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SUBJECT: Forwards addl info re Generic Ltr 83-37 & NUREG-0737 items, per NRC 871119 request. Tech Specs re instrumentation for detection of inadequate core cooling will be submitted by 880215.

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January 18, 1988

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

Subject: Oconee Nuclear Station
Docket Nos. 50-269, -270, -287
Generic Letter 83-37, NUREG-0737
Additional Information

Dear Sir:

In a November 19, 1987 letter to Duke Power from the NRC, a Technical Evaluation Report (TER) concerning Generic Letter 83-37 and NUREG-0737 was enclosed. This TER, developed by Idaho National Engineering Laboratory, evaluated Oconee Nuclear Station's (ONS) Technical Specification submittals which resulted from the generic letter. Attached is the additional information which was requested in the November letter.

Please note that the technical specifications concerning instrumentation for detection of inadequate core cooling will be submitted by February 15, 1988. Proposed technical specifications for Control Room Habitability requirements were submitted in a letter dated January 6, 1988. Please advise us if there are further questions regarding this matter.

Very truly yours,

Hal B. Tucker

Hal B. Tucker

WHM/1229/sbn

Attachment

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Additional Information For
Generic Letter 83-37 And NUREG-0737 Items

(A) REACTOR COOLANT SYSTEM (RCS) VENTS (II.B.1)

NRC Concerns:

(1) Submit a Technical Specification for LCO 3.1.13.1.a, that requires applicability of the reactor coolant system vents above 200°F.

(2) Submit a Technical Specification for LCO 3.1.13.1.a, that requires at least two valves in series powered from emergency buses and closed for each vent path.

(3) In Specification 3.1.13.1.b, state the requirements for continued operation with an inoperable vent path of: Startup and/or Power Operation may continue provided the inoperable vent path is maintained closed with power removed from the valve actuator of all the valves in the inoperable vent path.

(4) In Specifications 3.1.13.1.b and 3.1.13.1.c, when restoration cannot be made in 30 days, require hot standby within 6 hours and below 200°F within the following 30 hours rather than hot shutdown within the next 12 hours and below 250°F in an additional 24 hours.

(5) Provide the Surveillance Requirements (4.4.11.1, 2., and 3.), as recommended in the Generic Letter.

Duke Power Response:

(1) Duke Power will comply with this request by May 18, 1988. Operability of the reactor coolant system (RCS) vents will be required above 200°F rather than 250°F.

(2) A discussion concerning the RCS vent valves will be provided in the Bases of the technical specifications, which will be submitted by May 18, 1988. The RCS vents have two valves in series which are capable of being powered from emergency buses. The valves are normally closed with power removed to prevent inadvertent opening of the valves.

(3) Technical Specification requirements for continued operation with an inoperable vent path are unnecessary since the discussion of RCS vent valves will be included in the Bases of the technical specifications. Also the suggested wording is not appropriate for Oconee since power is normally removed from the valves due to Oconee's compliance with Appendix R requirements to avoid spurious operation of valves.

(4) The actions to be taken when restoration of an inoperable RCS vent valve cannot be made in 30 days were submitted as a standard Oconee action. The proposed action will meet the generic letter recommendation to have the unit below 200°F within a 36 hour period. The actions to be in hot shutdown within the next 12 hours and below 250°F in an additional 24 hours is consistent with the intent of NUREG-0737 and other Oconee action statements. This allows for a conservative 10% per hour power reduction rather than 20% per hour. A submittal will be provided to change 250°F to 200°F (see response (1)).

(5) The manual and power operated valves which are associated with the RCS vents are included in a number of procedures and testing programs to assure proper performance. The manual isolation valves in each vent path are locked open and verified by procedures on a refueling frequency. This control prevents the need for technical specification requirements.

