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Docket Number 50-346

License Number NPF-3

Serial Number 2463

August 26, 1997

United States Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555-0001

Subject: Change Technical Specifications Regarding Reactor Coolant System Departure
from Nucleate Boiling (DNB) Flow Rate Parameters (License Amendment Request
No. 97-0009)

Ladies and Gentlemen:

Enclosed is an application for an amendment to the Davis-Besse Nuclear Power Station (DBNPS), Unit Number 1 Operating License NPF-3, Appendix A, Technical Specifications. The proposed change involves Technical Specification (TS) Limiting Condition for Operation 3.2.5 - Power Distribution Limits - DNB Parameters.

The need for this change results from a Preliminary Report of Safety Concerns (PSC) issued by Framatome Cogema Fuels (FCF) on January 30, 1997, which stated that the Action statement for the RCS degraded flow rate condition was incomplete and non-conservative. This condition and the need to change the Action statement were reported to the NRC by Licensee Event Report 97-003, dated March 3, 1997. //1

The proposed change would modify the TS 3.2.5 Action statement, which currently requires a limited power reduction of 2 percent for each 1 percent the Reactor Coolant System (RCS) flow rate is less than the required value specified in TS Table 3.2-2, DNB Margin. The proposed Action statement would be more restrictive, requiring a power reduction to less than 5 percent of rated thermal power within 4 hours if the RCS flow rate is less than the specified limit for greater than 2 hours. This change is consistent with NUREG-1430, "Standard Technical Specifications, Babcock and Wilcox Plants," Revision 1. AWW



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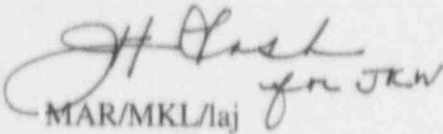
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While this proposed change is being processed, administrative guidance has been issued to DBNPS Plant Operations. This guidance states that if the Action for TS 3.2.5 is entered due to degraded Reactor Coolant System flow conditions, then TS 3.0.3 should be entered and the appropriate actions implemented.

Toledo Edison requests that the NRC staff approve this proposed change by January 9, 1998. Should you have any questions or require additional information, please contact Mr. James L. Freels, Manager - Regulatory Affairs, at (419) 321-8466.

Very truly yours,


MAR/MKL/laj

Enclosure

cc: A. B. Beach, Regional Administrator, NRC Region III
A. G. Hansen, DB-1 NRC/NRR Project Manager
S. Stasek, DB-1 NRC Senior Resident Inspector
J. R. Williams, Chief of Staff, Ohio Emergency Management Agency,
State of Ohio (NRC Liaison)
Utility Radiological Safety Board

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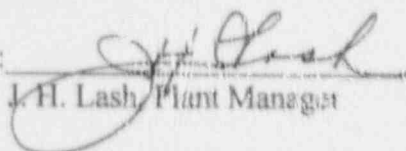
APPLICATION FOR AMENDMENT
TO
FACILITY OPERATING LICENSE NUMBER NPF-3
DAVIS-BESSE NUCLEAR POWER STATION
UNIT NUMBER 1

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.

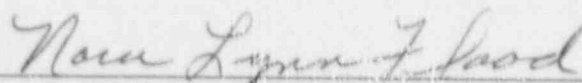
The proposed change (submitted under cover letter Serial Number 2463) concerns:

Appendix A, Technical Specification Section 3/4.2.5, Power Distribution Limits - DNB Parameters.

For: J. K. Wood, Vice President - Nuclear

By: 
J. H. Lash, Plant Manager

Sworn to and subscribed before me this 26th day of August, 1997.


Notary Public, State of Ohio
Nora Lynn Flood - My Commission expires 9/3/97.

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The following information is provided to support issuance of the requested change to the Davis-Besse Nuclear Power Station (DBNPS), Unit Number 1, Facility Operating License Number NPF-3, Appendix A, Technical Specifications. The change involves Technical Specification (TS) 3/4.2.5 - Power Distribution Limits - DNB Parameters.

A. Time Required to Implement: These changes will be implemented within 90 days after the NRC issuance of the License Amendment.

B. Reason for Change (License Amendment Request 97-0009):

This application proposes to revise the TS Limiting Condition for Operation to modify the Action statement to require a more restrictive limit on operation when the Reactor Coolant System Flow Rate parameter is not within its limit. The current Action statement is incomplete and non-conservative. This change is in accordance with NUREG-1430, "Standard Technical Specifications, Babcock and Wilcox Plants," Revision 1, dated April 1995.

