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SUBJECT: Provides proposed resolution of Generic Ltr 89-19 Tech Specs issues & Unresolved Safety Issue A-47.

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March 19, 1991

U. S. Nuclear Regulatory Commission
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Washington, DC 20555

Subject: Oconee Nuclear Station
Docket Nos. 50-269, -270, -287
Generic Letter 89-19 Technical Specifications

Gentlemen:

By letter dated March 19, 1990 Duke provided the response to Generic Letter (GL) 89-19, Request for Action Related to Resolution of Unresolved Safety Issue A-47 "Safety Implication of Control Systems in LWR Nuclear Power Plants." GL 89-19 recommended that Oconee Nuclear Station provide: 1) automatic steam generator overfill protection to mitigate main feedwater overfeed events; and 2) automatic protection to prevent steam generator dryout. In order to bring USI A-47 to a timely closure, enhancements to the design of steam generator overfill and dryout protection were proposed within the March 19, 1990 response.

GL 89-19 also recommends that "as part of future upgrades to Technical Specifications, licensees should consider including appropriate limiting conditions of operation and surveillance requirements in future Technical Specification improvements." As detailed in Attachment 1, current Technical Specifications for steam generator dryout protection are technically adequate (clarification to existing requirements are in preparation in response to NRC Inspector Followup Item 50-269,-270,-287/90-30-02). My staff has conservatively evaluated the function of steam generator overfill protection and determined that it meets the criteria of the NRC Interim Policy Statement on Technical Specification Improvements (52FR3788) for inclusion in the Technical Specifications. As such, changes to Technical Specifications for steam generator overfill protection will be proposed prior to startup from the Oconee Unit 1 end of cycle 13 refueling outage currently scheduled for August 1991. This schedule is consistent with the implementation of modifications to steam generator overfill protection proposed within the March 19, 1990 response. In addition, in order to support prompt closure of GL 89-19 and USI A-47, Selected Licensee Commitments (SLC) will be included in FSAR Chapter 16 which describe limiting conditions for operation, actions, and surveillances for EFW actuation on low steam generator level. These SLCs will become effective following implementation and testing of the modifications proposed in response to GL 89-19.

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The proposed resolution of GL 89-19 Technical Specification issues provided herein are to facilitate timely resolution of USI A-47. In the event this proposed resolution is not found acceptable by the NRC, I reserve the right to revisit the technical and regulatory basis for GL 89-19.

Very Truly Yours,



M. S. Tuckman

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ATTACHMENT 1
GENERIC LETTER 89-19
EVALUATION OF TECHNICAL SPECIFICATION REQUIREMENTS
FOR EMERGENCY FEEDWATER ACTUATION ON LOW OTSG LEVEL

Currently, Oconee Technical Specifications include limiting conditions for operation (LCO) of the Emergency Feedwater (EFW) System including manual actuation circuitry, and automatic actuation circuitry associated with low Main Feedwater (FDW) pump discharge pressure and low FDW pump hydraulic oil pressure. The existing design as well as proposed enhancements to dryout protection are described in detail within the March 19, 1990 response to GL 89-19.

GL 89-19 recommends that "as part of future upgrades to Technical Specifications, licensees should consider including appropriate limiting conditions of operation and surveillance requirements in future Technical Specification improvements." Enhancements to steam generator dryout protection were proposed within the March 19, 1990 Oconee response to GL 89-19 in order to bring USI A-47 to a timely closure. The current design of the steam generator dryout protection systems as well as proposed modifications have been evaluated against the Oconee design basis as established in the FSAR as well as Oconee specific risk assessments. As detailed below, the criteria of the NRC Interim Policy Statement on Technical Specification Improvements (52FR3788) were then applied to the results of this evaluation.

The Policy Statement delineates three criteria which establish which constraints on design and operation of nuclear power plants belong in Technical Specifications in accordance with 10CFR50.36. Since steam generator dryout is not used to detect a significant abnormal degradation of the reactor coolant pressure boundary or is not a process variable, criteria 1 and 2 do not apply to this evaluation. Therefore the evaluation is as follows:

Criterion 3: A structure, system, or component that is part of the primary success path and which functions or actuates to mitigate a DBA or Transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.

Evaluation of Criterion 3: It must be emphasized that the basis for GL 89-19 is USI A-47 "Safety Implication of Control Systems." The results of USI A-47 indicated that protection should be provided for certain control system failures. With regard to steam generator dryout protection two overheating events were described in Table 3.3 of NUREG 1217, "Potentially significant failure scenarios in a representative B&W PWR." The failure mechanisms of concern were loss of "auto" or "hand" power to the Integrated

Control System (ICS). These events are no longer applicable to Oconee since a modification has been completed which produces an automatic trip of the main feedwater pumps on a loss of either "hand" or "auto" power to the ICS. Further, NUREG 1218 Section 4.3 (4) (c) identifies this design as acceptable.

The most limiting transient for the EFW system is the Loss of Main Feedwater (LMFW). As such the LMFW constitutes the design basis transient for application to Criterion 3 of the Interim Policy Statement. Oconee FSAR Section 10.4.7 evaluates this transient. The primary success path to mitigate the LOFW includes actuation of the EFW system. The FSAR evaluation credits automatic actuation of EFW on loss of both main feedwater pumps or low feedwater header pressure. In addition, for plant conditions in which automatic actuation circuitry must be disabled (ie. turbine header pressure less than 800 psig) adequate time is available for manual initiation of EFW. Actuation of EFW on low steam generator level will not be credited for any DBA or transient since the acceptance criteria for all DBAs and transients are met with credit for the presently installed EFW manual and automatic actuation circuitry. Limiting conditions for operation, actions, and surveillance requirements are presently included in Technical Specifications 3.4 and Table 4.1-1 Item 53 respectively for the currently installed EFW actuation circuitry. Therefore current Technical Specification requirements meet the guidance of GL 89-19 for steam generator dryout protection.

Risk significance provisions: In addition to the three criteria, the Interim Policy Statement also recommends that constraints of prime importance in limiting the likelihood or severity of the accident sequences that are found to dominate risk be included within the Technical Specifications.

Evaluation of risk significance provisions - Steam Generator Dryout Protection: Due to the capability of the EFW system to actuate automatically on loss of both main feedwater pumps and low feedwater header pressure (or manually when automatic actuation must be bypassed), EFW actuation on low steam generator level is not a constraint of prime importance in limiting the likelihood or severity of accident sequences that are found to dominate risk.

It is concluded from the above evaluation of the criteria in the NRC Interim Policy Statement that changes to Oconee Technical Specifications for EFW actuation on low steam generator level are

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GL 89-19 Technical Specifications

not appropriate. However, in order to support prompt closure of GL 89-19 and USI A-47 Selected Licensee Commitments (SLC) will be established in FSAR Chapter 16 which describe limiting conditions for operation, actions, and surveillances for steam generator EFW actuation on low steam generator level. These SLCs will be implemented following implementation and testing of the modifications proposed in response to GL 89-19.