The power operated valves in the vent path are full stroke tested. These valves are included as part of the Oconee Inservice Testing (IST) Program. This program was developed based on the ASME Boiler and Pressure Vessel Code, Section XI as required in 10 CFR 50.55a. All three units at Oconee have power operated valves and power operated block valves on the RCS Loop A and B High Point Vents, Reactor Vessel Head Vent and the Pressurizer Steam Space Vent (through the PORV). The valves on the Loop A and B High Point vents and the Reactor Vessel Head Vent are RC-155, RC-156, RC-157, RC-158, RC-159, and RC-160, respectively. These valves are full stroke tested on a refueling outage frequency. The valves on the Pressurizer Steam Space Vent are RC-66 (PORV) and RC-4. RC-66 is full stroke tested if the unit shuts down and the valve hasn't been tested in the past three months, otherwise it is tested during refueling outages. RC-4 is tested every three months as long as RC-66 is operable. Based on the testing requirements of the IST program as required by Regulations and current technical specifications, additional technical specification requirements in this area would be redundant and unnecessary.

The last surveillance requirement which was recommended as part of Generic Letter 83-37 concerned verifying flow through the RCS vent system vent paths during cold shutdown or refueling. This cannot be performed at Oconee due to ALARA considerations. All of the RCS vent paths, except that associated with the PORV, discharge directly to the containment floor. This type of contamination is not warranted and would not be in line with Oconee's ALARA program.

(B) NOBLE GAS EFFLUENT MONITORS (II.F.1.1)

NRC Concerns:

(1) Submit a Technical Specification revision for Table 3.5.6.1 that identifies multiple noble gas monitors for several locations, as recommended in the Generic Letter.

(2) Submit a Technical Specification revision for Table 3.5.6.1 or create another table as recommended in the Generic Letter that provides alarm/trip setpoint and measurement range for the noble gas monitors.

(3) Submit a Technical Specification revision for Section 3.5.6.2 for the noble gas monitors in the Action that requires 14 days to submit a Special Report to the Commission rather than 30 days, when the number of operable channels is less than the minimum channels operable requirement.

(4) Submit a Technical Specification revision for Section 3.5.6.2 for the noble gas monitors in the Action for when the alarm/trip setpoint is exceeded, as recommended in the guidance.

(5) Provide a channel check at least once per 12 hours for the noble gas monitors.

Duke Power Response:

(1) Oconee's Noble Gas Effluent Monitor consists of a proportional counter high range monitor (RIA-56) which samples vent stack gases. The design of this monitor was accepted by the NRC in the confirmatory order for NUREG-0737 Items dated March 18, 1983. The list of monitors recommended in Generic Letter 83-37 do not necessitate identification in technical specifications based on the following. The Radwaste Building Exhaust System is already included in Technical Specification Table 3.5.5-2. The Auxiliary Building Exhaust System is discharged through the Unit vent and monitored by RIA-56. The Steam Safety Valve Discharge, Atmospheric Steam Dump Valve Discharge, and Shield Building Exhaust System do not exist at Oconee at this time. The Containment Purge and Exhaust System and the Condenser Exhaust System are monitored by RIA-56. Based on this discussion, the recommended technical specifications do not apply to Oconee's situation.

(2) The Noble Gas Effluent Monitor (RIA-56) is used for post accident situations and dose assessments. The range of the monitor was specified in a response to Regulatory Guide 1.97 which was dated September 28, 1984. The variable was "Common Plant Vent Radioactive Discharge" and the range was specified as 10^{-6} µCi/cc to 10^{4} µCi/cc. The contents of proposed Technical Specification 3.5.6 is consistent with other Oconee technical specifications involving monitors and it addresses the operability of RIA-56. Including the alarm/trip setpoint and range information would be superfluous.

(3) As specified in the proposed Technical Specification 3.5.6.2, when the number of operable channels is less than the minimum channels required, a special report will be submitted to the NRC within 30 days. This requirement is consistent with other technical specification reporting requirements and Licensee Event Report requirements. It has been determined that 30 days is a sufficient amount to time to produce an accurate report and this time limit meets the intent of Generic Letter 83-37 for providing a report in a timely manner. Therefore, no changes will be made regarding this comment.

