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SUBJECT: Responds to NRC 970908 ltr re violations noted in insp rept 50-269/97-09,50-270/97-09 & 50-287/97-09.Corrective actions: RCS inventory were maintained & Controlled DHR were accomplished.

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October 9, 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 Notice of Violation
Supplemental Information

In a letter dated September 8, 1997, Duke Energy (Duke) responded to a Notice of Violation as described in Inspection Report No. 50-269/97-09, 50-270/97-09, and 50-287/97-09.

During an October 1, 1997, conference call between Duke and the NRC, the NRC requested that Duke submit additional information to support Duke's position that the Auxiliary Instrument Air (AIA) System does not meet the criteria for scoping into the Maintenance Rule. Specifically, the NRC requested additional information as to whether the AIA system is necessary to mitigate a transient.

Attachment 1 provides a detailed explanation of why the AIA system is not required to mitigate a transient.

If there are any questions regarding this submittal, please contact Ed Burchfield at (864) 885-3292.

Very Truly Yours,

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

Attachment

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
Loss of Instrument Air Scenario
With/Without Auxiliary Instrument Air

Oconee UFSAR Section 9.5.2.2 is not clear concerning the Auxiliary Instrument Air (AIA) System's importance to accident and transient mitigation, especially with respect to its relationship to the Maintenance Rule. Presently, the UFSAR states the following:

> "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."

In a Reply to Notice of Violation dated September 8, 1997, Duke described its basis for concluding that the AIA System does not fall within the scope of the Maintenance Rule. The September 8, 1997, Duke submittal described the fact that the AIA System was 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. This attachment provides additional information to describe the role of the AIA System during a loss of instrument air (IA) event.

Overview of the IA System

The purpose of the Instrument Air System is to supply a reliable source of clean, dry, oil-free compressed air, at the proper pressure, to the numerous valves, controllers, and instruments throughout the plant that operate on compressed air.

IA header pressure is maintained by the "Primary IA Compressor", a Sullair rotary screw compressor, rated at 2200 CFM. The "Backup IA Compressors" (Worthingtons) provide a backup source of IA should the need arise.

A third set of air compressors is installed to normally supply non-instrument type equipment, such as air drills, paint sprayers, or air hoses. Operating at approximately the same pressure as the Instrument Air System, this system is classified as the Service Air System. Two rotary screw-type air compressors manufactured by the Sullair Corporation meet the needs of the Service Air System. These compressors can, however, on demand, help supply instrument air loads, should the need arise.

A fourth source of air during emergency situations is from a diesel driven air compressor that can be aligned to the SA

header and manually started to help supply partial IA requirements. This path is functionally tested weekly.

The Primary Instrument Air Compressor is contained in the Maintenance Rule. Also, the Worthington Backup IA Compressors, the SA Sullair Compressors and the SA Diesel Air Compressor are all contained in the Maintenance Rule and could assist in preventing a Reactor Trip.

Description of the AIA System

The purpose of the Auxiliary Instrument Air (AIA) System is to provide a reliable source of instrument air to selected components during a loss of the Instrument Air (IA) System. AIA supplied components are selected based on maintaining operations which minimize operator burden while reaching and maintaining a safe shutdown. The AIA System is not required for performing or supporting any operation which is required for safe shutdown. The AIA System is designed to maintain a supply of instrument air to components during two basic failure modes involving the IA System:

1. line breaks with demands which exceed the IA System capacity, and
2. load shedding of the IA System equipment's electrical power supplies.

The AIA System on each unit consists of an AIA compressor (100 CFM capacity), prefilter, desiccant dryer, desiccant filter, receiver tank, distribution headers, and component supply lines. Each AIA supplied component has a supply line from both the AIA and IA Systems. The AIA and IA supply lines both contain a spring loaded check valve. These check valves prevent loss of instrument air to the AIA supplied component in the event of loss of either the IA or AIA System.

Concerning Transient Mitigation

The AIA System performs no function to assist the control room operators in preventing the unit from tripping as a result of a loss of IA event.

With the introduction of the AIA System at Oconee, operator burden was reduced in the performance of reaching and maintaining a safe shutdown required as a result of a reactor trip during a Loss of IA event. Prior to the introduction of the AIA System, procedures and processes were available and utilized in order to safely reach and maintain hot shutdown. These procedures and processes are still in place. Should the AIA System not be available,

each of the AIA supplied components utilized in the safe recovery of the unit after a reactor trip, has procedural guidance provided through the various Abnormal Procedures (APs), the Emergency Operating Procedures (EOPs), and Alarm Response Guides. Recovery actions involve either manual operation of that component or the operation of an alternate component designed to perform a similar function.

Description of the Loss of Instrument Air Scenario

The loss of IA event is initially addressed by the control room operators using AP/*/A/1700/22, Loss of Instrument Air Abnormal Procedure (AP).

