to the NRC on November 1, 2002, is approved.

d. Assessment

The inspector concluded that although the licensee identified this issue and appropriately entered it into their corrective action program, the evaluation and subsequent corrective actions to address this issue were untimely. In addition, the inspector determined that the licensee had previous opportunities to identify and resolve this issue prior to when it was entered into the corrective action program.

02.02 Root Cause and Extent of Condition Evaluation

a. Evaluation of methods used to identify root causes and contributing causes

The licensee did not perform a formal root cause analysis for this finding. Because this issue was an old design issue, the licensee concluded that the cause for their misunderstanding that the HPSW piping was dry verses wet, was unknown and could not be determined. In addition, the licensee did not perform a formal root cause to address the NRC's conclusion pertaining to the untimely corrective actions associated with this issue.

Although no formal root cause analysis was performed, the licensee completed ONDS-0349, Oconee Nuclear Station Auxiliary Building Internal Flood Study, which was a thorough and detailed study that evaluated various internal flooding scenarios within the auxiliary building and the resulting effects on safety-related equipment. This project was completed as one of the design basis initiatives prioritized by the design basis group under the Oconee Recovery Plan that went into effect in 1997.

The inspector's review of ONDS-0349 concluded that the licensee's evaluation was extensive and comprehensive in nature. The evaluation adequately determined potential flooding sources, critical room volumes and break/crack limiting flow rates, and required time critical operator actions necessary to support flood mitigating strategies.

b. Level of detail of the root cause evaluation

As stated above, although the licensee did not perform a formal root cause analysis for this finding, an auxiliary building internal flood study was completed. The inspector's review of this study determined that its detail was commensurate with the significance of this problem.

- c. Consideration of prior occurrences of the problem and knowledge of prior operating experience

This finding has existed since initial plant operation began, therefore, consideration of prior occurrences is not applicable. As noted in section 02.01.b, the licensee had prior opportunities to identify this problem.

Due to the historical nature of this issue and the fact it was an Oconee-specific issue for which the licensee did not have knowledge of a particular aspect of plant configuration, the licensee determined that reviews of prior operating experience data would not have provided useful information. The inspector acknowledged that this old design issue was specific to Oconee.

- d. Consideration of potential common causes and extent of condition of the problem

The licensee adequately addressed potential common cause failure mechanisms and thoroughly evaluated the extent of condition of this finding in ONDS-0349, Oconee Nuclear Station Auxiliary Building Internal Flood Study. The inspector determined, through review of this study and associated documentation, that potential flooding contributors and failure mechanisms which could adversely impact safety-related equipment in the shared auxiliary building for Units 1, 2 and 3 were adequately identified.

- e. Assessment

The inspector concluded that although the licensee did not perform a formal root cause analysis to address this issue, the Oconee Nuclear Station Auxiliary Building Internal Flood Study adequately evaluated postulated internal flooding scenarios within the auxiliary building, and the resulting impact on safety-related components. This study was comprehensive, and the licensee's determination of the extent of condition was detailed and thorough.

02.03 Corrective Actions

- a. Appropriateness of corrective actions

The inspector reviewed all completed and pending corrective actions related to this finding. Corrective actions implemented at the time of the inspection included:

- Completed ONDS-0349, Auxiliary Building Internal Flood Study
- Developed auxiliary building flood procedures, AP/1&2/1700/030 and AP/3/1700/030
- Performed ultrasonic inspections on portions of HPSW system piping and added applicable piping to the Service Water Piping Monitoring Program
- Staged flood mitigation equipment in pre-determined locations in the auxiliary building
- Developed and submitted a License Amendment Request (LAR) to revise and clarify the Oconee design basis pertaining to auxiliary building flooding

- Sealed penetrations between the high pressure injection (HPI) and the low pressure injection (LPI) pump rooms
- Revised the calibration frequency associated with the low activity waste tank (LAWT) and the high activity waste tank (HAWT) alarms
- Developed and validated appropriate time critical operator actions associated with auxiliary building flood mitigation strategies
- Installed flooding barriers at specific locations in the auxiliary building to mitigate flooding events due to potential pipe cracks
- Initiated modification packages to support planned design changes (pending NRC approval of submitted LAR)
- Trained all licensed operators on the auxiliary building flood procedures and added this procedure to the licensed operator requalification training
- Updated alarm priority to priority 1 for computer alarms 01A1352 and 01A1353, associated with the LAWT and HAWT Hi-Hi level alarms

Planned long-term corrective actions included:

- Installation of a flow limiting device in the plant drinking water (PDW) system
- Installation and resizing of flow limiting devices and check valves in the non-seismic low pressure service water (LPSW) lines to the auxiliary building
- Relocation of LPSW piping above the Unit 1 and 2 control room to the turbine building
- Upgrade two fire hose racks to meet seismic standards
- Perform field testing with various HPSW system configurations to evaluate alternate system alignments while ensuring compliance with fire protection system requirements

(Note: the first four of the above long-term actions were included in Oconee's LAR.)