(4) In the case that the alarm/trip setpoint is exceeded on the Noble Gas Effluent Monitor, the monitor has either malfunctioned or an accident situation exists. If a malfunction has occurred, the specifications address the operability requirements of the monitor. If an accident has occurred, the situation would have been identified and the monitor would function in a post accident capacity which would not affect the operation of the plant. Therefore no Action requirements are necessary in the technical specifications for an exceeded alarm/trip setpoint.

(5) Oconee Technical Specification 1.5.3 defines an Instrument Channel Check. It states that an instrument channel check is a verification of acceptable instrument performance by observation of its behavior and/or state. This verification includes comparison of output and/or state of independent channels measuring the same variable. Since the Noble Gas Effluent Monitor is a single monitor with a single sample point, the channel check requirements are not applicable to Oconee.

(C) CONTAINMENT HIGH-RANGE RADIATION MONITOR (II.F.1.3)

NRC Concerns:

(1) Submit a revision to Table 3.5.6.1, requiring a minimum of two operable channels, as in the guidance.

(2) Submit a revision to Table 3.5.6.1, that specifies alarm/trip setpoint and measurement range for the high-range radiation monitors or create another table, as recommended in the Generic Letter that provides alarm/trip setpoints and measurement range for the high-range radiation monitor.

(3) Submit a revision to specification 3.5.6.1, that specifies a Special Report to the Commission within the next 14 days with one channel inoperable after 7 days.

(4) Specify an Action when the alarm/trip setpoint is exceeded, as in the guidance.

(5) Specify an Action to initiate the preplanned alternate method of monitoring within 72 hours with an inoperable channel(s), as in the guidance.

(6) Specify a Surveillance Requirement for a channel check at least once per 12 hours, as in the guidance.

(7) Specify a Surveillance Requirement for a calibration at least once per 18 months, as in the guidance, rather than at refueling outages.

Duke Power Response:

(1) Oconee has two Containment High Range Radiation monitors. These monitors are used to estimate core damage and perform post accident analyses and dose assessment. In order to utilize a backup logic, which is used in most instrument cases, the minimum operable channels shall remain 1 of 2. This meets the intent of Generic Letter 83-37 and is consistent with other Oconee Technical Specifications. Once the initial difficulties with these monitors were worked out, the failure rate has improved. However, with sporadic failures, reporting is kept to a minimum by utilizing the 1 of 2 backup logic for each unit.

(2) The Containment High Range Radiation Monitors (RIA-57, RIA-58) are used for post accident situations and dose assessment. The range of the monitors was specified in a response to Regulatory Guide 1.97 dated September 28, 1984. The variable was "Containment Area Radiation-High Range" and the range was specified as 1 to 10^7 R/hr. The contents of proposed Technical Specification 3.5.6 is consistent with other Oconee Technical Specifications involving monitors and it addresses the operability of RIA-57 and RIA-58. Including the alarm/trip setpoint and range information would again be superfluous.

(3) As specified in the proposed Technical Specification 3.5.6.2, when the number of operable channels is less than the minimum channels required, a special report will be submitted to the NRC within 30 days. This requirement is consistent with other technical specification reporting requirements and Licensee Event Report requirements. It has been determined that 30 days is a sufficient amount of time to produce an accurate report and this time limit meets the intent of the generic letter recommendations for providing a report in a timely manner. Therefore, no changes will be made regarding this comment.

(4) In the case that the alarm/trip setpoint is exceeded on either Containment High-Range Radiation Monitor, the monitor has either malfunctioned or an accident situation exists. If a malfunction has occurred, the specifications address the operability requirements of the monitor. Any upscale readings on the monitors are investigated and corrected by Instrumentation and Electrical Engineers in a timely fashion. If an accident has occurred, the situation would have been identified and the monitors would function in a post accident capacity which would not affect the operation of the plant. Therefore, no action requirements are necessary in the technical specifications for an exceeded alarm/trip setpoint.

(5) The preplanned alternate method for monitoring during inoperability of both Containment High-Range Radiation Monitors is described in procedures for accident situations. The Bases of Technical Specification 3.5.6 will be revised by May 18, 1988 to include details of the alternate method specifically for RIA-57 and RIA-58.

