WOLF CREEK
NUCLEAR OPERATING CORPORATION

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ET 98-0089

U. S. Nuclear Regulatory Commission
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Reference: 1) Letter ET 97-0075, dated September 2, 1997, from R. A. Muench, WCNOC to NRC
2) Letter WM 98-001, dated January 15, 1998, from O. L. Maynard, WCNOC to NRC

Subject: Docket No. 50-482: Revision to Technical Specification Bases 3/4.7.1.2, Auxiliary Feedwater System

Gentlemen:

This letter transmits a change to the Wolf Creek Generating Station (WCGS) Technical Specification Bases. Attachment I provides background information and justification for the change. Attachment II provides a markup of the Bases page to be revised.

Reference 1 transmitted a license amendment request to revise Technical Specification 3.7.1.2, Auxiliary Feedwater System, to add requirements for the Essential Service Water (ESW) flowpaths to the turbine-driven auxiliary feedwater pumps. Reference 2 transmitted a response to a request for additional information. Based on discussions with the NRC staff and further review of the proposed license amendment request, Wolf Creek Nuclear Operating Corporation (WCNOC) is withdrawing the proposed revision to Technical Specification 3.7.1.2. based on the attached Bases change.

A copy of this Bases change, with attachments, is being provided to the designated Kansas State Official.

If you have any questions concerning this matter, please contact me at (316) 364-4034, or Mr. Michael J. Angus at 316-364-4077.

Very truly yours,

Richard A. Muench

A001

RAM/rlr

Attachments

cc: V. L. Cooper (KDHE), w/a
W. D. Johnson (NRC), w/a
E. W. Merschoff (NRC), w/a
B. A. Smalldridge (NRC), w/a
K. M. Thomas (NRC), w/a

ATTACHMENT I

BACKGROUND AND JUSTIFICATION

Background and Justification

Proposed Bases Change

This change adds additional wording to the "Bases" section for Technical Specifications Section 3/4.7.1.2, Auxiliary Feedwater System (AFW). The added wording clarifies the specific requirements for operability of the suction and discharge flow paths that have been determined to be appropriate. This is not a change in current practices or surveillance requirements. It consists of added information to provide better clarification and ensure consistent application of LCO actions when various equipment is taken out of service for maintenance.

The following is added to Bases Section 3/4.7.1.2, Auxiliary Feedwater System

"The Auxiliary Feedwater System (AFW) is configured into three independent AFW pumps and associated flow paths. An AFW pump and associated discharge flow path are considered OPERABLE when the components and flow paths required to provide redundant AFW flow to the steam generators are OPERABLE. This requires that the two motor-driven AFW (MDAFW) pumps be OPERABLE in two diverse paths, each capable of automatically transferring the suction from the condensate storage tank to an Essential Service Water (ESW) supply and supplying AFW to two steam generators. This requires the turbine-driven AFW (TDAFW) pump to be OPERABLE with redundant steam supplies from each of two main steam lines upstream of the MSIVs, and shall be capable of automatically transferring the suction from the condensate storage tank to an ESW supply and supplying AFW to the steam generators. The piping, valves, instrumentation, and controls that are in the required flow path, and are required for the train to perform its specified function(s), are also required to be OPERABLE. Because each ESW supply flow path to the TDAFW pump provides 100% capacity, the "Required ESW Supply" to the TDAFW pump is provided by a single, OPERABLE, supply flow path (the suction flow path begins at the point where the ESW piping branches into two lines, one supplying the MDAFW pump and one supplying the TDAFW pump, and ends at the suction of the TDAFW pump) and associated OPERABLE suction isolation valve."

Background

The function of the AFW system is to supply a reliable source of water to the steam generators when the main feedwater system is not available. The AFW system provides sufficient feedwater to the steam generators following a Design Basis Accident (DBA) to remove decay heat and prevent damage to the reactor core. The AFW system is made up of three pumps, two MDAFW and one TDAFW pump. Each of the MDAFW pumps has adequate capacity to supply 100 percent of the required feedwater flow to remove decay heat. The one TDAFW pump has twice the capacity of a MDAFW pump. The flow is sufficient to cool the Reactor Coolant System (RCS) down at a rate of 50°F per hour to 350°F following a reactor trip from full power. Safety analysis assumes the cooldown to 350°F can be accomplished within four hours after the reactor shutdown. Following all Updated Safety Analysis Report (USAR) Chapter 15 design basis accidents at least two AFW pumps are available, typically one MDAFW pump and the TDAFW pump.

