

Docket Number 50-346
License Number NPF-3
Serial Number 2213
Enclosure
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APPLICATION FOR AMENDMENT
TO
FACILITY OPERATING LICENSE NUMBER NPF-3
DAVIS-BESSE NUCLEAR POWER STATION
UNIT NUMBER 1

Attached are the requested changes to the Davis-Besse Nuclear Power Station, Unit Number 1 Facility Operating License Number NPF-3. Also included is the Safety Assessment and Significant Hazards Consideration.

The proposed changes (submitted under cover letter Serial Number 2213) concern:

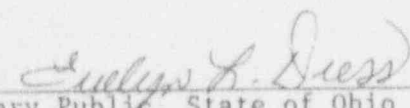
Appendix A, Technical Specification Section 3/4.7.1.2 - Auxiliary Feedwater System, and its associated Bases.

Appendix A, Technical Specification Section 3/4.7.1.7 - Motor Driven Feedwater Pump System, and its associated Bases.

By: 

D. C. Shelton, Senior Vice President - Nuclear

Sworn to and subscribed before me this 5th day of April, 1994.


Notary Public, State of Ohio

EVELYN L. DRESS
NOTARY PUBLIC, STATE OF OHIO
My Commission Expires July 23, 1994

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The following information is provided to support issuance of the requested changes to the Davis-Besse Nuclear Power Station, Unit Number 1 Operating License Number NPF-3, Appendix A, Technical Specifications. The changes involve Technical Specifications 3/4.7.1.2 - Auxiliary Feedwater System, 3/4.7.1.7 - Motor Driven Feedwater Pump System, and their associated Bases.

A. Time Required to Implement: This change is to be implemented within 90 days after the NRC issuance of the License Amendment.

B. Reason for Change (License Amendment Request Number 93-0012):

This application proposes changes to the TS that clarify the requirements for operation of the Auxiliary Feedwater System and Motor Driven Feedwater Pump System in conformance with the DBNPS design. Changes are also proposed to extend the surveillance intervals for testing the steam turbine driven auxiliary feedwater pumps and the electric motor driven feedwater pump from monthly to quarterly. These proposed changes are line item improvements recommended by the NRC Technical Specification Improvement Program (TSIP) and are in conformance with Generic Letter 93-05, Line-Item Technical Specifications Improvements to Reduce Surveillance Requirements for Testing During Power Operation.

Changes are also proposed to modify requirements regarding the stationing of an individual locally at re-aligned Auxiliary Feedwater System and Motor Driven Feedwater Pump System valves during surveillance testing. These proposed changes reflect the installation of the Motor Driven Feedwater Pump.

A proposed change to Bases Section 3/4.7.1.2 will relocate the specific total feedwater flow and pressure parameters from the present Technical Specification Bases to the Updated Safety Analysis Report. This proposed change is administrative and in conformance with NRC NUREG-1430, Improved Standard Technical Specifications - Babcock and Wilcox Plants.

C. Safety Assessment and Significant Hazards Consideration: See Attachment.

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SAFETY ASSESSMENT AND SIGNIFICANT
HAZARDS CONSIDERATION
FOR
LICENSE AMENDMENT REQUEST NO. 93-0012

TITLE:

Proposed Modification to the Davis-Besse Nuclear Power Station (DBNPS) Operating License NPF-3, Appendix A Technical Specifications to Revise Technical Specifications 3/4.7.1.2 - Auxiliary Feedwater System, and 3/4.7.1.7 - Motor Driven Feedwater Pump System.

DESCRIPTION:

The purpose of the proposed changes is to modify Davis-Besse Nuclear Power Station (DBNPS) Operating License NPF-3, Appendix A Technical Specifications 3/4.7.1.2 - Auxiliary Feedwater System, 3/4.7.1.7 - Motor Driven Feedwater System, and their associated Bases.