(6) For the case of the Containment High-Range Radiation monitors, a surveillance requirement for a channel check is meaningless because the monitors are normally off scale-low.

(7) As described in Technical Specification 4.0, the interval between refueling outages at Oconee is defined normally as 18 months and not to exceed 22 months and 15 days. This is the standard format for other technical specifications and it meets the intent of Generic Letter 83-37.

(D) CONTAINMENT PRESSURE MONITOR (II.F.1.4)

NRC Concerns:

(1) Specify an Action for less than the "required number of channels" (two), as in the guidance.

(2) With less than the "minimum channels operable" (one), revise the Action to require restoration in 48 hours or be in at least hot shutdown within the next 12 hours, as in the guidance.

Duke Power Response:

(1 & 2) The NRC concerns related to the Containment Pressure Monitors appear to be beyond the design basis of the system and contrary to the purpose of technical specifications. Oconee has two Containment Pressure Monitors

(PT-230, PT-231). These monitors are to be used in a post accident capacity. As recommended in the generic letter, a unit shutdown due to the inoperability of one or both of these instruments is an extreme and unnecessary action. In order to utilize a backup logic, which is used in most instrument cases, the minimum operable channels shall remain 1 of 2 at all times except for cold shutdown and refueling outages. The actions in the proposed technical specifications are more than sufficient to assure safe operation of Oconee and are consistent with the NRC policy statement for technical specification improvements which states that technical specifications should be limited to addressing design basis events.

(5) CONTAINMENT WATER LEVEL MONITOR (II.F.1.5)

NRC Concerns:

(1) Specify an Action for less than the "required number of channels" (two), for the wide range water level instrument, to restore the inoperable channel(s) in 7 days or be in at least hot shutdown within the next 12 hours, as in the guidance.

(2) Specify an Action for less than the "minimum channels operable" (one), for the wide range water level instrument, to restore the inoperable channel in 48 hours to be in at least hot shutdown within the next 12 hours, as in the guidance.

(3) For the narrow range water level instrument, revise the Action, as in the guidance, to require hot shutdown within the next 12 hours if the allowable restoration period is not met.

(4) Revise the calibration frequency, as in the guidance, to at least once per 18 months rather than at refueling outages.

Duke Power Response:

(1,2&3) Once again, the NRC concerns related to the Containment Water Level Monitors appear to be beyond the design basis of the system and contrary to the purpose of technical specifications as described in the NRC policy statement on technical specification improvements. Oconee has two Wide Range Water Level Monitors (LT-90, LT-91) and two Narrow Range Water Level Monitors (Emergency Sump - LT-3P, LT-112). These monitors are to be used in a post accident capacity. As recommended in the generic letter, a unit shutdown due to the inoperability of these instruments is an extreme and unnecessary action. The case of the Wide Range Monitor is slightly different since its operation enables necessary followup actions in an accident situation. Even then, the shutdown recommendations made in the generic letter are extreme. The proposed specifications are conservative and are consistent with the intent of the generic letter.

(4) As described in Technical Specification 4.0, the interval between refueling outages at Oconee is defined normally as 18 months and not to exceed 22 months and 15 days. This is the standard format for other technical specifications and it meets the intent of Generic Letter 83-37.

(F) CONTAINMENT HYDROGEN MONITOR (II.F.1.6)

NRC Concerns:

(1) Delete the relief for exception to Specification 3.0, as this is not allowed per the guidance.

(2) Revise the Specification, as in the guidance, to require two independent containment hydrogen monitors to be operable rather than just one.

(3) Specify an Action for one inoperable hydrogen monitor, as in the guidance, of restore to operable status within 30 days or be in at least hot standby within the next 6 hours.

(4) Revise the Action for two inoperable hydrogen monitors, as in the guidance, to restore at least one to operable status within 72 hours or be in at least hot standby within the next 6 hours.

(5) Revise the Surveillance Requirements to state, as in the guidance, a channel check at least once per 12 hours rather than monthly, an analog channel operational test at least once per 31 days, a calibration at least once per 92 days on a staggered test basis rather than annually, and specify the hydrogen and nitrogen volume requirements for the calibration tests.