The inspector's review of the completed corrective actions determined that the licensee was in compliance with License Condition 3.D of the Oconee facility operating license. The inspector concluded that internal flood mitigating strategies for combating a postulated pipe crack of a fire protection system in accordance with Branch Technical Positions BTP 9.5-1 and BTP-1 could be met within the bounding time limit of 45 minutes for operators to terminate the source of flooding.

The inspector also concluded that the proposed corrective actions (pending NRC review and approval of Oconee's LAR) would adequately address the 10 CFR 50, Appendix B, Criterion XVI, corrective action violation, and the identified non-compliance associated with 10 CFR 50.48, as mentioned in the NRC's Final Significance Determination letter, dated July 26, 2002.

The inspector, however, did identify some deficiencies during the inspection which were associated with the licensee's corrective actions. The first deficiency involved the lack of procedural guidance in the local Alarm Response Guide (ARG) for required actions following receipt of either the "Low Activity Waste Transfer Tank Level High" or the "High Activity Waste Tank Level Hi" alarm. These alarms are located on a local Waste Disposal Panel in the auxiliary building, and upon receipt of any panel alarm, cause 1SA-9/B-6 "WD Waste Disposal Panel Trouble" to alarm in the control room. Once this

alarm is received, manual actions are required to investigate the alarm source at the local Waste Disposal Panel. The inspector reviewed the ARG for the two tank alarms and discovered that the required actions for these alarms was to limit input into the tanks, and to discharge or transfer water from the tanks. No guidance was given to assess potential flooding conditions that could be ongoing in the HPI pump room, or to patrol the auxiliary building if the source of in-leakage was unknown. The inspector noted that LAWT level is particularly important in diagnosing potential flooding events because all auxiliary building drains are routed to the LAWT. The inspector concluded that no procedural tie existed between these high tank alarms and AP/1&2/A/1700/030, Auxiliary Building Flood, Revision 004, and AP/3/A/1700/030, Auxiliary Building Flood, Revision 004. As a result, the licensee generated PIP O-02-07169 to address providing additional guidance that links these high level tank alarms to the auxiliary building flood APs when warranted. Subsequent to the completion of this inspection, the licensee completed revisions to the ARG associated with these alarms for Units 1, 2, and 3. The inspector reviewed these procedural revisions and concluded that this guidance was adequate in ensuring that control room operators would properly identify and enter the appropriate auxiliary building flood APs if any of these alarms were received and acknowledged during actual flooding conditions.

The second deficiency involved the lack of reflash capability associated with control room alarm 1SA-9/B-6 "WD Waste Disposal Panel Trouble". Through discussions with operations personnel, the inspector learned that if any local waste disposal panel trouble alarm was sealed in, and a LAWT or HAWT high level alarm was received, the control room would not be alerted to either condition by receipt of 1SA-9/B-6 "WD Waste Disposal Panel Trouble" alarm. The lack of reflash capability contributed to an event that occurred on November 10, 2001, when leakage through a stuck open LPI cooler relief valve caused the Unit 3 HAWT to overflow into the HPI pump room. This event resulted in the issuance of non-cited violation (NCV) 50-287/01-04-01, Failure to Follow Abnormal Procedure for Auxiliary Building Flooding, when the licensee failed to enter the auxiliary building flood procedure after an entry symptom was met. Because this condition still existed, the inspector reviewed PIP O-02-04270, dated August 13, 2002, that had previously identified that some control room alarms lacked reflash capability. At the time of the inspection, however, no evaluation had been performed that determined or prioritized which of these alarms, if any, would be modified to have reflash capability. In addition, after reviewing the current and previous revisions of the auxiliary building flood APs, the inspector noted that all entry symptom alarms, including those associated with the LAWT and HAWT high level conditions, were deleted. The licensee stated that these procedure changes were made so that control room operators would not be limited in entering the procedure when other flooding conditions existed other than those listed in the procedure. The inspector concluded that these procedure changes further weakened the procedural tie between the LAWT and HAWT high level alarms and the auxiliary building flood APs.

The third deficiency involved the lack of procedural guidance associated with control room computer alarms 01A1352 and 01A1353, LAWT and HAWT Hi Hi Level alarms. These alarms provide separate and redundant alarm indication in addition to the waste disposal panel trouble alarms. Based on the aforementioned absence of reflash capability associated with the waste disposal panel trouble alarms, these computer alarms are important in alerting control room operators of high waste tank conditions as

a possible indication that an auxiliary building flooding event is in progress. Discussions conducted with operations and engineering personnel indicated that these alarms did not have any procedural guidance associated with them, and therefore could not provide a documented procedural tie to the auxiliary building flood APs. The inspector did learn, however, that these alarms had been changed from a Priority 2, to a Priority 1 alarm (Priority 1 alarms are required to be called out and acknowledged in the control room area). The licensee contended that operator skill, training, and knowledge of the auxiliary building flood APs would be sufficient to ensure that control room operators would enter the auxiliary building flood procedure as needed upon receipt of these alarms.

