August 12, 2003

Mr. Lew W. Myers
Chief Operating Officer
FirstEnergy Nuclear Operating Company
Davis-Besse Nuclear Power Station
5501 North State Route 2
Oak Harbor, OH 43449-9760

SUBJECT: DAVIS-BESSE NUCLEAR POWER STATION, UNIT 1 - ISSUANCE OF AMENDMENT (TAC NO. MB3749)

Dear Mr. Myers:

The U.S. Nuclear Regulatory Commission has issued the enclosed Amendment No. 255 to Facility Operating Licence NPF-3 for the Davis-Besse Nuclear Power Station, Unit No. 1. This amendment revises the Technical Specifications (TS) in response to your application dated November 30, 2001.

This amendment revises TS 3/4.4.4, “Reactor Coolant System - Pressurizer,” to adopt a new pressurizer high level limit based on providing enough steam volume to prevent a pressurizer high level as a result of any transient. The proposed request changes the high level limit from the current 305 inches to a reduced high level limit of 228 inches. Additionally, the proposed changes would revise the TS Limiting Condition for Operation 3.4.4 Action statement to allow up to 1 hour to restore the pressurizer to operable status prior to taking action to place the plant in the Hot Standby operational mode.

A copy of the Safety Evaluation is enclosed. The notice of Issuance will be included in the Commission’s next biweekly *Federal Register* notice.

Sincerely,

/RA by JHopkins for /

Stephen P. Sands, Project Manager, Section 2
Project Directorate III
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-346

Enclosures: 1. Amendment No. 255 to License No. NPF3
2. Safety Evaluation

cc w/encls: See next page

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cc w/encls: See next page
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*No major changes to SE inputs.
**see previous concurrence

OFFICE	PDIII-2/PM	PDIII-2/LA	RORP/SC *	SRXB/SC	OGC	PDIII-2/SC
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DATE	07/03/03	07/29/03	07/10/03	07/16/03	07/22/03	07/31/03

OFFICIAL RECORD COPY

Davis-Besse Nuclear Power Station, Unit 1

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FIRSTENERGY NUCLEAR OPERATING COMPANY

DOCKET NO. 50-346

DAVIS-BESSE NUCLEAR POWER STATION, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment
No. 255
License No.
NPF-3

1. The U.S. Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by the FirstEnergy Nuclear Operating Company (the licensee) dated November 30, 2001, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment and paragraph 2.C.(2) of Facility Operating License No. NPF-3 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 255, are hereby incorporated in the license. FirstEnergy Nuclear Operating Company shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of issuance and shall be implemented within 120 days of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Anthony J. Mendiola, Chief, Section 2
Project Directorate III
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical Specifications

Date of Issuance: August 12, 2003

ATTACHMENT TO LICENSE AMENDMENT NO. 255

FACILITY OPERATING LICENSE NO. NPF-3

DOCKET NO. 50-346

Replace the following pages of the Appendix A Technical Specifications with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Remove	Insert
3/4 4-5	3/4 4-5

PRESSURIZER

LIMITING CONDITION FOR OPERATION

3.4.4 The pressurizer shall be OPERABLE with:

a. A steam bubble,

b. A water level between 45 and 228 inches.

APPLICABILITY: MODES 1 and 2.

ACTION:

With the pressurizer inoperable, restore the pressurizer to OPERABLE status within 1 hour or be in at least HOT STANDBY with the control rod drive trip breakers open within the next 6 hours.

SURVEILLANCE REQUIREMENTS

4.4.4 The pressurizer shall be demonstrated OPERABLE by verifying pressurizer level to be within limits at least once per 12 hours.

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 255 TO FACILITY OPERATING LICENSE NO. NPF-3

FIRSTENERGY NUCLEAR OPERATING COMPANY

DAVIS-BESSE NUCLEAR POWER STATION

DOCKET NO. 50-346

1.0 INTRODUCTION

By letter dated November 30, 2001 (Ref. 1) pursuant to Title 10 of the Code of Federal Regulations (CFR) Section 50.90, FirstEnergy Nuclear Operating Company (FENOC), requested an amendment to Operating License NPF-3 for the Davis Besse Nuclear Power Station (DBNPS), Unit 1. The license amendment request (LAR) revises the current DBNPS Technical Specification (TS) 3/4.4.4, "Reactor Coolant System - Pressurizer." Specifically, the proposed TS changes would (1) reduce the pressurizer high level limit specified in limiting condition for operation (LCO) 3.4.4 from 305 inches to 228 inches, and (2) modify the action requirement, when the pressurizer is inoperable, by adding a statement, which allows for up to 1 hour to restore the pressurizer to OPERABLE status before taking action to place the plant in HOT STANDBY.

2.0 REGULATORY EVALUATION

Section 182a of the Atomic Energy Act (Act) requires applicants for nuclear power plant operating licenses to include TSs as part of the license. These TS are derived from the plant safety analyses.

The staff has reviewed the proposed changes for compliance with 10 CFR 50.36 and agreement with the precedent as established in NUREG-1430. In general, licensees cannot justify TS changes solely on the basis of adopting the model standard technical specifications (STS). To ensure this, the staff makes a determination that proposed changes maintain adequate safety. There are two classes of changes to the TS: (1) changes needed to reflect contents of the design basis, and (2) voluntary changes to take advantage of the evolution in policy and guidance as to the required content and preferred format of TS over time. This LAR deals with both classes of changes: (1) revising the pressurizer high water limit reflects the contents of the design basis, and (2) providing a time limit for restoring pressurizer operability is a voluntary change that takes advantage of the content and preferred format of TS. In determining the acceptability of the revised pressurizer high water limit, the staff evaluated the licensee's loss of feedwater transient analysis. In determining the acceptability of adding a time limit for restoring pressurizer operability, the staff used the accumulation of generically approved guidance in NUREG-1430, Revision 2, "Standard Technical Specifications, Babcock and Wilcox Plants," dated October 10, 2001.

