

September 14, 2000

Mr. Guy G. Campbell, Vice President - Nuclear
FirstEnergy Nuclear Operating Company
5501 North State Route 2
Oak Harbor, OH 43449-9760

SUBJECT: DAVIS-BESSE NUCLEAR POWER STATION, UNIT 1 - ISSUANCE OF
AMENDMENT (TAC NO. MA6361)

Dear Mr. Campbell:

The U.S. Nuclear Regulatory Commission has issued the enclosed Amendment No. 243 to Facility Operating License No. NPF-3 for the Davis-Besse Nuclear Power Station, Unit 1. The amendment revises the Technical Specifications in response to your application dated September 7, 1999 (Serial Number 2586, Licensing Amendment Request No. 98-0005).

By letters dated September 7, 1999, and July 14, 2000, the FirstEnergy Nuclear Operating Corporation (FENOC) requested a Technical Specification change for Davis-Besse Nuclear Power Station (DBNPS), Unit 1. The proposed Technical Specification (TS) changes would revise Table 3.3-4, Safety Features Actuation System Instrumentation Setpoints, to remove the "Trip Setpoint" values for Instrumentation String Functional Unit "b", Containment Pressure - High, and Functional Unit "c", Containment Pressure - High-High, and also modify the "Allowable Values" entry for these same Functional Units, consistent with NUREG-1430, "Improved Standard Technical Specifications for Babcock and Wilcox Pressurized Water Reactors," Revision 1.

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

Sincerely,

/RA/

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

Docket No. 50-346

Distribution w/encls:

Enclosures: 1. Amendment No. 243 to
License No. NPF-3
2. Safety Evaluation

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DATE	08/14/00		08/11/00		8/28/00	08/ /00	

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UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

September 14, 2000

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FirstEnergy Nuclear Operating Company
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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. 243 to
License No. NPF-3
2. Safety Evaluation

cc w/encls: See next page

Mr. Guy G. Campbell
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Davis-Besse Nuclear Power Station, Unit 1

cc:

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

FIRSTENERGY NUCLEAR OPERATING COMPANY

DOCKET NO. 50-346

DAVIS-BESSE NUCLEAR POWER STATION, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 243
License No. NPF-3

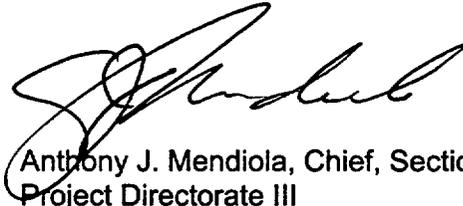
1. The U.S. Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by the FirstEnergy Nuclear Operating Company (the licensee) dated September 7, 1999, supplemented July 14, 2000, complies with the standards and requirements of the Atomic Energy Act of 1954, 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) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 243, 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 its date of issuance and shall be implemented not later than 120 days after issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



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: September 14, 2000

ATTACHMENT TO LICENSE AMENDMENT NO. 243

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

3/4 3-9
3/4 3-13
B 3/4 3-1

Insert

3/4 3-9
3/4 3-13
B 3/4 3-1

INSTRUMENTATION

3/4.3.2 SAFETY SYSTEM INSTRUMENTATION

SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.2.1 The Safety Features Actuation System (SFAS) functional units shown in Table 3.3-3 shall be OPERABLE with their trip setpoints set consistent with the values shown in the Trip Setpoint column of Table 3.3-4, with the exception of: Instrument Strings Functional Units b, c, d, e, and f, and Interlock Channels Functional Unit a, which shall be set consistent with the Allowable Value column of Table 3.3-4.

APPLICABILITY: As shown in Table 3.3-3.

ACTION:

- a. With a SFAS functional unit trip setpoint less conservative than the value shown in the Allowable Values column of Table 3.3-4, declare the functional unit inoperable and apply the applicable ACTION requirement of Table 3.3-3, until the functional unit is restored to OPERABLE status with the trip setpoint adjusted consistent with Table 3.3-4.
- b. With a SFAS functional unit inoperable, take the action shown in Table 3.3-3.

SURVEILLANCE REQUIREMENTS

4.3.2.1.1 Each SFAS functional unit shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL CALIBRATION and CHANNEL FUNCTIONAL TEST during the MODES and at the frequencies shown in Table 4.3-2.

4.3.2.1.2 The logic for the bypasses shall be demonstrated OPERABLE during the at power CHANNEL FUNCTIONAL TEST of functional units affected by bypass operation. The total bypass function shall be demonstrated OPERABLE at least once per REFUELING INTERVAL during CHANNEL CALIBRATION testing of each functional unit affected by bypass operation.

4.3.2.1.3 The SAFETY FEATURES RESPONSE TIME* of each SFAS function shall be demonstrated to be within the limit at least once per REFUELING INTERVAL. Each test shall include at least one functional unit per function such that all functional units are tested at least once every N times the REFUELING INTERVAL where N is the total number of redundant functional units in a specific SFAS function as shown in the "Total No. of Units" Column of Table 3.3-3.