The inspector concluded that these deficiencies weakened the licensee's ability to properly identify and diagnose auxiliary building flood events, and further challenged the control room operators in entering the auxiliary building flood procedure within the required 15 minutes. This time limit was established in the licensee's time critical operator action program as the allotted identification period in order that mitigating strategies could be successful in combating an auxiliary building flood event. However, in light of the change in priority of the LAWT and HAWT computer alarms to a Priority 1 alarm, and the training which all licensed operators received on the auxiliary building flood APs, the inspector concluded that the risk significance associated with these deficiencies was minor.

b. Prioritization of corrective actions

The inspector concluded that overall, the licensee's corrective actions were properly prioritized to address the risk. The licensee managed the prioritization of corrective actions associated with this finding, and ensured that risk and defense in depth insights were properly incorporated through monthly meetings of the Oconee Design Review Board and the Engineering Manager's staff meeting. The inspector verified the prioritization for planned corrective actions was adequate and reviewed various Modification Activation Request Forms, as applicable.

c. Establishment of schedule for implementing and completing the corrective actions

The inspector verified that the licensee's corrective action program identified assigned individuals, completion dates, and reference numbers to facilitate adequate tracking of corrective actions to ensure the correction actions would be completed commensurate with their priority. The inspector verified implementation of a majority of completed corrective actions, and reviewed all planned/pending corrective actions. Pending corrective actions are identified in the Oconee LAR submitted to the NRC, dated November 1, 2002.

d. Establishment of quantitative or qualitative measures of success for determining the effectiveness of the corrective actions to prevent recurrence

The licensee has established qualitative measures specific to addressing actions related to auxiliary building flooding. These include the addition of a new system engineering position, a Flooding Engineer, that would provide system oversight and management of flooding issues; the periodic monitoring of HPSW piping within the service water pipe

monitoring program; continued review and analysis of potentially related trends through periodic PIP screening reviews; and the ongoing effort to identify and improve design basis issues administered through the Oconee Design Basis Group.

e. **Assessment**

Overall, the inspector determined that the licensee's corrective actions (completed and pending/planned) were adequate. Identified deficiencies were acknowledged by the licensee, and determined by the inspector to have minor risk significance. Accordingly, the White mitigating systems finding (including associated violation 50-269, 270,287/02-11-01) is closed.

03 **Exit Meeting**

The inspector presented the inspection results to members of licensee management at the conclusion of the inspection on December 17, 2002. The licensee acknowledged the findings presented. The inspector asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

D. Baxter, Engineering Manager
E. Burchfield, Engineering
D. Coyle, Operations Procedures Manager
W. Foster, Safety Assurance Manager
B. Jarrett, Safety Review Engineer
R. Jones, Site Vice President
G. McAninch, Engineering
K. McMurray, Operations Support Engineer
L. Nicholson, Regulatory Compliance Manager
D. Simpson, Maintenance Supervisor
J. Smith, Regulatory Compliance Technician
J. Weast, Regulatory Compliance Technician
A. Wells, Engineering

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

None

Closed

50-269,270,287/02-11-01	VIO	Inadequate Corrective Actions in Response to a Lack of Mitigation Capabilities for a Potential Auxiliary Building Flood (Section 02.03.e)
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Discussed

None

DOCUMENTS REVIEWED

NRC Letter, Robert Haag, Chief, Branch 1, Division of Reactor Projects (DRP), Region II (RII) to Mr. W. R. McCollum, Vice President Oconee Nuclear Station, NRC Integrated Inspection Report 50-269,270,287/00-08, URI 50-269,270,287/00-08-02: Risk Significance of Potential Flooding Problem From Non-Safety Related Lines in the Auxiliary Building, dated April 30, 2001

Attachment

NRC Letter, Robert Haag, Chief, Branch 1, DRP, RII to Mr. W. R. McCollum, Vice President Oconee Nuclear Station, NRC Integrated Inspection Report 50-269,270,287/01-04, NCV 50-287/01-04-01: Failure to Follow Abnormal Procedure for auxiliary Building Flooding, dated January 28, 2002

NRC Letter, Victor M. McCree, Deputy Director, DRP, RII to Mr. W. R. McCollum, Vice President, Oconee Nuclear Station - NRC Inspection Report 50-269,270,287/00-08; Preliminary White Finding, EA-02-034, dated March 12, 2002

