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SUBJECT: Responds to NRC 980420 ltr re violations noted in insp repts
50-269/98-02, 50-270/98-02 & 50-287/98-02. Corrective actions:
temporary mod ONTM-2006 was generated by engineering.

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May 20, 1998

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555

Subject: Oconee Nuclear Site
Docket Nos. 50-269, -270, -287
Inspection Report 50-269, -270, -287/98-02
Reply to Notices of Violation

Gentlemen:

By letter dated April 20, 1998, the NRC issued five Notices of Violation as described in Inspection Report No. 50-269/98-02, 50-270/98-02, and 50-287/98-02.

Duke Energy Corporation (Duke) accepts these violations. As described in the attachments, Duke is proposing corrective actions to address the root causes of the violations.

Pursuant to the provisions of 10 CFR 2.201, the attachments provide written responses to the subject violations as identified in the subject Inspection Report.

Corrective actions in Section 3 of each response are the only regulatory commitments in this submittal.

Very truly yours,

W. R. McCollum, Jr.
Site Vice President
Oconee Nuclear Station

Lead

Attachments (5)

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Q PDR

NRC Document Control Desk

May 20, 1998

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cc: Mr. L. A. Reyes, Regional Administrator
U. S. Nuclear Regulatory Commission, Region II

Mr. D. E. LaBarge, Project Manager
Office of Nuclear Reactor Regulation

Mr. M. A. Scott
Senior Resident Inspector
Oconee Nuclear Site

Attachment 1
Reply to Notice of Violation (Reply)
Violation 98-02-03

Restatement of the Violation 98-02-03

10 CFR 50 Appendix B, Criterion V, Instructions, Drawings and Procedures, states that activities affecting quality shall be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, and drawings.

Nuclear System Directive 301, Nuclear Station Modifications, Revision 13, states that temporary changes to structures, systems and components within the nuclear facility are considered modifications and are required to be controlled.

Contrary to the above, on February 11, 1998, the licensee made temporary changes to the hotwell suction line for the Unit 2 turbine driven emergency feedwater pump without implementing the temporary modification process specified in Nuclear System Directive 301.

This is a Severity Level IV violation (Supplement I).

RESPONSE:

Duke Power acknowledges the violation.

1. The reason for the violation:

On February 11, 1998, maintenance personnel were installing base plate anchor bolts in the turbine building basement floor for minor modification OE-11459. During the installation, a ½ inch hole was drilled inadvertently through the concrete and into the embedded pipe of the Unit 2 turbine driven emergency feedwater pump (TDEFWP) suction from the hotwell. This hole created a vacuum leak to the condenser. As an emergency repair, a rubber plug was inserted into the ½ inch hole and sealed using the trouble-shooting procedure, MP/O/A/1800/22. The emergency repair was performed by Maintenance with oversight from Maintenance management, Operations, and Engineering. Installation of the rubber plug changed the configuration of the plant. As a result, a temporary modification should have been generated.

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The apparent root cause of this event is a programmatic deficiency. There are certain emergent repair situations which can arise where a single point of contact (SPOC), with appropriate guidance, is permitted to take immediate actions which can affect physical changes to the plant. In these cases, there is no clear owner who has the responsibility to ensure that these physical changes are documented and evaluated per the temporary modification process.

2. The corrective steps that have been taken and the results achieved:

- a) The need for a temporary modification was recognized on February 14, 1998, and temporary modification ONTM-2006 was generated by Engineering.
- b) Operations has designated the Shift Work Manager as the owner of the responsibilities to ensure plant configuration is maintained in emergent repair situations where immediate actions are required that affect physical changes to the plant. His responsibility will be to ensure that a temporary modification or other appropriate documentation is generated.

3. The corrective steps that will be taken to avoid further violations:

The appropriate directives or guidance documents will be revised to document the Shift Work Manager responsibilities.