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

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Attachment

SAFETY ASSESSMENT AND SIGNIFICANT HAZARDS CONSIDERATION
FOR
LICENSE AMENDMENT REQUEST NUMBER 97-0009

(9 pages follow)

**SAFETY ASSESSMENT AND SIGNIFICANT HAZARDS CONSIDERATION
FOR
LICENSE AMENDMENT REQUEST NUMBER 97-0009**

TITLE:

Revision of Technical Specifications to Remove Allowance for Maintaining Power Operation When the Reactor Coolant System (RCS) Flow Rate is Less Than the Required Value.

DESCRIPTION:

The purpose of the proposed change is to modify the Davis-Besse Nuclear Power Station (DBNPS) Operating License, NPF-3, Appendix A, Technical Specifications (TS). The change is described in detail below.

The current Action statement for TS Limiting Condition for Operation (LCO) 3.2.5, Departure from Nucleate Boiling (DNB) Parameters, allows a limited power reduction of 2 percent for each 1 percent the RCS flow rate is less than the required value specified by TS Table 3.2-2, DNB Margins. No other actions are required. The limited power reduction allowance was incorporated into the TS by Operating License Amendment No. 64 (Reference 3) to the DBNPS Facility Operating License which was approved by the Nuclear Regulatory Commission (NRC) on November 3, 1983. Prior to Amendment No. 64, a power reduction to less than 5 percent of rated thermal power within 4 hours would have been required if the RCS flow rate was less than the required value for greater than 2 hours.

On January 30, 1997, a Preliminary Report of Safety Concerns (PSC) (Reference 4) was issued by Framatome Cogema Fuels (FCF) in regards to TS LCO 3.2.5. This report documents that the Action statement for TS LCO 3.2.5 is incomplete and non-conservative for degraded RCS flow rate conditions (i.e., less than the limit specified in TS Table 3.2-2). The report states that if a degraded RCS flow rate condition were to develop, in addition to reducing reactor power by 2 percent for each 1 percent the RCS flow rate is below the required value, certain Reactor Protection System (RPS) setpoints would have to be adjusted. These could include the High Flux, Flux- Δ Flux-Flow, and RC Pressure-Temperature setpoints. The omission of resetting the RPS trip setpoints was identified by FCF as a result of evaluating potential reduced RCS flow rate conditions due to steam generator tube plugging at another Babcock & Wilcox-designed nuclear plant.

As previously stated, Amendment No. 64 incorporated the limited power reduction allowance into the Action statement for TS LCO 3.2.5. Amendment No. 64 was requested because the measured RCS flow rate during Cycle 3 was within approximately 1.5 percent of the TS minimum required flow rate for four pump operation. The safety evaluation for Amendment No. 64 was based, in part, on an FCF calculation (Reference 5). That calculation showed that reducing power by 2 percent for each 1 percent deficit in flow rate was conservative since it increased the steady-state minimum departure from nucleate boiling ratio. Thus, the Action allowed limiting thermal power as an option to restoring the flow rate to the TS required value. However, it was not

recognized that the effect of reduced flow on RPS setpoints also needed to be analyzed. Consequently, required Actions to reset the affected RPS trip setpoints were not developed.

As a result of FCF's PSC, on January 30, 1997, with the DBNPS operating at one hundred percent power, a Potential Condition Adverse to Quality Report (Reference 6) was initiated and the DBNPS staff took immediate action to implement administrative controls to require a plant shutdown if the TS required RCS flow rate was not maintained. Also on this date, the NRC was notified by the DBNPS via the Emergency Notification System in accordance with 10 CFR 50.72(b)(2)(iii)(D) that this event was considered a condition that could have alone prevented the fulfillment of a safety function of a system needed to mitigate the consequences of an accident. On March 3, 1997, the DBNPS staff issued a Licensee Event Report (Reference 7) in accordance with 10 CFR 50.73(a)(2)(v)(D).

Analysis of the measured RCS flow rate data from all previous DBNPS cycles showed that the TS minimum required flow rate has always been maintained. As a result, the Action for degraded RCS flow has not been previously needed. Administrative guidance has been provided to Plant Operations, by Standing Order 97-003, which will remain in effect until the TS is revised. This guidance states that if TS LCO 3.2.5 is entered due to degraded RCS flow rate conditions, then TS LCO 3.0.3 should be entered and appropriate actions implemented.

Analyses could be performed to determine the RPS trip setpoint adjustments that would be necessary for a degraded RCS flow rate condition. However, since the present TS minimum required RCS flow rates (389,500 and 290,957 gpm for four and three pump operation, respectively) are less restrictive than the Cycle 3 minimum required flow rates (396,880 and 297,340 gpm for four and three pump operation, respectively), actual flow rates are less likely to approach these values. The DBNPS staff has therefore elected not to have these analyses performed at this time. Since the current TS LCO 3.2.5 is nonconservative without the necessary RPS setpoint adjustments, it is proposed that the allowance to reduce reactor thermal power 2 percent for each 1 percent in degraded flow rate be removed from the Action statement of TS LCO 3.2.5.