Duke Power Response:

1,2,3&4) The NRC concerns again appear to be beyond the design basis of the Containment Hydrogen Monitor System. As discussed for the Containment Pressure Monitor and the Containment Water Level Monitor, Oconee is attempting to follow the guidance provided in the NRC Policy Statement on technical specification improvements. Oconee has two Containment Hydrogen Monitors (MT-80, MT-81). These monitors are used in a post accident capacity. They would be expected to monitor hydrogen in the containment after an accident. As described in the Oconee FSAR, following a LOCA, the hydrogen buildup in the containment would only be significant after approximately 530 hours. Prior to this the hydrogen recombiner would be operating or purging would have occurred. Shutting down a unit due to the inoperability of these instruments is an extreme and unnecessary action. The proposed specifications are conservative and consistent with the intent of Generic Letter 83-37.

(5) The surveillance requirements for the Containment Hydrogen Monitor will be revised by May 18, 1988. As presently defined in Oconee's Technical Specifications, an instrument channel check is a verification of acceptable instrument performance by observation of its behavior and/or state. This verification includes comparison of output and/or state of independent channels measuring the same variable. Even though there are two Containment Hydrogen Monitors, they are left in standby unless being calibrated, tested or used in an accident situation. Based on this information, a routine channel check would be meaningless and will therefore be "NA" in the surveillance requirements.

The Oconee Technical Specifications define a channel test as the injection of an internal or external test signal into the channel to verify its proper output response; including alarm and/or trip initiating action where applicable. Oconee performs a test on these

monitors by turning them on, injecting a known source of hydrogen and nitrogen (approximately 10% Hydrogen with the balance Nitrogen) and reading the scale. If there is a discrepancy between the source and the reading, the monitor is adjusted for the correct reading. The monitors are then returned to standby. The Surveillance Requirements for the Containment Hydrogen Monitor Test will be revised to "MO".

The Oconee Technical Specifications define a channel calibration as a test, and adjustment (if necessary), to establish that the channel output responds with acceptable range and accuracy to known values of the parameter which the channel measures or an accurate simulation of these values. Calibration shall encompass the entire channel, including equipment actuation, alarm, or trip and shall be deemed to include the channel test. Although the channel test, which was described above, includes similar calibration steps, an annual calibration will be performed. The calibration includes an electronics check and verification of associated setpoints. The calibration is performed on an annual basis which is consistent with surveillance requirements on safety related equipment. Also, because the test which is performed monthly allows for adjustment of the monitors if necessary, the frequency of the calibration will remain "AN".

(G) INSTRUMENTATION FOR DETECTION OF INADEQUATE CORE COOLING (II.F.2)

NRC Concerns:

(1) Duke Power should submit Technical Specifications 90 days after installation of the inventory tracking system for all three Oconee units, for the core exit thermocouples and reactor vessel level monitoring system, as previously committed.

(2) Submit a revised specification for the subcooling margin monitors to state applicability, as in the guidance, for conditions characterized by the Standard Technical Specification "Hot Standby" (Mode 3) of K_{eff} < 0.99, 0% rated power, and $\geq$ 300°F. It is recommended that the specifications for the subcooled margin monitors be located in proposed Table 3.5.6.1, Accident Monitoring Instrumentation, as this would locate it with other accident monitoring instrumentation, as is done in the guidance.

(3) Submit a revised Surveillance Requirement that provides a channel check monthly and a calibration at least once per 18 months for the subcooled margin monitors.

Duke Power Response:

The above NRC concerns for Instrumentation for Detection of Inadequate Core Cooling will be addressed in a proposed technical specification submittal by February 15, 1988.

(H) CONTROL ROOM HABITABILITY (III.D.3.4)

NRC Concerns:

Duke Power should submit Technical Specifications for control room habitability, as in the guidance. As these specifications have been

previously committed to by the Licensee for May 15, 1986, the Licensee should expeditiously submit them or justify a further delay.

Duke Power Response:

Proposed technical specifications for Control Room Habitability were submitted to the NRC on January 6, 1988.