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 Document Control Branch (Document Control Desk)

SUBJECT: Responds to NRC 970804 ltr re violations noted in insp repts
50-269/97-09, 50-270/97-09 & 50-287/97-09 respectively.
Corrective actions: 525KV relay house & svc bldg have been
scope into maint rule.

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September 8, 1997

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, -287/97-09
Reply to Notices of Violation

Gentlemen:

By letter dated August 4, 1997, the NRC issued two Notices of Violation as described in Inspection Report No. 50-269/97-09, 50-270/97-09, and 50-287/97-09.

Duke Energy (Duke) accepts these violations. However, Duke takes exception to Example 1 of Violation 97-09-01. Duke believes that the Auxiliary Instrument Air System does not meet the criteria for scoping into the Maintenance Rule. A revision to the UFSAR will clarify the role of the Auxiliary Instrument Air System at Oconee. To address the root causes of the violations, Duke is proposing corrective actions as described in the attachments.

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.

Very truly yours,

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

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Attachments (2)

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G PDR



NRC Document Control Desk

September 8, 1997

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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 97-09-01

Restatement of the Violation

10 CFR 50.65(b) establishes the scoping criteria for selection of safety related and non-safety related structures, systems, or components to be included within the Maintenance Rule program. Scoping criteria shall include safety related structures, systems, or components that are relied upon to remain functional during and following design basis events to ensure the integrity of the reactor coolant pressure boundary, the capability to shut down the reactor and maintain it in a safe shutdown condition, and the capability to prevent or mitigate the consequences of accidents that could result in potential offsite exposure comparable to the 10 CFR, Part 100 guidelines; and non-safety related structures, systems, or components that are relied upon to mitigate accidents or transients, or are used in the plant emergency operating procedures, or whose failure could prevent safety related structures, systems, and components from fulfilling their safety related function, or whose failure could cause a reactor scram or actuation of a safety related system.

Contrary to the above, as of June 23, 1997, the licensee failed to include a number of structures, systems and components within the scope of the Maintenance Rule as required. Specifically, the following structures, systems and components should have been included within the scope of the Maintenance Rule but were not:

1. Auxiliary Instrument Air System (AIA) - This non-safety related system was not included in the licensee's Maintenance Rule data base as within the scope of the Rule even though it is provided to mitigate the consequences of accidents or transients.
2. 525 KV Relay Building - This structure was not included in the licensee's Maintenance Rule data base as within the scope of the Rule even though it contained non-safety related 525 KV switchyard relays whose failure could cause a reactor scram.
3. Service Building - This structure was not included in the licensee's Maintenance Rule data base as within the scope of the Rule, even though an electrical load center which supplied electrical power to components in the demineralized water (D\N) system, which are used to mitigate accidents and are used in the emergency operating procedures was located within this structure.

Attachment 1
Reply to Notice of Violation (Reply)
Violation 97-09-01

Reply to the Notice of Violation

Duke Energy (Duke) agrees with the violation for the omission of the 525 KV Relay Building (Example 2) and the Service Building (Example 3) from the Maintenance Rule. However, Duke disagrees with the inclusion of the AIA System (Example 1) in the Maintenance Rule.

Response for Example 1.

The reason for omitting the Auxiliary Instrument Air System (AIA) System from the Maintenance Rule is that the current wording in the Oconee UFSAR Section 9.5.2.2, is not clear concerning the AIA System's importance to accident mitigation, especially with respect to its relationship to the Maintenance Rule. According to the UFSAR:

An AIA System provides a reliable auxiliary source of instrument air to key plant components needed to reach and maintain safe shutdown of the plant during a loss of Instrument Air (IA) event. This system is composed of three (one per unit) compressors, combination filters, and desiccant dryers. Separate distribution headers and supply lines are provided to these key components to ensure AIA availability.