NRC Letter, Victor M. McCree, Deputy Director, DRP, RII to Mr. W. R. McCollum, Vice President, Oconee Nuclear Station, Final Significance Determination For a White Finding And Notice Of Violation (NRC Inspection Report 50-269,270,287/02-11, Oconee Nuclear Station, EA-02-034, dated July 26, 2002

Duke Letter, Ronald A. Jones, Vice President, Oconee Nuclear Station, to NRC document Control Desk: Proposed License Amendment Regarding Revisions to the Licensing Basis for the UFSAR Section on Water Level (Flood) Design (TSC 2002-06), dated November 1, 2002

PIP O-02-07169, NRC identified the lack of procedural guidance in the Alarm Response Guide for LAWT and HAWT high level alarms and the entry conditions to the auxiliary building flood AP

PIP O-02-04270, Identified the lack of reflash capability for several control room statalarms including the "Waste Disposal Panel Trouble" alarm

PIP O-96-00421, Research and document findings within the Auxiliary Building (AB) DBD to determine if a statement in the seismic DBD regarding dry fire protection headers in the AB is an appropriate means of preventing flooding

PIP O-98-03017, Identified that an incorrect statement existed in Oconee FSAR Supplement 13 dated January 29, 1973 which stated that the fire protection system does not constitute a threat of flooding in the Auxiliary Building due to the fact that the headers inside the Auxiliary Building will be empty and dry

PIP O-99-01286, Identified the need to clarify the design basis for internal flooding of the Auxiliary Building

PIP O-02-1732, NRC Inspection Report 2000-08, dated March 12, 2002, proposed preliminary white finding

PIP O-01-01082, HPI pump room trench water level approximately ½" from top. Repeat problem

PIP O-01-04424, Due to the extended time to recognize the leakage past 3LP-36 to the HAWT, evaluate statalarms and improvements to alarm response for statalarms with multiple inputs

PIP O-01-4195, LPI system leak and U-3 HAWT overflow due to 3LP-36 (3A LPI Cooler Inlet Relief) stuck open

PIP O-02-04678, Level II assessment was performed to identify additional design basis initiatives needed to meet in accordance with the design basis focus at Oconee

ONDS-0349, Oconee Nuclear Station Auxiliary Building Internal Flood Study

Project Plan, Auxiliary Building Flooding, approved 10/7/02

Oconee Nuclear Site, Overview of Design Basis Initiatives, approved 11/6/02

Oconee Updated Final Safety Analysis Report

NSD 514, Control of Time Critical Tasks, Revision 0

NSD 703, Administrative Instructions for Technical Procedures, Revision 22

NSD - 212, Cause Analysis, Revision 12

NSD - 208, Problem Investigation Process, Revision 22

OP/0/A/6100/020, Alarm Response Guide SA-20, Revision 001

AP/1&2/A/1700/030, Auxiliary Building Flood, Revision 004

AP/3/A/1700/030, Auxiliary Building Flood, Revision 004

AP/0/A/1700/025, Standby Shutdown Facility Emergency Operating Procedure, Revision 025

OP/0/B/0145/004, OAC/PMC - Performing Database Changes, Revision 1

SM/0/B/8530/002, Periodic Inspection for Corrosion Induced Wall Thinning, Revision 000

Oconee Operations Training, Time Critical Action (EAP-TCA) Lesson Plan, approved 2/5/02

Spec. OSS-0254.00-00-4005, Time Critical Actions Matrix (Included Flooding - AB)

ON-OPS-1146501, Oconee Operations Training and Qualifications Guide, Revision 00, Task: Perform Outside the Control Room Actions to Control Auxiliary Building Flooding per the Auxiliary Building Flooding AP, dated 6/5/01

OMP 4-02, Enclosure 9.9, Validation of Local Step Timing for Auxiliary Building Flood Event

Engineering Manual, EM-4.6 Engineering System, Structure, and Component Walkdowns, Revision 2

Service Water Piping Inspection Program, Engineering Support Document, Revision 1

Powerdyne Corporation Letter, Donald C. Prevatte, to Mr. J. E. Burchfield, Engineering Supervisor II, dated August 8, 2002

Duke Letter, Jim Yeast, to George McAninch, The Staged Mitigation Equipment for Auxiliary Building Leaks, dated 12/03/02

Piping/fitting UT Data Sheets, HPSW System 16" Piping, UT Code #'s: C1HPS001, C1HPS002, C1HPS003, C1HPS004, C1HPS005

PM Action Request Form, Model Number 91038148 & 91038162, Periodic Calibration of LAWT and HAWT Hi Hi Level Alarms

OSS-0254.00-00-4020, Appendix F, Oconee Nuclear Station System Function List, Revision 8, Auxiliary Building Flood Supersystem, approved 6/19/02

Work Request 98230660, Set Alarm Priority to 1 For 01A1352 and 01A1353, dated 4/17/02