By removing the limited power reduction allowance from the Action statement of TS LCO 3.2.5, a power reduction to less than 5 percent of rated thermal power will be required if the RCS flow rate cannot be restored to an acceptable value within the allotted time. This proposed Action statement is consistent with NUREG-1430, "Improved Standard Technical Specifications for Babcock & Wilcox Pressurized Water Reactors," LCO 3.4.1 (Reference 8).

SYSTEMS, COMPONENTS, AND ACTIVITIES AFFECTED:

The proposed TS change involves the RCS. No specific components or activities are affected. There are no hardware modifications involved.

FUNCTIONS OF THE AFFECTED SYSTEMS, COMPONENTS AND ACTIVITIES:

The RCS performs the following functions which are important to safe plant operation:

- Transfers heat from the reactor core to the Steam Generator.
 - The RCS transfers heat from the core to the Steam Generator during steady state operation and for any design transient without exceeding core thermal limits.
 - The RCS removes decay heat from the core via redundant components and features using controls from inside or outside the control room.
 - The RCS is designed to be capable of natural circulation cooldown from normal operating temperature and pressure to conditions that permit operation of the Decay Heat Removal System.
- Forms a barrier against the release of reactor coolant and radioactive material to the environs.
- Transfers heat from the reactor to containment during a loss of Steam Generator cooling (makeup feed and bleed).

EFFECTS ON SAFETY:

The proposed change removes the possibility of an unsafe condition because it will correct a nonconservative Action statement. If degraded RCS flow develops, the proposed Action statement will require a power reduction to less than 5 percent of rated thermal power rather than the limited power operation allowed by the current Action statement. Therefore, the proposed Action statement is more restrictive with respect to the current Action statement. This will have no adverse effect on plant safety.

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 previously evaluated; or (3) Not involve a significant reduction in the margin of safety. The Davis-Besse Nuclear Power Station 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 No. 1, in accordance with these changes would:

- 1a. Not involve a significant increase in the probability of an accident previously evaluated because no accident initiators, assumptions or probabilities are affected by the proposed

change. The proposed change corrects a nonconservative Technical Specification Action statement by removing provisions which allow continued Mode 1 plant operation in the event the Reactor Coolant System flow rate is less than the required value. Under the proposed change, a power reduction to less than 5 percent of rated thermal power (Mode 2) will be required if the Reactor Coolant System flow rate is less than the required Technical Specification value.

- 1b. Not involve a significant increase in the consequences of an accident previously evaluated because the proposed change does not affect any equipment, accident conditions, or assumptions which could lead to a significant increase in radiological consequences of an accident. The proposed change will ensure accident analyses remain valid if the Reactor Coolant System flow rate becomes less than the required value.
2. Not create the possibility of a new or different kind of accident from any accident previously evaluated because no new accident initiators will be introduced by the proposed change. No equipment or operations will be affected.
3. Not involve a significant reduction in a margin of safety because under the proposed Technical Specification Action statement a power reduction to less than 5 percent of rated thermal power (Mode 2) will be required if degraded Reactor Coolant System flow develops. The proposed Action statement ensures accident analyses' assumptions are maintained.

CONCLUSION:

On the basis of the above, the Davis-Besse Nuclear Power Station has determined that the License Amendment Request does not involve a significant hazards consideration. Furthermore, 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.

REFERENCES:

1. Davis-Besse Nuclear Power Station, Operating License NPF-3, Appendix A Technical Specifications Through Amendment 215.
2. Davis-Besse Nuclear Power Station, Updated Safety Analysis Report Through Revision 20.
3. NRC License Amendment No. 64 to Facility Operating License No. NPF-3, November 3, 1983 (Toledo Edison Log No. 1404).

4. "FCF Preliminary Report of Safety Concerns," Framatome Cogema Fuels, PT 21-97-1, January 30, 1997.
5. "Reduced Power and Flow Minimum Departure from Nucleate Boiling Ratio," Framatome Cogema Fuels, 32-1106986-00.
5. "Potential Condition Adverse to Quality Report," Davis-Besse Nuclear Power Station, 97-124, January 30, 1997.
7. "Non-conservative Technical Specification Action for Degraded Reactor Coolant Flow," Davis-Besse Nuclear Power Station, LER 97-003-00, March 3, 1997.
8. "Improved Standard Technical Specifications for Babcock & Wilcox Pressurized Water Reactors," NUREG 1430, Revision 1, April, 1995.