The AIA System is not installed for accident mitigation. Although the AIA System may be available, it is not required for performing or supporting any operation required for accident mitigation. Each of the key plant components which are supplied backup air by the AIA, fails in a safe condition and has an alternate, procedurally controlled method to control the accident mitigation function;

<u>Component</u>	<u>Fail to Position</u>	<u>Alternate operator</u>
RCP Seal Injection	Fails Open	Manually operable
CC containment isolation	Fails Closed	Manually operable
Emergency FDW control	Fails Open	Manually operable
LPI Cooler/LPSW outlet	Fails Open	Alternate control w/Electric Operated Valves
Turbine Bypass Valves	Fails Closed	Alternate control w/Air Dependent Valves

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Should any of the above components be required for accident mitigation in support of a safety related activity, each component has procedural guidance provided through various Abnormal Procedures (APs), the Emergency Operating Procedures (EOPs), and Alarm Response Guides, involving either manual operation of that component or the operation of an alternate component designed to perform a similar function. The AIA System is not credited for operation of these components during design basis accident mitigation.

The Maintenance Rule (MR) Scoping asks the following questions:

- 1) Is the SSC safety related?

The AIA System does not perform any safety related functions. AIA supplied components were selected based on maintaining operations which minimize operator burden, during a Unit transient due to loss of IA, while reaching and maintaining safe shutdown. The AIA System is not required for performing or supporting any operation required for accident mitigation.

- 2) Is a non-safety related SSC used to mitigate accidents or transients?

AIA supplied components were selected based on maintaining operations which minimize operator burden, during a Unit transient due to loss of IA, while reaching and maintaining a safe shutdown. Each of the components served can either be operated locally without IA, has a backup component, or is not required for reaching and maintaining safe shutdown. The AIA system was intended to be a backup to IA in the event of an IA line break and not to support normal or emergency shutdown as a result of any other initiating events (i.e., dropped rod, steam generator tube leak, loss of feedwater, etc.).

- 3) Is a non-safety related SSC used in the EOPs (and Selected APs for Oconee) to perform an accident mitigation function?

AIA supplied components were selected based on maintaining operations which minimize operator burden, during a Unit transient due to loss of IA, while reaching and maintaining a safe shutdown. The Loss of Instrument

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Air AP refers to the AIA System, but actions in the AP are still provided should the AIA System not be available. These actions are similar to actions that were performed prior to the installation of the AIA System. Although the AIA System may be available, it is not required for performing or supporting any operation required for accident mitigation. Each of the key plant components supplied backup AIA fails in a safe condition and has an alternate procedurally controlled method to control the process.

- 4) Could the failure of a non-safety related SSC prevent a safety related SSC from fulfilling its Safety related function?

AIA supplied components were selected based on maintaining operations which minimize operator burden, during a Unit transient due to loss of IA, while reaching and maintaining a safe shutdown. The AIA System is not required for performing or supporting any operation required for accident mitigation and therefore would not prevent a safety related SSC from fulfilling its safety related function. Should any of the above components be required for accident mitigation in support of a safety related activity, each component has procedural guidance provided through various APs, EOPs, and Alarm Response Guides, involving either manual operation of that component or the operation of an alternate component designed to perform a similar function. The AIA System is not used for accident mitigation.

- 5) Could the failure of a non-safety related SSC cause a reactor trip or Safety System Actuation (SSA)?

The AIA System is normally in the standby mode. Should it inadvertently start, it would not cause a reactor trip or safety system actuation. The AIA System is designed such that a failure will not fail the primary IA System or affect operating equipment.

Therefore, the AIA System is not in the MR. Accordingly, the UFSAR will be revised to clarify the fact that the AIA System is not credited to mitigate any accidents or transients.

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Response for Examples 2 and 3.

Reason for the violation.

Duke Energy (Duke) agrees with the violation for the omission of the 525 KV Relay Building (Example 2) and the Service Building (Example 3) from the Maintenance Rule. The root cause for this violation is a weakness in the implementation process.

