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AUTH.NAME AUTHOR AFFILIATION
HAMPTON,J.W. Duke Power Co.
RECIP.NAME RECIPIENT AFFILIATION
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SUBJECT: Responds to NRC GL-89-19, "Requests for Action Re USI A-47 'Safety Implication of Control Sys in LWR Nuclear Power Plants'." Determines further evaluation concludes TS requirements for SG overfill protection inappropriate.

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Duke Power Company
Oconee Nuclear Site
P.O. Box 1439
Seneca, SC 29679

J. W. HAMPTON
Vice President
(803)885-3499 Office
(803)885-3564 Fax

DUKE POWER

July 28, 1993

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

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

By letter dated June 14, 1993, pursuant to 10CFR50.54(f) the NRC requested that a 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" be provided regarding Technical Specifications and plant procedures for steam generator overfill protection.

GL 89-19 recommended 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." By letter dated March 19, 1991, the response regarding steam generator overfill protection and dryout protection Technical Specifications was provided, including a commitment to provide proposed changes to Technical Specifications for overfill protection. By letter dated September 24, 1991, Technical Specification issues associated with steam generator overfill protection were deferred pending generic resolution of the issue for B&W plants. Subsequently, it was determined that GL 89-19 should be handled on a plant specific basis.

As detailed in the Attachment to this letter, further evaluation has concluded that Technical Specification requirements for steam generator overfill protection are inappropriate. However, in order to support closure of GL 89-19 and USI A-47, a Selected Licensee Commitment (SLC) will be included in FSAR Chapter 16 which describe limiting conditions for operation, actions, and surveillances for steam generator overfill protection. This SLC will become effective by October 1, 1993.

The proposed resolution of GL 89-19 Technical Specification issues provided herein is 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

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basis for GL 89-19.

Very Truly Yours,

J. W. Hampton

xc: L. A. Wiens, Project Manager
ONRR

S. D. Ebneter, Regional Administrator
Region II

P. E. Harmon, Senior Resident Inspector
Oconee Nuclear Station

ATTACHMENT
GENERIC LETTER 89-19
EVALUATION OF TECHNICAL SPECIFICATION REQUIREMENTS
FOR STEAM GENERATOR OVERFILL PROTECTION

GL 89-19 recommended 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 overfill protection were proposed within the March 19, 1990 Oconee Nuclear Station response to GL 89-19 in order to bring USI A-47 to a timely closure. The steam generator overfill protection system has 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 overfill protection is not used to detect a significant abnormal degradation of the reactor coolant pressure boundary and is not a process variable, Criteria 1 and 2 do not apply to this evaluation. Criterion 3 and the risk significance provisions are evaluated below:

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: Steam generator overfill protection is not credited in any design basis accident evaluated in the Oconee FSAR. Steam generator overfill protection is credited in certain main feedwater overfill events in the Oconee Pressurized Thermal Shock (PTS) evaluations: however, PTS is not considered to be a design basis accident. Therefore, steam generator overfill protection is not part of the primary success path nor does it function to mitigate a DBA or transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.

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 overfill protection (e.g., the high steam generator level feedwater pump trip) plays an important role in the mitigation of Main Feedwater (MFW) overfill events that could lead to PTS. Studies have been performed by Duke, the B&W Owners Group, and Oak ridge national Laboratory (ORNL) to assess the probability of vessel failure due to PTS events. The high level trip is credited in many of these studies to mitigate overfill transients; thus, the PTS results are highly dependent on the functioning of the high level trip. The estimated annual frequency of vessel failure used in the Oconee PRA is 8.0E-07 and is based on the results of the ORNL analysis which is documented in NUREG/CR-3770. The PTS sequences which lead to core melt contribute less than 1% to the overall calculated core melt frequency of 1.1E-04 per year (this value includes approximately 2E-5 for internal initiators, and 9E-5 for external initiators). Therefore, PTS events are not considered to be an accident sequence which is found to dominate risk.

Plant data has shown that the high level trip is highly reliable, and the risk associated with the low probability of failure of the trip is acceptable. Any additional increase in reliability that would be gained from the inclusion of the high level trip in the Technical Specifications would have a negligible impact on the core melt frequency. Thus a steam generator overfill protection Technical Specification 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 inclusion of steam generator overfill protection in the Technical Specifications is not required. Regardless, in order to support closure of GL 89-19 and USI A-47, a Selected Licensee Commitment will be included in FSAR Chapter 16 which describe limiting conditions for operation, actions, and surveillances for steam generator overfill protection.