* The response times (except for manual initiation) include diesel generator starting and sequence loading delays, when applicable. The response time limit (except for manual initiation) includes movement of valves and attainment of pump or blower discharge pressure.

TABLE 3.3-4

SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION TRIP SETPOINTS

<u>FUNCTIONAL UNIT</u>	<u>TRIP SETPOINT</u>	<u>ALLOWABLE VALUES</u>
INSTRUMENT STRINGS		
a. DELETED	DELETED	DELETED
b. Containment Pressure – High	DELETED	≤ 19.38 psia##
c. Containment Pressure - High-High	DELETED	≤ 41.65 psia##
d. RCS Pressure – Low	N.A.	≥ 1576.2 psig##
e. RCS Pressure - Low-Low	N.A.	≥ 441.42 psig##
f. BWST Level	N.A.	≥ 101.6 and ≤ 115.4 in. H ₂ O##
SEQUENCE LOGIC CHANNELS		
a. Essential Bus Feeder Breaker Trip (90%)	≥ 3744 volts for ≤ 7.8 sec	≥ 3558 volts ≤ 7.8 sec
b. Diesel Generator Start, Load Shed on Essential Bus (59%)	≥ 2071 and ≤ 2450 volts for 0.5 ± 0.1 sec	≥ 2071 and ≤ 2450 volts for 0.5 ± 0.1 sec#
INTERLOCK CHANNELS		
a. Decay Heat Isolation Valve and Pressurizer Heater	N.A.	< 328 psig## *

Allowable Value for CHANNEL FUNCTIONAL TEST and CHANNEL CALIBRATION

* Referenced to the RCS Pressure instrumentation tap.

Allowable Value for CHANNEL FUNCTIONAL TEST

3/4.3 INSTRUMENTATION

BASES

3/4.3.1 and 3/4.3.2 REACTOR PROTECTION SYSTEM AND SAFETY SYSTEM INSTRUMENTATION

The OPERABILITY of the RPS, SFAS and SFRCS instrumentation systems ensure that 1) the associated action and/or trip will be initiated when the parameter monitored by each channel or combination thereof exceeds its setpoint, 2) the specified coincidence logic is maintained, 3) sufficient redundancy is maintained to permit a channel to be out of service for testing or maintenance, and 4) sufficient system functional capability is available for RPS, SFAS and SFRCS purposes from diverse parameters.

The OPERABILITY of these systems is required to provide the overall reliability, redundancy and diversity assumed available in the facility design for the protection and mitigation of accident and transient conditions. The integrated operation of each of these systems is consistent with the assumptions used in the accident analyses.

The surveillance requirements specified for these systems ensure that the overall system functional capability is maintained comparable to the original design standards. The periodic surveillance tests performed at the minimum frequencies are sufficient to demonstrate this capability. The response time limits for these instrumentation systems are located in the Updated Safety Analysis Report and are used to demonstrate OPERABILITY in accordance with each system's response time surveillance requirements.

For the RPS, SFAS Table 3.3-4 Functional Unit Instrument Strings b, c, d, e, and f, and Interlock Channel a, and SFRCS Table 3.3-12 Functional Unit 2:

Only the Allowable Value is specified for each Function. Nominal trip setpoints are specified in the setpoint analysis. The nominal trip setpoints are selected to ensure the setpoints measured by CHANNEL FUNCTIONAL TESTS do not exceed the Allowable Value if the bistable is performing as required. Operation with a trip setpoint less conservative than the nominal trip setpoint, but within its Allowable Value, is acceptable provided that operation and testing are consistent with the assumptions of the specific setpoint calculations. Each Allowable Value specified is more conservative than the analytical limit assumed in the safety analysis to account for instrument uncertainties appropriate to the trip parameter. These uncertainties are defined in the specific setpoint analysis.

A CHANNEL FUNCTIONAL TEST is performed on each required channel to ensure that the entire channel will perform the intended function. Setpoints must be found within the specified Allowable Values. Any setpoint adjustment shall be consistent with the assumptions of the current specific setpoint analysis.

A CHANNEL CALIBRATION is a complete check of the instrument channel, including the sensor. The test verifies that the channel responds to the measured parameter within the necessary range and accuracy. CHANNEL CALIBRATION leaves the channel adjusted to account for instrument drift to ensure that the instrument channel remains operational between successive tests. CHANNEL CALIBRATION shall find that measurement errors and bistable setpoint errors are within the assumptions of the setpoint analysis. CHANNEL CALIBRATIONS must be performed consistent with the assumptions of the setpoint analysis.

The frequency is justified by the assumption of an 18 or 24 month calibration interval in the determination of the magnitude of equipment drift in the setpoint analysis.