Example 2. The failure to scope the 525KV Relay House into the MR resulted from a weakness in the implementation process. This weakness is attributed to an initial lack of understanding of the requirement to scope SSCs if they "could cause" but had not caused a reactor trip. The original Duke implementation process scoped SSCs that "had caused" a reactor trip or safety system actuation. When it was determined that SSCs that "could cause" a reactor trip were also required to be included in the scope of the Maintenance Rule, an additional review of the SSCs that were not scoped in was completed. This review was documented in the Meeting Minutes of an Expert Panel Meeting held on June 25, 1996. At that time, structures were maintained in a separate data table and this example was not appropriately reevaluated for "could cause" a reactor trip.

Example 3. The failure to scope the Service Building into the MR resulted from a weakness in the implementation process. The Demin Water System, which has electrical load centers located in the Service Building, was initially not scoped into the Maintenance Rule because of a lack of understanding of what SSCs should be included if used in the EOPs. When it was determined that all SSCs used in the EOP to mitigate an accident were required to be included in the Maintenance Rule, the Expert Panel performed an additional review of all SSCs used in the EOPs. This review is documented in the Meeting Minutes of an Expert Panel Meeting held on June 25, 1996. At that time, structures were maintained in a separate data table and, by oversight, this example was not reevaluated as a supporting structure for the Demin Water System.

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

The 525KV Relay House and the Service Building have been

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scoped into the Maintenance Rule.

- This scoping has been evaluated by the Expert Panel and is documented in the Meeting Minutes of the Expert Panel Meeting held on August 6, 1997.
- These structures have also been added to the Maintenance Rule Civil Inspection schedule.

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

- The description of the AIA System in UFSAR 9.5.2.2 will be revised to clarify the fact that this system is not credited to mitigate the consequences of any accidents or transients.
- EDM 210 will be revised to include steps to verify all supporting SSCs are included. This will be completed by December 31, 1997.
- All non-Maintenance Rule SSCs will be reevaluated again for inclusion in the Rule with specific emphasis placed on structures and supporting SSCs. This will be completed by December 31, 1997.

4. The date when full compliance will be achieved:

Duke is in full compliance.

Attachment 2
Reply to Notice of Violation
Violation 97-09-03, Severity Level IV

Restatement of Violation 97-09-03

10 CFR 50.65(a)(1) requires, in part, that holders of an operating license shall monitor the performance or condition of structures, systems, or components against licensee established goals, in a manner sufficient to provide reasonable assurance that such structures, systems, or components, within the scope of the Maintenance Rule, are capable of fulfilling their intended functions. When the performance or condition of a structure, system, or component does not meet established goals, appropriate corrective action shall be taken.

Contrary to the above, as of June 23, 1997, the licensee failed to monitor adequately the performance or condition of structures, systems, or components against licensee established goals for a generic component problem related to failures of Clark motor starters, in a manner sufficient to provide reasonable assurance that the starters, were capable of fulfilling their intended functions. The goals and monitoring established for these failures were inadequate in that the only action specified was to implement a design change to replace the starters, which was to begin in 1998 and complete in 2002. These goals and monitoring were inadequate because of the following:

No evaluations were performed from a risk perspective to determine the acceptability of operating starters with this failure potential, in the interim until the design change could be implemented.

No monitoring activities were developed that would result in improving the performance of the motor starters in the interim prior to replacement.

No additional surveillance testing was developed, and no increase in surveillance frequency was provided, with the exception of the isolated failures.

No additional preventive maintenance activities were developed, and the length of time between preventive maintenance was not adjusted.

No priority for starter surveillance, preventive maintenance, or replacement was developed.

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Violation 97-09-03, Severity Level IV

No criteria was established for a change in the corrective action plan, should the failures become more frequent.

No criteria was established for monitoring of the effectiveness of the design change, once installation was started.

RESPONSE

1. The reason for the violation:

Duke Power acknowledges the violation.