In addition to the requirements for DBA, the TDAFW pump must also be capable of functioning for four hours following a station blackout (SBO). During a SBO the TDAFW pump is the only means to remove decay heat from the RCS using auxiliary feedwater.

The Technical Specifications Bases for 3/4.7.1.2 discusses testing requirements to verify that the AFW system will provide the proper flow at the appropriate discharge pressure to ensure decay heat is removed and the RCS temperature is reduced to less than 350°F so the RHR system may be placed into operation. The Bases do not discuss the requirements for suction and discharge flow paths. Since the backup suction supply for the TDAFW pump consists of two redundant 100% capacity supplies from each ESW pump only one supply is required to maintain operability of the TDAFW pump. The lack of bases for the required operable flow path equipment has led to confusion when dete_mining OPERABILITY of the AFW system. The change will add additional information that supports the design basis of the AFW system to ensure consistent and accurate identification of required equipment.

Justification

This wording change affects the Bases for Technical Specification 3/4.7.1.2 by adding additional clarification for OPERABILITY of required flow paths. This will provide additional information for evaluating the ability of the equipment to perform its design basis functions. This will eliminate some of the time the TDAFW pump is declared inoperable due to having only an individual component inoperable, (e.g., the TDAFW pump is OPERABLE during activities that may require isolation of one of the ESW suction supply paths to the TDAFW pump). This is consistent with Technical Specification surveillance requirements of 4.7.1.2.1 and also meets the Technical Specification definition of OPERABLE/OPERABILITY, and NRC Generic Letter 91-18: "A system, subsystem, train, component or device shall be OPERABLE or have OPERABILITY when it is capable of performing its specified function(s), and when all necessary attendant instrumentation, controls, electrical power, cooling or seal water, lubrication or other auxiliary equipment that are required for the system, subsystem, train, component, or device to perform its function(s) are also capable of performing their related support function(s)." Having one ESW supply to the TDAFW pump ensures the functionality of the TDAFW pump.

Application of this change to the WCGS Probabilistic Safety Assessment (PSA) model will not result in an increase in overall plant Core Damage Frequency. The general design descriptions for the Auxiliary Feedwater (AFW) System, and specifically for the TDAFW pump train, are consistent with the logic and assumptions for the AFW system logic model in the WCGS PSA. The AFW system logic model assumes that either supply source from the ESW system would be adequate for successful operation of the TDAFW pump train. Likewise, the AFW system logic model assumes that either steam supply source to the TDAFW pump turbine driver would be adequate for successful TDAFW pump operation.

In light of the above statements, it is noted that the test/maintenance unavailability value utilized in the AFW system logic model for the TDAFW pump train is applied at the train level in a generally consistent manner with existing practices. The TDAFW pump train test/maintenance unavailability value is developed based on the plant history for unavailability of this train. If the entire TDAFW pump train was considered unavailable due to test/maintenance activities associated with one of the steam supply lines to the TDAFW pump turbine driver, or test/maintenance activities associated with one of the supply lines from the ESW system, then that unavailability was included in the TDAFW pump train unavailability value used in the AFW system logic model for the WCGS PSA. A notable exception to this was that if an AFW system train was considered unavailable due solely to unavailability of an associated ESW train, then that period of declared unavailability was not included in the AFW system train test/maintenance unavailability value used in the PSA model. For example, if the TDAFW pump train was considered unavailable due to test/maintenance activities associated with the ESW Train A

supply isolation valve ALHV0032, then that period of unavailability was included in the TDAFW pump train test/maintenance unavailability value used in the P&A model. If however, the TDAFW pump train was considered unavailable due to unavailability of ESW Train A itself, then that period of unavailability was not included in the TDAFW pump train unavailability value.

ATTACHMENT II

BASES MARKUP PAGE