The proposed changes will revise Auxiliary Feedwater System Limiting Condition for Operation (LCO) 3.7.1.2 to state:

"Two trains of auxiliary feedwater, each consisting of an auxiliary feedwater pump and associated flow path to both steam generators, shall be OPERABLE."

This will ensure that two trains of auxiliary feedwater are operable to each steam generator during the applicable modes of plant operation. This proposed change in wording is a clarification of the currently existing requirements for the Auxiliary Feedwater System at the DBNPS to clearly include the crossover auxiliary feedwater lines from each auxiliary feedwater pump to the opposite train's steam generator.

Action statement a. is revised to state:

"a. With one train of auxiliary feedwater inoperable to either steam generator, restore the inoperable train to OPERABLE status within 72 hours or be in HOT SHUTDOWN within the next 12 hours."

This Action requirement is the same as the intent of the present requirement but it has been re-worded for clarification purposes.

A new Action statement c. is proposed that states:

"With steam generator inlet valves AF 599 or AF 608 closed, re-open the closed valve AF 599 or AF 608 within one hour or be in HOT STANDBY within the next 6 hours and HOT SHUTDOWN within the following 6 hours."

Closure of valves AF 599 or AF 608 will render both trains of the Auxiliary Feedwater System and the Motor Driven Feedwater Pump System inoperable. This is because closure of these valves would result in a complete loss of auxiliary feedwater to the steam generators for certain postulated feedwater line and steam line breaks.

The proposed change to the time interval for Surveillance Requirement 4.7.1.2.1.a will require testing of the steam turbine driven auxiliary feedwater pumps every 92 days on a Staggered Test Basis rather than on a 31 day frequency. This proposed change is in conformance with the NRC's recommendations of Generic Letter 93-05, "Line-Item Technical Specification Improvements to Reduce Surveillance Requirements for Testing During Power Operation", Enclosure 1, Section 9.1, "Auxiliary Feedwater Pump and System Testing" (Toledo Edison Log No. 407, dated September 27, 1993).

A new Surveillance Requirement 4.7.1.2.1.b is proposed that states:

"At least once per 31 days on a STAGGERED TEST BASIS by:..."

This is the existing requirement of 31 day surveillances for the valve line-ups restated since it is the intention of Generic Letter 93-05 to extend the surveillance interval to 92 days only for the auxiliary feedwater pumps.

The remaining surveillance requirements are renumbered to accommodate the insertion of the new Surveillance Requirement 4.7.1.2.1.b.

The renumbered Surveillance Requirements 4.7.1.2.1.c., 4.7.1.2.1.f., and 4.7.1.2.1.g. are revised as shown in the attached marked up Technical Specifications to provide additional clarity. For example, in Surveillance Requirement 4.7.1.2.1.c, "an auxiliary feedwater actuation test signal" has been revised to "a Steam and Feedwater Rupture Control System actuation test signal," which is the specific test signal involved. These surveillance requirements are consistent with the revised LCO.

The existing footnote to Surveillance Requirement 4.7.1.2.1 requires that:

"When conducting tests of the Auxiliary Feedwater System in MODES 1, 2, and 3 which require local manual realignment of valves that make the system inoperable, a dedicated

individual shall be stationed at the valves (in communication with the control room) able to restore the valves to normal system OPERABLE status."

This requirement was added to the surveillance requirements by License Amendment 96 as a result of an NRC recommendation to station an operator locally able to manually realign valves which had been repositioned to conduct Auxiliary Feedwater System periodic tests. This recommendation was contained in the NRC's Auxiliary Feedwater System Reliability Analysis Evaluation in its letter of April 2, 1981 (Toledo Edison Log No 687). This evaluation concerned TMI Task Action Plan Item II.E.1.1, Auxiliary Feedwater System Evaluation. The NRC stated in its evaluation:

"The Davis-Besse Plant requires local manual realignment of valves to conduct periodic tests on the AFW System Train and has only one remaining AFW train available for operation, therefore, the licensee should propose Technical Specifications to provide that a dedicated individual who is in communication with the control room be stationed at the manual valves. Upon instruction from the control room, this operator would re-align the valves in the AFW system from the test mode to its operational alignment."