The root cause for the violation is insufficient guidance. The 600v Clark Motor Control Center Starters were classified as A(1) due to the identification of repetitive failures. The first two failures occurred and were corrected in January 1993, and February 1995. These two failures were identified as repetitive during a historical review. As a result, the affected systems were identified as A(1) per the Duke Maintenance Rule (MR) program. It was later determined that it was more appropriate to identify a component as A(1), rather than a system, when repetitive failures exist. Following an additional starter failure, it was decided to make the component A(1) rather than an additional system.

The generic implications of the MCC Starter failures had been identified prior to the implementation of the Maintenance Rule. An evaluation had been completed which included discussions with the manufacturer to determine the optimum solution. Based on the manufacturer's notification that there were no replacement parts available, a modification was initiated to replace the starters. Additionally, the manufacturer recommended that additional PM's would not be effective in preventing failures and could actually increase failures. Because 'b' finger contact maintenance is not recommended by the manufacturer, no additional preventative maintenance (PM) activities were developed. Industry experience and Duke operating experience indicate that routine disassembly of the 'b' finger contacts may cause increased valve failures due to the resulting wear and tear on these small and fragile parts.

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Violation 97-09-03, Severity Level IV

After a review of the options to resolve the starter failures, it was determined that replacement of the starters was in the best interest of Duke Power. However, due to the economic impact and the available resources required, the motor control center starters were scheduled to be replaced over a five year period. The replacement was viewed as the permanent corrective action. Therefore, monitoring and testing activities and criteria for changing the corrective action plan were not considered, nor was an evaluation performed of the risk of operating starters with this failure potential. The reason for the violation is that there is insufficient guidance on how to deal with repetitive failures where the only manufacture recommendation is replacement and no preventive maintenance is recommended. As a result, appropriate goals and monitoring were not established.

2. Corrective actions taken and the results achieved:

Monitoring and testing activities are in place to determine the performance of the motor starters in the interim period prior to replacement. These include:

- 1) Stroke test for functionality following valve testing (Votes Procedures IP/0/A/3001/1 through 16). A full Votes test is performed every three refueling outages and includes approximately 235 valves. Beginning in the first quarter of 1998, Generic letter 96-05 will require the Votes testing to be based on PRA risk. As a result, valves assessed with a high risk will be tested each refueling, and those assessed with a lower risk may be tested every five refuelings.
- 2) Routine Performance testing (IST) verifies that the 'b' finger contacts permit the valve operator to move the valve. Failure of the valve to move will initiate trouble-shooting efforts. Approximately 320 valves at the site are stroke tested and timed quarterly provided that operating conditions permit. Valves that cannot be tested quarterly are tested on a refueling or cold shutdown frequency.

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- 3) A stroke test is performed for functionality following valve modifications (Votes Procedures IP/0/A/3001/1 through 16). Any Generic Letter 89-10 valve changed through the modification program will have a diagnostic test performed as part of the post modification testing.
- 4) A probabilistic analysis has been performed to predict the expected failure rates for MOVs. The results of this analysis will be used to monitor for any statistically significant changes in the failure rates for these valves.

3. Planned corrective actions:

1. The following NSMs have been approved and replacement of the safety related motor control centers will begin as follows:

Keowee	-----NSM #53027	Innage 67
Unit 1	-----NSM #13027	1EOC18
Unit 2	-----NSM #23027	2EOC17
Unit 3	-----NSM #33027	3EOC18

2. Follow-up goals and monitoring will be established following the implementation of these modifications to verify the adequacy of the modification.
3. To prevent recurrence of this problem, EDM 210 will be revised to include specific requirements to establish interim corrective actions and monitoring goals for A(1) SSCs when permanent corrective actions cannot be implemented in a reasonable period of time. This change to the EDM will be completed by December 31, 1997.
4. Based on the results of the probabilistic analysis, if the failure rate of Oconee MOVs exceeds the expected failure rate, an in-depth investigation will be conducted to determine the contribution to this failure rate by the 'b' finger failures. Appropriate changes will be made to the corrective action plan based on this investigation.

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4. The date of full compliance:

Duke Power is in full compliance.