4. The date when full compliance will be achieved:

Duke is in full compliance.

Attachment 2
Reply to Notice of Violation (Reply)
Violation 98-02-04

Restatement of the Violation 98-02-04

10 CFR 50 Appendix B, Criterion V, Instructions, Drawings, and Procedures, states that activities affecting quality shall be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, and drawings.

Nuclear System Directive 104, Housekeeping, Material Condition, and Foreign Material Exclusion, Revision 18, states in part that when parts, tools, or other items can be dropped into the system, implement documentation of tools and materials that enter or leave the cleanliness zone.

Procedure OP/O/A/1510/016, Miscellaneous Spent Fuel Pool (SFP)/Canal Operations, Revision 03, Enclosure 3.4. Diving Operations in SFP/Canal, states in part that, the requirements of Nuclear System Directive 104 SHALL be in effect for all activities performed under this procedure.

Contrary to the above, on February 23, 1998, the inspectors identified multiple undocumented items inside the Unit 1 and 2 SFP foreign material exclusion area.

This is a Severity Level IV violation (Supplement I).

RESPONSE:

Duke Power acknowledges the violation.

1. The reason for the violation:

While conducting diving operations in the Unit 1&2 Spent Fuel Pool on Monday, February 23, 1998, it was noted that one 1/2 inch ratchet, two 3/4 inch sockets, one 1 1/8 inch socket, and a nut splitter had been placed inside the work area without being logged in the foreign materials exclusion (FME) log.

The individual responsible for the log was also responsible for running the controlling procedure, logging materials into and out of the FME area, and ensuring the logistical support and safety of the divers. The individual's primary area of focus was the safety of the divers.

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Violation 98-02-04

The Inappropriate Action (not ensuring all items were logged into and out of the FME area) occurred because of lack of attention to detail by the Maintenance technician in ensuring the procedure was followed properly. During performance of the procedure, the technician focused on monitoring the safety of the diver and did not ensure that material/parts logging was being maintained. This task had been performed previously by this technician successfully.

2. The corrective steps that have been taken and the results achieved:
 - a) The tools were immediately logged into the area.
 - b) An inventory was taken of the equipment and tooling being used for the job. All equipment and tooling was verified to be appropriately logged in.
 - c) A person totally dedicated to the FME logging function was assigned.
 - d) An assessment was performed of the FME practices in and around the Spent Fuel Pool. The assessment was documented in Oconee's corrective action program.
 - e) The Maintenance technician and supervisor were counseled and appropriate disciplinary action was taken.

3. The corrective steps that will be taken to avoid further violations:
 - a) A team of Fuel Handling experts from all three Duke nuclear sites is reviewing the safety and FME requirements around the fuel transfer canal and spent fuel pool to identify and implement improvements.
 - b) Specific work place guidance will be developed either through procedures or checklists for anyone working in or around the Oconee Spent Fuel Pools and Transfer Canals.

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- c) Guidance and expectations for conduct in the Spent Fuel Pool will be clearly posted. A point of contact will be established for assistance in meeting FME requirements.
 - d) Expectations of designating a FME Monitor regardless of who is working in and around the fuel transfer canal and spent fuel pool will be established.
 - e) An inventory of items which remain inside the FME boundary will be established. A list of items which have been analyzed as fail safe if dropped will be generated.
4. The date when full compliance will be achieved:
- Duke is in full compliance.

Attachment 3
Reply to Notice of Violation (Reply)
Violation 98-02-05

Restatement of the Violation 98-02-05

10 CFR 50 Appendix B, Criterion V, Instructions, Drawings, and Procedures, states that activities affecting quality shall be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, and drawings.

Site Directive 2.2.1, Minor Modification Program, dated August 28, 1997, Section 3.10, Procedures/Engineering Instructions states, in part, that: "If an existing procedure is used, it shall contain detailed instructions sufficient to perform the Quality Assurance (QA) condition 1 activities needed to perform the modification."