The NRC's Safety Evaluation Report "Implementation of Recommendations For Auxiliary Feedwater Systems" enclosed in its letter of February 21, 1984 (Toledo Edison Log No 1455), contained the following:

"Recommendation 4 states in part: Licensees with plants which require local manual realignment of valves to conduct periodic tests on an AFW system train which have only one remaining AFW train available for operation should propose Technical Specifications to provide that a dedicated individual who is in communication with the control room be stationed at the manual valves. Upon instruction from the control room, this operator would align the valves in the AFW system from the test mode to its operational alignment."

However, subsequent to the above NRC recommendations, Toledo Edison added the Motor Driven Feedwater Pump System. Since the second steam-driven auxiliary feedwater pump and the Motor Driven Feedwater Pump (and their associated flow paths to each steam generator) will likely be operable when one auxiliary feedwater pump is temporarily realigned for surveillance testing purposes, two means of providing auxiliary feedwater flow to the steam generators should remain. To ensure that the Motor Driven Feedwater System of Technical Specification 3.7.1.7 is operable during the testing of the Auxiliary Feedwater System (in lieu of stationing a dedicated individual at the

realigned valves), a new footnote to Surveillance Requirements 4.7.1.2.1.a and 4.7.1.2.1.f.2 is proposed that states:

"When conducting tests of an auxiliary feedwater train in MODES 1, 2, and 3 which require local manual realignment of valves that make the system inoperable, the Motor Driven Feedwater Pump and its associated flow paths shall be OPERABLE per Specification 3.7.1.7 during the performance of this surveillance. If the Motor Driven Feedwater Pump or an associated flow path is inoperable, a dedicated individual shall be stationed at the realigned auxiliary feedwater train's valves (in communication with the control room) able to restore the valves to normal system OPERABLE status.

This will ensure that if a dedicated individual is not stationed at the realigned valves, then two means of providing auxiliary feedwater flow to the steam generators will remain during the surveillance testing of one auxiliary feedwater pump and its associated flow paths.

A change to Bases Section 3/4.7.1.2 is proposed that states:

"Each steam driven auxiliary feedwater pump is capable of delivering the required feedwater flow at the full open pressure of the Main Steam Safety Valves as assumed in the Updated Safety Analysis Report."

This change is administrative in that, consistent with NRC NUREG-1430, Improved Standard Technical Specifications - Babcock and Wilcox Plants, it will relocate the specific total feedwater flow and pressure parameters from the present Technical Specification Bases to the Updated Safety Analysis Report.

It is also proposed to add the following to Bases Section 3/4.7.1.2:

"Closure of valves AF 599 and AF 608 will render both trains of the Auxiliary Feedwater System and the Motor Driven Feedwater Pump System inoperable. This is because closure of these valves would result in a complete loss of auxiliary feedwater to the steam generators for certain postulated feedwater line and steam line breaks."

This proposed Bases addition provides the basis for the proposed revised LCO 3.7.1.2 and the proposed Action statement c.

The proposed changes would also revise the Motor Driven Feedwater Pump System LCO 3.7.1.7 to state:

"The Motor Driven Feedwater Pump and associated flow paths to the Auxiliary Feedwater System shall be OPERABLE."

This proposed change in wording (making "path" plural) is a clarification of the currently existing requirements for the Motor Driven Feedwater Pump System.

The Action statement to LCO 3.7.1.7 is proposed to state:

"With the Motor Driven Feedwater Pump or its associated flow paths to the Auxiliary Feedwater System inoperable, restore to OPERABLE status within 72 hours or be in HOT SHUTDOWN within the next 12 hours."

This change (making "path" plural) is proposed as a clarification of the currently existing requirements for the Motor Driven Feedwater System.