Licensees may revise the TS to adopt current improved STS format and content provided that plant-specific review supports a finding of continued adequate safety because: (1) the change is editorial, administrative, or provides clarification (i.e., no requirements are materially altered), (2) the change is more restrictive than the licensee's current requirement, or (3) the change is less restrictive than the licensee's current requirement, but nonetheless still affords adequate assurance of safety when judged against current regulatory standards. The detailed application of this general framework, and additional specialized guidance, are discussed in Section 3.0 in the context of specific proposed changes.

3.0 TECHNICAL EVALUATION

DBNPS TS LCO 3.4.4 specifies that, during Modes 1 and 2 operation, the pressurizer shall be operable with (a) a steam bubble, and (b) a water level between 45 and 305 inches. This LCO is intended to ensure that a steam bubble exists in the pressurizer prior to power operation to minimize the consequences of potential overpressure transients. The pressurizer high level limit permits pressure control equipment such as sprays and heaters to function as designed. The high level limit also prevents filling the pressurizer, i.e., water solid, during anticipated transients, thus ensuring that the pressurizer code safety valves and pilot-operated relief valves can provide overpressure protection by steam relief rather than water relief. Although the prevention of water relief through code safety valves is not a requirement for compliance with a safety limit, it is a design basis because water relief could potentially challenge valve reliability.

The proposed change to LCO 3.4.4 to reduce the existing high pressurizer water level limit of 305 inches to 228 inches is more restrictive than the existing LCO. The need for the proposed reduction in the high pressurizer water level limit was identified by the licensee during a review of the design basis. The licensee determined that the high level limit of 305 inches did not provide enough steam volume to prevent the pressurizer from going water solid during a loss of feedwater (LOFW) event, which is the most severe anticipatory transient with respect to pressurizer insurge. The licensee desires to prevent the pressurizer from going water solid in order to avoid code safety valves and power operated relief valves (PORV) from controlling reactor coolant system (RCS) pressure by relieving water, rather than steam, since water relief could potentially damage the valves. The proposed high level limit of 228 inches will reduce the likelihood of pressurizer going water solid during the most anticipated transient; thereby reducing the potential damage to the code safety relief valves and the PORV. The proposed change to TS 3/4.4.4 involving decreasing the pressurizer high level limit is more restrictive than the current limit.

The licensee performed an LOFW transient analysis with an initial pressurizer water level at a 220 inches, which is the nominal controller setpoint for power operation. The analysis result showed that when the pressurizer reached its peak level during the transient, 26 cubic feet of steam volume existed in the pressurizer. This 26 cubic feet of available steam space corresponds to 8 inches of initial pressurizer level. Hence the new high level limit of 228 inches is established to ensure that the pressurizer will not go water solid during a LOFW event initiated when operating with pressurizer level below this limit. Since the LOFW event is the most severe anticipated transient in terms of insurge into the pressurizer, the staff concludes that the high water level limit of 228 inches will provide assurance of no water release through the code safety valves during anticipatory transients, and is acceptable.

The licensee also proposed to revise the ACTION requirement, in the event that the pressurizer is inoperable, by adding a statement allowing for up to one hour to restore the pressurizer to OPERABLE status before taking action to place the plant in HOT STANDBY within the next

6 hours. The pressurizer inoperability can be due to complete loss of steam bubble in the pressurizer, or due to the water level higher than 228 inches or lower than 45 inches. In the event pressurizer water level exceeds 228 inches, the STS for Babcock & Wilcox designed plants (NUREG-1430) allows for one hour to restore the pressurizer to OPERABLE status. The staff also considers that the high water level is established to prevent water release through the safety valve to ensure valve reliability, rather than for compliance of safety limit. Therefore, allowing one hour to restore pressurizer operability would have an insignificant effect on public safety, and is acceptable. Since the complete loss of steam bubble in the pressurizer will be preceded by a condition of the pressurizer water level exceeding the high water level limit of 228 inches, this inoperability condition is covered by the high level limit.

The pressurizer low water level limit is based on providing enough water volume to prevent a reactor coolant system low pressure condition that would actuate the reactor protection system (RPS) or the engineered safety feature actuation system (ESFAS). Should an RCS depressurization event occur while the pressurizer water level is below the 45-inch low level limit, the plant will still be protected by the RPS and ESFAS. Therefore allowing up to one hour to restore to the OPERABLE status for the low level limit noncompliance will have no safety significance, and is acceptable.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Ohio State official was notified of the proposed issuance of the amendment. The State official has no comments.

5.0 ENVIRONMENTAL CONSIDERATIONS

This amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluent that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration and there has been no public comment on such finding (68 FR 37578). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

6.0 CONCLUSION

The staff has reviewed the proposed changes to DBNPS TS 3.4.4 to (1) reduce the pressurizer high level limit from 305 inches to 228 inches, and (2) revise the Action requirement for inoperable pressurizer by allowing one hour to restore the pressurizer to OPERABLE status before taking action to place the plant in HOT STANDBY. Based on the evaluation described in Section 2.0, the staff concludes these changes acceptable.

The staff has concluded, based on the considerations above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation into proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

7.0 REFERENCE

1. Letter from Guy G. Campbell, FirstEnergy, to US Nuclear Regulatory Commission, "Davis-Besse Nuclear Power Station, License Amendment Application to Revise Technical Specification 3/4.4.4, 'Reactor Coolant System - Pressurizer,' to Adopt New Pressurizer Level Requirements (License Amendment Request No. 01-0012)," November 30, 2001.

Principal Contributors: P. Hearn
Y. Hsii

Date: August 12, 2003