Contrary to the above, on January 20, 1998, a minor modification was performed on the high pressure injection system without detailed instructions sufficient to perform QA-1 activities. Specifically, valve 1HP-286, a reactor coolant pump seal injection block valve, was installed in the system without proper engineering instructions to support packing installation that was a part of the modification work.

This is a Severity Level IV violation Supplement I.

RESPONSE:

Duke Power acknowledges the violation.

1. The reason for the violation:

1HP-286, a reactor coolant pump seal injection block valve, was installed in the system under Work Request No. 97022056 and Minor Modification ONOE-10202, using Oconee maintenance procedure MP/0/A/1810/14. This valve utilizes a bellows type stem seal for the primary stem sealing and has normal packing installed as a back-up for the bellows seal.

The minor modification package documentation, which consists of detailed engineering instructions and references Maintenance Procedures, did not appropriately require a check of the packing prior to placing the valve in service.

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Violation 98-02-05

The modification personnel that installed the valve were the only maintenance personnel that looked at the valve during the installation process. Since the modification installation procedures did not require a check of the packing, no packing check was made by the personnel installing the valve.

2. The corrective steps that have been taken and the results achieved:

- a) Immediate corrective action was to properly tighten the packing per corrective Work Request No. 98020550.
- b) The Oconee Station organization has implemented a Material Condition (MATCON) team to routinely survey all areas of the plant for compliance with material condition standards. The checking of stud engagement and packing followers is part of those surveys. When deviations from the accepted standards are noted, the deviation is identified in the site corrective action program and the site work management system for expedient evaluation and repair.

3. The corrective steps that will be taken to avoid further violations:

- a) Oconee Maintenance will implement a "pre-service inspection" maintenance procedure on all new valve installations. This procedure will ensure that all items critical to valve function are checked before a new valve is placed in service.
- b) Engineering and Work Control and Maintenance personnel will be trained on the new procedure.
- c) The process will be modified to ensure that the new procedure is specified for use during any new valve installation.

4. The date when full compliance will be achieved:

Duke is in full compliance.

Attachment 4
Reply to Notice of Violation (Reply)
Violation 98-02-07

Restatement of the Violation 98-02-07

10 CFR 50, Appendix B, Criterion V, Instructions Drawings, and Procedures, states that activities affecting quality be prescribed by documented instructions or procedures, and shall be accomplished in accordance with these instructions or procedures.

The Duke Power Chemistry Materials Guide Program SDQA Plan "D", Revision 25, requires that before materials are designated for use in any plant application involving stainless steel material, they are to be analyzed for impurities and approved for use as specified in the above-mentioned guide.

Nuclear System Directive 104, Housekeeping Material Condition and Foreign Material Exclusion, Revision 10, requires that the use, location and deployment of materials shall be controlled to prevent conditions that will adversely affect quality; that mechanical components shall be properly maintained to reflect no degree of neglect; that area owners are responsible for ensuring that material condition/housekeeping measures are working effectively and that corrective measures are initiated for all related problems.

Contrary to the above, activities affecting quality were not accomplished in accordance with procedures, as evidenced by the following examples:

1. As of March 4, 1998, Duke Power Chemistry Materials Guide Program requirements had not been implemented in that lagging adhesive CP50 was used on stainless steel piping valves and fasteners located in the Unit 2 west penetration room and high pressure injection room 58 without first being analyzed for impurities and approved for use in specified applications by the licensee's chemistry group.
2. On March 4, 1998, material condition and housekeeping practices inside the Unit 2 west penetration room and high pressure injection Room 58, were not in accordance with Nuclear System Directive 104 requirements in that gray duct tape, paint smudges, and paint splatters were observed on stainless steel piping, valve bodies, valve motor operator covers, hand wheels and electrical cables; lagging material deposits were observed on a wall mounted instrument line support; the motor stand of high pressure injection pump 2B exhibited a film of oil on the horizontal surface; and

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Reply to Notice of Violation (Reply)
Violation 98-02-07

significant amounts of coating had peeled off equipment and floors.