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 243 TO FACILITY OPERATING LICENSE NO. NPF-3
FIRSTENERGY NUCLEAR OPERATING COMPANY
DAVIS-BESSE NUCLEAR POWER STATION, UNIT 1
DOCKET NO. 50-346

1.0 INTRODUCTION

By letter dated September 7, 1999, supplemented July 14, 2000, the FirstEnergy Nuclear Operating Company submitted a request to amend the Technical Specifications (TSs) for the Davis-Besse Nuclear Power Station (DBNPS), Unit 1. The proposed changes will revise the setpoints for the Safety Features Actuation System (SFAS) Instrumentation, and the associated Bases. By letter dated July 14, 2000, the licensee provided additional information. The July 14, 2000, letter was within the scope of the original Federal Register notice and did not change the Commission's no significant hazards consideration determination.

The licensee proposed the following changes in their TS amendment request:

A. Instrumentation: SFAS Trip Setpoints

TS Reference: TS Table 3.3-4, Functional Unit b, Containment Pressure -High

Changes: Delete Trip Setpoint. Change Allowable Value from ≤ 18.52 to ≤ 19.38 psia and change footnote from # to ##.

(Footnote # refers to Allowable Value for Channel Functional Test and Channel Calibration).

(Footnote ## refers to Allowable Value for Channel Functional Test.)

B. Instrumentation: SFAS Trip Setpoints

TS Reference: TS Table 3.3-4, Functional Unit c, Containment Pressure - High - High

Changes: Delete Trip Setpoint. Change Allowable Value from ≤ 38.52 to ≤ 41.65 psia and change footnote from # to ##.

(Footnote # refers to Allowable Value for Channel Functional Test and Channel Calibration).

(Footnote ## refers to Allowable Value for Channel Functional Test.)

C. Instrumentation: SFAS Trip Setpoints

TS Reference: Limited Condition for Operation (LCO) 3.3.2.1

Changes: Modified to reflect the changes to Table 3.3-4.

D. Instrumentation: Reactor Protection System and Safety System

TS Reference: Bases 3/4.3.1 and 3/4.3.2

Changes: Modified to reflect the changes to Table 3.3-4.

2.0 EVALUATION

A. Deletion of Setpoints:

The licensee's proposed request for deletion of trip setpoints for Functions b and c from TS Table 3.3-4 are consistent with the NUREG-1430, "Improved Standard Technical Specifications for Babcock and Wilcox Pressurized Water Reactors," Revision 1. The licensee stated that these two trip setpoints are calculated in the plant setpoint analysis and are listed in plant-controlled document, "Instrument Index," and Updated Safety Analysis Report. Further, all future changes to the trip setpoints will be in accordance with the requirements of 10 CFR 50.72, "Changes, Tests, and Experiments" and will be submitted to the Nuclear Regulatory Commission (NRC) in accordance to 10 CFR 50.71(e) and 10 CFR 50.59(b). Based on the justifications provided, the staff finds deletion of these two setpoints acceptable.

B. Updating Allowable Values:

The proposed Allowable Values for Containment Pressure - High and Containment Pressure - High-High are based on licensee's recent updating of setpoint analysis which is in accordance with:

- ISA-RP67.04, "Setpoints for Nuclear Safety Related Instrumentation," dated September 1994. By Regulatory Guide 1.1.05, Revision 3, "Setpoints for Safety-Related Instrumentation," dated December 1999, the NRC endorsed this ISA standard with four specific requirements.
- ISA-RP67.04, Part II, "Methodologies for the Determination of Setpoints for Nuclear Safety-Related Instrumentation," dated September 1994.
- NUREG-0737, "Clarification of TMI Action Plan Requirements," dated November 1980.

At a presentation on August 21, 1997, on DBNPS's Instrument Drift Study, documented by the NRC letter dated September 12, 1997, the licensee explained the methodology they have used in determining instrument string errors and calculating the allowable values. By letter dated December 2, 1997, the NRC approved extension of surveillance requirement intervals from 18 to 24 months which included an evaluation of the DBNPS's Instrument Drift Study.

The licensee stated that they have calculated new analytical limits for these two instrumentations and performed containment response based on the new analytical limits and observed negligible effect on the containment pressure and temperature response following a loss-of-coolant accident or a main steam line break.

Considering that the methodology used in calculating the instrument setpoint Allowable Values are based on recent NRC approved setpoint calculation methodology, the staff considers the proposed TS changes acceptable.

C. Footnotes # and ##:

This change is in conformance with NUREG-1430, Revision 1, and is acceptable to the staff.

D. Limiting Condition for Operation (LCO) 3.3.2.1 and Bases 3/4/3/1 and 3/4/3.2:

These changes are associated with the changes to TS Table 3.3-4 and are administrative changes and are, therefore, acceptable to the staff.

3.0 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 had no comments.

4.0 ENVIRONMENTAL CONSIDERATION

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 (64 FR 70086). 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.

5.0 CONCLUSION

The proposed changes are in accordance with NUREG-1430, Revision 1 or recent calculations based on the NRC-approved setpoint calculation methodology or are administrative in nature and are acceptable to the staff.

Principal Contributor: Subinoy Mazumdar

Date: September 14, 2000