The first indications of a loss of IA event are decreasing IA header pressure (initially at 100 psig) as indicated by the control room air header pressure gauges, and the following statalarms:

- "AUXILIARY BUILDING COMPRESSED AIR HDR PRESS LOW" and
- "IA INSTRUMENT AIR SYSTEM TROUBLE."

Automatic Backup system actions are as follows:

- The two Backup Worthington IA Compressors that are in STANDBY 1 will start at » 93 psig decreasing IA pressure.
- The backup Worthington IA Compressor that is in STANDBY 2 will start at » 90 psig decreasing IA pressure.
- The Unit Auxiliary Instrument Air (AIA) Compressor starts at 88 psig decreasing IA Pressure, to supply only a select group of important equipment that aids in minimizing operator burden.

Manual backup is provided by direction of the AP to send an operator to start the Service Air Diesel Air Compressor and align it into the IA System.

The Worthingtons and the Diesel IA Compressors supply the entire IA System. Assuming the IA System is degraded such that neither the primary, three Backup IA Compressors, nor the Service Air Diesel Air Compressor are able to repressurize the IA Header, the following will happen whether or not the AIA system is operable:

- Main and Startup Feedwater (FDW) Control valves fail "AS IS" at » 70 to 30 psig IA Hdr press, and
- Heater Drain (HD) control valves will fail open.

Both of above actions will adversely affect control of the Condensate and Feedwater (FDW) Systems such that the AP directs the control room operator to manually trip the reactor and trip both Main FDW Pumps if FDW flow becomes uncontrollable.

A reactor trip results in entry into EP/1/A/1800/01, EMERGENCY OPERATING PROCEDURE (EOP). The purpose of the EOP is to provide the actions required to place and maintain the reactor in a safe condition following a reactor trip.

The AIA System performed no function to assist the control room operators in preventing the unit from tripping. The following description addresses what the AIA System does in order to limit operator burden. This list is not inclusive of all the components served by the AIA System.

Function Supported By AIA	**With AIA**	**Without AIA**
Component Cooling (CC) System supply to the Reactor Building (RB)	With AIA, CC will support Letdown Heat Exchangers, Reactor Coolant Pump (RCP) Seal cooling, and Control Rod Drive Motor (CRDM) cooling.	CC-8 (CC Return Penetration Return Outside Block) fails closed, the safe condition. The AP directs operators to manually open CC-8 (CC Return Penetration Return Outside Block). Otherwise, the Loss of Component Cooling AP (AP/*/1700/20) will provide adequate directions should CC not be recovered.
Reactor Coolant System (RCS) Letdown to the Letdown Storage Tank or "A" BHUT	RCS Letdown will remain available (though the ion exchangers will be unavailable). Letdown may be isolated if PZR level can not be maintained and then be reinitiated after the plant is stabilized.	RCS Letdown will be isolated due to *HP-5 (Letdown Isolation) failing closed, the safe condition. Initially after a Reactor trip, letdown is not required. The AP directs Operations to open *HP-24 (HPI BWST SUCTION) to maintain suction to the HPI Pumps. The EOP provides directions if pressurizer level increases to >375".
Reactor Coolant Pump (RCP) Seal Supply and Return	RCP Seal Supply and Return will be maintained.	*HP-31 (RCP Seal Supply) will fail open, the safe condition. The AP directs Operations to manually throttle *HP-31 to control flow. *HP-21 (RCP Seal Return) fails closed, the safe condition. RCPs remain operable, seal integrity is maintained.

Attachment 1
Loss of Instrument Air Scenario
With/Without Auxiliary Instrument Air

Function Supported By AIA	**With AIA**	**Without AIA**
Reactor Coolant System Makeup	*HP-120 (RC Volume Control) remains operable for RCS volume control.	*HP-120 fails closed. The Loss of Normal Makeup AP (AP/*/1700/14) and the EOP provide adequate directions for RCS volume control and maintaining makeup to the RCS.
Emergency Feedwater (EFDW) System Supply to OTSGs	Control for EFDW flow is maintained via the EFDW Control Valves, *FDW-315 and *FDW-316.	*FDW-315 and *FDW-316 have a nitrogen backup. Without nitrogen backup, these valves fail open and the Loss of FDW AP (AP/*/A/1700/19) provides adequate directions to maintain OTSG inventory, controlling these valves manually.
Decay Heat Removal (DHR) via the Turbine Bypass Valves (TBVs)	The TBVs remain available to control DHR.	The TBVs fail closed, the safe condition. The Main Steam Relief Valves will provide overpressure protection to the OTSGs and a DHR path. The EOP provides directions for controlling the DHR via the Atmospheric Dump Valves (ADVs) if required.

The end result with or without AIA available:

- Forced Circulation is maintained,
- Controlled DHR is accomplished,
- RCP seal integrity is maintained,
- Suction source to the HPI pumps is available, and
- RCS inventory is maintained.

The response to a Loss of IA event is similar, with and without AIA available. Without AIA available, procedural guidance is available for alternate means of control and the plant response allows adequate time to perform required actions without adverse affects. With AIA available, operator burden is reduced.