This is a Severity Level IV violation (Supplement I).

RESPONSE:

Duke Power acknowledges the violation.

1. The reason for the violation:

Contrary to the requirements of the Duke Power Chemistry Materials Guide, unanalyzed surface applied materials were allowed to come into contact with, and remain on, stainless steel piping and components. Implementation of Nuclear System Directive 104, Housekeeping, Material Condition, and Foreign Material Exclusion, was inadequate to prevent, identify, or correct the conditions described in the violation.

The root cause of this problem is an inadequate program design. The housekeeping and material condition program described in NSD-104 does not include adequate controls to assure compliance with Power Chemistry Materials Guide (PCMG) requirements. In addition, activities to control the use of surface applied materials and maintain acceptable material conditions were not incorporated into the Work Management System. Pre-job briefings to address potential dangers associated with the use of particular surface applied materials were not required.

A contributing factor of inadequate program management was also identified. Implementation of NSD-104 was inadequate to identify and correct housekeeping, material condition, and PCMG program deficiencies. Response to station problem identification reports (PIPs) and audits which identified deficiencies in the implementation of the housekeeping and material control programs were ineffective in correcting the problems or making appropriate enhancements to the programs.

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2. The corrective steps that have been taken and the results achieved:

- a) Past and present system operability evaluations have been completed. All affected systems were determined to be operable.
- b) The lagging adhesive on stainless steel piping, cited in the first example of the violation, was cleaned. Tests of the cleaned areas showed acceptable chloride and fluoride levels.
- c) The paint splatters, cited in the second example of the violation, were found to be on Category 2 piping.
- d) On March 5, 1998, Maintenance Management initiated a work stand down, for all Insulation and Coatings Teams. Examples of inappropriate actions such as paint splatter, mastic splatter, and the use of gray tape were reviewed. Expectations regarding work practices were communicated. The potential for stress cracking from mastic (CP-50) adhesive and gray duct tape was specifically reviewed.
- e) Patch tests were done on numerous locations where gray duct tape was found on stainless steel materials. All test results were acceptable. In addition, three different types of duct tape in the warehouse were sampled for chemical content and all were determined to be suitable as Category I materials. A stock code was set up for yellow duct tape that meets Category I criteria. Gray tape will no longer be stocked.
- f) A recall was issued on all gray duct tape on the site. This material was banned from the site and a suitable Category I substitute has been procured for future use.
- g) Plant samples of the mastic (CP-50), paint, and gray duct tape were taken and analyzed. It was determined that the chloride and fluoride content for two of these products, mastic (CP-50) and gray duct tape adhesive, could cause stress cracking on stainless steel piping if temperatures exceeded 200 degrees F.
- h) On March 30, 1998, a site wide communication explaining the need for control of surface applied materials was included as part of the Site Team Notes. In addition, this communication directed the management of specific divisions and groups to

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cover the subject in greater detail, using guidance provided, at weekly team meetings.

- i) A study was done by Maintenance, Engineering, and Chemistry to determine a safe method to remove these materials from the pipe. The guidelines are identified in Model Work Order No. 98041972.

3. The corrective steps that will be taken to avoid further violations:

- a) Work Control Planning is pursuing the procurement of a suitable Category I adhesive that will minimize potential hazards to stainless steel components.
- b) An Inspection Team was formed to determine if the use of inappropriate materials was wide spread and to identify and record additional locations. The primary focus was all Class "A" system piping and selected Class "B" system piping. All accessible areas of all three units are being examined. The team found examples on all three Units. Records have been maintained for all locations where this problem exists and a team is in the process of cleaning the mastic and gray duct tape from these areas using an approved process for removal.
- c) A site initiative is in progress to improve the Materiel Condition of all three Units at Oconee Nuclear Station. This initiative has two parts, (1) a plant clean up to improve housekeeping, and (2) a long term task to raise the level of awareness of the importance of the Power Chemistry Materials Guide (PCMG).
- d) An assessment of the PCMG and an implementation plan for recommended changes and enhancements will be completed by June 30, 1998.
- e) An assessment of the NSD-104 and PCMG program implementation will be performed. The assessment will focus on adequacy of existing procedures/directives, program interfaces, training, and work place controls to prevent further violations.