The proposed change to the time interval for Surveillance Requirement 4.7.1.7.a will require testing of the Motor Driven Feedwater Pump every 92 days rather than on a 31 day frequency which is similar to that also recommended by the NRC in Generic Letter 93-05.

A new Surveillance Requirement 4.7.1.7.b is proposed that states:

"At least once per 31 days by..."

This is the existing requirement of 31 day surveillances for the valve line-ups restated since it is the intention of Generic Letter 93-05 to extend the surveillance interval to 92 days only for the Motor Driven Feedwater Pump.

The remaining surveillance requirements are renumbered to accommodate the insertion of the new Surveillance Requirement 4.7.1.7.b.

The renumbered Surveillance Requirements 4.7.1.7.b, 4.7.1.7.c, 4.7.1.7.d, 4.7.1.7.e, and 4.7.1.7.f are revised as shown in the attachment to provide additional clarity. The surveillance requirements are consistent with the revised LCO.

The existing asterisked "*" footnote to Surveillance Requirements 4.7.1.7.a and renumbered 4.7.1.7.c requires:

"When conducting tests of the Motor Driven Feedwater Pump System in MODE 1 greater than 40% RATED THERMAL POWER which require local manual realignment of valves that make the system inoperable, a dedicated individual shall be stationed at the valves (in communication with the control room) able to restore the valves to normal system OPERABLE status."

This footnote is proposed to be replaced because, like the similar footnote in Auxiliary Feedwater System Surveillance Requirement 4.7.1.2.1, it was actually based upon having only two steam-driven turbine auxiliary feedwater pumps and no electric motor driven feedwater pump. Since the two auxiliary feedwater pumps and their associated flow paths to each steam generator will likely be operable when the Motor Driven Feedwater Pump System is temporarily realigned for surveillance testing purposes, two means of providing auxiliary feedwater flow to the steam generators should remain. To ensure that the two auxiliary feedwater trains of Technical Specification 3.7.1.2 are operable (in lieu of stationing a dedicated individual at the realigned valves) during the testing of the Motor Driven Feedwater System, a new footnote to Surveillance Requirement 4.7.1.7.a and renumbered 4.7.1.7.c.2 is proposed that states:

"When conducting tests of the Motor Driven Feedwater Pump System in MODE 1 greater than 40% RATED THERMAL POWER which require local manual realignment of valves that make the system inoperable, both auxiliary feedwater pumps and their associated flow paths shall be OPERABLE per Specification 3.7.1.2 during the performance of this surveillance. If one auxiliary feedwater pump or flow path is inoperable, a dedicated individual shall be stationed at the realigned Motor Driven Feedwater Pump System's valves (in communication with the control room) able to restore the valves to normal system OPERABLE status."

It is also proposed to add the following to Bases Section 3/4.7.1.7:

"The Motor Driven Feedwater Pump System must be capable of providing feedwater flow to each steam generator in order to be OPERABLE."

This proposed Bases addition provides the basis for the proposed revised LCO 3.7.1.7.

SYSTEMS, COMPONENTS, AND ACTIVITIES AFFECTED:

Auxiliary Feedwater System, Motor Driven Feedwater System

SAFETY FUNCTIONS OF THE AFFECTED SYSTEMS, COMPONENTS, AND ACTIVITIES:

The Auxiliary Feedwater System is described in the DBNPS Updated Safety Analysis Report (USAR) Section 9.2.7, Auxiliary Feedwater System. The Auxiliary Feedwater System is designed to provide feedwater to the steam generators when the steam turbine-driven main feedwater pumps are not available or following a loss of electric power. During a loss of electric power when the reactor coolant pumps are unavailable, the Auxiliary Feedwater System is used to promote natural circulation in

the reactor coolant system. In a small break Loss of Coolant Accident where the break size is too small to reduce the RCS pressure below the shutoff head of the high head safety injection pumps, the Auxiliary Feedwater System is used to cooldown the primary system and thus reduce the pressure to allow high head safety injection.