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4. The date when full compliance will be achieved:

Duke is in compliance in that the cited examples have been corrected. Process improvements are being implemented to assure proper control of materials.

Attachment 5
Reply to Notice of Violation (Reply)
Violation 98-02-12

Restatement of the Violation 98-02-12

10 CFR 50 Appendix B, Criterion III, Design Control, and the Duke Topical Report, state in part that design control measures shall provide for verifying or checking the adequacy of design by the performance of design reviews. Design control measures shall be applied to items such as reactor physics analysis.

Nuclear System Directive 306, Nuclear Fuel Reliability, dated December 30, 1997, which implements the above, assigned ownership for the fuel reliability program to the corporate office. Subsection 306.2.15 indicated that the corporate office was to evaluate fuel design changes and relevant plant modifications for their impact on fuel reliability.

Contrary to the above, on February 4 and 10, 1998, the licensee discovered that design change errors had been introduced into and implemented in Technical Specification 3.5.2.6, addressed core operating limits report power-imbalance limits, and computer alarm set points for all three units.

This is a Severity Level IV violation (Supplement 1).

RESPONSE:

Duke Power acknowledges the violation.

1. The reason for the violation:

There were two root causes for this violation. The first cause was poor communication between a vendor and Duke Power. Duke received an inadequate notification of changes in the format utilized by the vendor to report to Duke Power inputs for calculating the operating limits. Prior to this incident, the vendor-supplied inputs did not incorporate the impact of the Energy Deposition Factor (EDF). When the impact of the EDF was incorporated in the vendor-supplied inputs the change was inadequately emphasized in communications with Duke Power.

The second cause was an inadequate review of supporting documentation by the individual who utilized the vendor-supplied inputs and by the reviewer. While the changes were not

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adequately emphasized by the vendor, a thorough review of the available documentation could have identified the change and precluded the subsequent misapplication of the vendors inputs.

2. The corrective steps that have been taken and the results achieved:
 - a) The calculation of the operating limits was revised to correctly incorporate the use of the vendor supplied inputs and the corrected operational alarm limits were installed prior to the cycle burnup when the reduced limits were required.
 - b) All other cycle analyses were reviewed for similar problems. An action was also documented in Duke's corrective action program to evaluate the potential impact on all other core designs. The completed evaluations identified no current or past operability concerns.
 - c) This event was reviewed by the supervisor with the Nuclear Design group on March 25, 1998, stressing the need for error-free calculations and a thorough review of calculation inputs and their supporting documentation.
 - d) An assessment of the reload design process was conducted with the fuel vendor on April 28-30, 1998, to identify any other potential weaknesses. A team consisting of one manager and four engineers visited the vendor's facilities to perform this assessment. A particular focus was given to interfaces and communications between the vendor and Duke Power. Although improvements from the assessment will be evaluated, no other interface or communication problems related to this violation were identified.
 - e) Nuclear Engineering Workplace Procedure NE-102, "Workplace Procedure for Nuclear Fuel Management" was revised to identify additional requirements for interfacing with the vendor for LOCA analysis limits and for Safety Analysis to document and transmit the limits

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to Nuclear Design, clearly noting any LOCA limit application requirements.

3. The corrective steps that will be taken to avoid further violations:

The completed actions are adequate to avoid further violations.

4. The data when full compliance will be achieved:

Duke is in full compliance.