The Auxiliary Feedwater System is also designed to mitigate steam line and feedwater line breaks as described in USAR Sections 15.2.8, Loss of Normal Feedwater, and 15.4.4, Steam Line Break. All components and piping in the system are designed to Class I requirement, except the condensate storage tank supply sources, and are tornado protected.

The function of the Motor Driven Feedwater System is to cool the Reactor Coolant System down from the normal operating conditions in the event of the total loss of Main Feedwater and Auxiliary Feedwater Pumps.

EFFECTS ON SAFETY:

The proposed changes to the TS 3/4.7.1.2 LCO are acceptable because the revised LCO is a rewording of the current LCO in order to provide additional clarity and does not change the intent of the requirement. The LCO as reworded, will address both the loss of normal feedwater and the steam line rupture events. Rewording the LCO for additional clarity has no adverse effect on safety.

The proposed revision to Action a. is a clarification of the existing Action a. This clarification has no adverse effect on safety.

The proposed new Action c. states:

"With steam generator inlet valves AF 599 or AF 608 closed, re-open the closed valve AF 599 or AF 608 within one hour or be in HOT STANDBY within the next 6 hours and HOT SHUTDOWN within the following 6 hours."

This Action statement does not change the way the plant is operated in accordance with the design bases. It provides clear requirements which direct the plant operators to shutdown the plant within prescribed time limits when no auxiliary feedwater can be provided to a steam generator. The shutdown time requirements specified by Action c. are the same as those required by DBNPS LCO 3.0.3 with the exception that the action requirements stop upon entry into hot shutdown (Mode 4) since LCO 3.7.1.2 is not applicable in Mode 4. Therefore, this change has no adverse effect on safety.

The proposed change to the time interval for Surveillance Requirement 4.7.1.2.1.a will require testing of the steam turbine driven auxiliary feedwater pumps each 92 days on a Staggered Test Basis rather than on a 31 day frequency. The proposed change is in conformance with the NRC recommendations of Generic Letter 93-05, Enclosure 1, Section 9.1, "Auxiliary Feedwater Pump and System Testing." The DBNPS reliability

data for the steam turbine driven auxiliary feedwater pumps has been reviewed and supports extending the surveillance frequency in accordance with the recommendations of Generic Letter 93-05. The availability is typically greater than 99%. Therefore, there is no adverse effect on safety by changing the test frequency.

The renumbering of the surveillance requirements is proposed to accommodate the change in surveillance frequency for the steam turbine driven auxiliary feedwater pumps and does not change the remainder of the currently existing surveillance requirements. This renumbering has no adverse effect on safety.

The rewording of the newly renumbered Surveillance Requirements 4.7.1.2.c., 4.7.1.2.1.f., and 4.7.1.2.1.g. as shown in the attached marked-up copy of the DBNPS Technical Specifications is to provide clarification only. The intent of these surveillance requirements has not been changed, therefore, the rewording has no adverse effect on safety.

Revising the footnote requiring the stationing of a dedicated individual locally at realigned Auxiliary Feedwater System valves during testing, by adding a requirement to have the Motor Driven Feedwater System operable, will address the issue of auxiliary feedwater availability during testing. If the Motor Driven Feedwater system is inoperable, then the original requirement to have a dedicated individual stationed at the realigned Auxiliary Feedwater System valves in communication with the control room able to restore the valves to normal system operable status still applies. Auxiliary feedwater availability during testing is addressed in each case and the intent of the footnote has not been changed, therefore, there is no adverse effect on safety.

The proposed changes to the Bases associated with the changes to Technical Specification 3.7.1.2 provide additional clarifying information and have no adverse effect on safety.

The proposed changes to Technical Specification 3/4.7.1.7, Motor Driven Feedwater System, are similar to that proposed for the Auxiliary Feedwater System and discussed above. The majority of these changes are clarifications or renumbering of existing Technical Specification requirements and, accordingly, have no adverse effect on safety.

The proposed change to the time interval for Surveillance Requirement 4.7.1.7.a will require testing the Motor Driven Feedwater Pump on a 92-day frequency rather than on a 31-day basis. This proposed change is similar to that in the NRC Generic Letter 93-05 recommendations. The DBNPS availability data for the Motor Driven Feedwater System has been reviewed and found to be typically greater than 99%. Therefore, the availability data supports extending the surveillance test frequency and there is no adverse effect on safety.

Revising the footnote requiring the stationing of a dedicated individual locally at realigned Motor Driven Feedwater Pump System valves during testing, by adding a requirement to have both auxiliary feedwater pumps and their associated flow paths operable, will address the issue of auxiliary feedwater availability during testing. If one auxiliary feedwater pump or flow path is inoperable, then the original requirement to have a dedicated individual stationed at the realigned Motor Driven Feedwater Pump System valves in communication with the control room able to restore the valves to normal system operable status still applies. Auxiliary feedwater availability during testing is addressed in each case and the intent of the footnote has not been changed, therefore, there is no adverse effect on safety.

The proposed changes to the Bases associated with the changes to Technical Specification 3/4.7.1.7 provide clarifying information and have no adverse effect on safety.

The proposed change to Bases Section 3/4.7.1.2 which relocates the specified total feedwater flow and pressure parameters to the USAR is consistent with NRC NUREG-1430. Any changes to these parameters must be addressed by the requirements of 10 CFR 50.59(b)(2). Therefore, deleting the specific parameter values for required auxiliary feedwater system flow and steam generator pressure from the Bases has no impact on safety since these are specified in the USAR.

SIGNIFICANT HAZARDS CONSIDERATION:

The Nuclear Regulatory Commission has provided standards in 10 CFR 50.92(c) for determining whether a significant hazard exists due to a proposed amendment to an Operating License for a facility. A proposed amendment involves no significant hazards consideration if operation of the facility in accordance with the proposed changes would: (1) Not involve a significant increase in the probability or consequences of an accident previously evaluated; (2) Not create the possibility of a new or different kind of accident from any accident previously evaluated; or (3) Not involve a significant reduction in a margin of safety. Toledo Edison has reviewed the proposed changes and determined that a significant hazards consideration does not exist because operation of the Davis-Besse Nuclear Power Station, Unit Number 1, in accordance with these changes would:

- 1a. Not involve a significant increase in the probability of an accident previously evaluated because no change is being made to any accident initiator. The proposed changes are clarifications and the incorporations of either the recommendations of Generic Letter 93-05 or the guidance provided by NUREG-1430. Therefore, it can be concluded that the proposed changes do not involve a significant increase in the probability of an accident previously evaluated.

- 1b. Not involve a significant increase in the consequences of an accident previously evaluated because the proposed changes do not invalidate accident conditions or assumptions used in evaluating the radiological consequences of an accident.
- 2a. Not create the possibility of a new kind of accident from any accident previously evaluated because the proposed changes do not change the way the plant is operated. No new types of failures or accident initiators are introduced by the proposed changes.
- 2b. Not create the possibility of a different kind of accident from any accident previously evaluated because no new failure modes have been defined for any plant system or component important to safety, nor has any limiting single failure been identified as a result of the proposed changes. No different accident initiators or failure mechanisms are introduced by the proposed changes.
3. Not involve a significant reduction in a margin of safety because the proposed changes continue to ensure the availability of the Auxiliary Feedwater System and the Motor Driven Feedwater System when called upon to perform their functions and will not adversely impact any safety analysis assumptions.

CONCLUSIONS:

On the basis of the above, Toledo Edison has determined that the License Amendment Request does not involve a significant hazards consideration. As this License Amendment Request concerns a proposed change to the Technical Specifications that must be reviewed by the Nuclear Regulatory Commission, this License Amendment Request does not constitute an unreviewed safety question.

ATTACHMENT:

Attached are the proposed marked-up changes to the Operating License.