

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. MB9016)

Dear Mr. Myers:

The U.S. Nuclear Regulatory Commission has issued the enclosed Amendment No. 256 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 May 21, 2003.

This amendment relocates to the Technical Requirements Manual the Technical Specification surveillance requirement pertaining to flow balance testing of the emergency core cooling system (ECCS) high pressure injection and low pressure injection subsystems following system modifications that alter subsystem flow characteristics. Also, the amendment adds an ECCS pump operability requirement to the Technical Specifications.

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/**

Jon B. Hopkins, Senior 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. 256 to  
License No. NPF-3  
2. Safety Evaluation

cc w/encls: See next page

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ADAMS ACCESSION NUMBER: ML031830237

OFFICE	PM:PD3-2	LA:PD3-2	OGC	SC:PD3-2
NAME	JHopkins	THarris	SCole	AMendiola
DATE	7/11/03	7/9/03	8/5/03	8/12/03

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. 256  
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 May 21, 2003, 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. 256, 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 30 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. 256

FACILITY OPERATING LICENSE NO. NPF-3

DOCKET NO. 50-346

Replace the following page of the Appendix A Technical Specifications with the attached revised page. The revised page is identified by amendment number and contains marginal lines indicating the areas of change.

Remove

3/4 5-5a

Insert

3/4 5-5a

## EMERGENCY CORE COOLING SYSTEMS

### SURVEILLANCE REQUIREMENTS (Continued)

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- h. By verifying each ECCS pump's developed head at the test flow point is greater than or equal to the required developed head, when tested pursuant to the requirements of Specification 4.0.5.

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 256 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 May 21, 2003, FirstEnergy Nuclear Operating Company (the licensee), requested changes to the Davis-Besse Nuclear Power Station (DBNPS) Technical Specifications (TSs). The proposed change would relocate TS Surveillance Requirement (SR) 4.5.2.h to the DBNPS Technical Requirements Manual (TRM). SR 4.5.2.h currently requires the performance of a flow balance test during shutdown following any modification to the high pressure injection (HPI) or low pressure injection (LPI) subsystems that alter the subsystem flow characteristics. The TRM is a licensee-controlled document which has been incorporated by reference into the Davis-Besse Updated Safety Analysis Report (USAR). Any changes to the Davis-Besse USAR or TRM are controlled in accordance with 10 CFR 50.59. The licensee also proposed to add a new TS SR 4.5.2.h which would require the verification of each emergency core cooling system (ECCS) pump's developed head pursuant to the requirements of TS 4.0.5. These changes are consistent with the standard technical specifications (STS), NUREG-1430, Revision 2, "Standard Technical Specifications, Babcock and Wilcox Plants," dated June 2001.

## 2.0 BACKGROUND

The Commission's regulatory requirements related to the content of TSs are set forth in 10 CFR 50.36. This regulation requires that the TSs include items in five specific categories. These categories include 1) safety limits, limiting safety system settings and limiting control settings, 2) limiting conditions for operation, 3) SRs, 4) design features, and 5) administrative controls. However, the regulation does not specify the particular TSs to be included in a plant's license.

The Nuclear Regulatory Commission (NRC) has previously approved the subject change on a plant-specific basis. One previous approval includes but is not limited to Seabrook Station, Unit 1, dated May 2, 2002 (ADAMS Accession Number ML021080238).



### 3.0 EVALUATION

#### 3.1 Relocation of Current SR 4.5.2.h to TRM

The existing SR 4.5.2.h of TS 3/4.5.2 "ECCS Subsystems -  $T_{avg} \geq 280^\circ\text{F}$ " will be relocated to the TRM. A current TS surveillance requirement may be removed from the TSs and placed in a licensee-controlled document provided that the requirement does not satisfy the criteria of 10 CFR 50.36(c)(3). The staff has evaluated the information provided by the licensee against these conditions. The following evaluation explains why the existing SR 4.5.2.h is not required to be included in the TSs and why moving the existing SR 4.5.2.h to the TRM is acceptable.

SR 4.5.2.h currently states the following:

4.5.2 Each ECCS subsystem shall be demonstrated OPERABLE:

- h. By performing a flow balance test, during shutdown, following completion of modifications to the HPI or LPI subsystems that alter the subsystem flow characteristics and verifying the following flow rates:

HPI System - Single Pump

Injection Leg 1-1	$\geq 375$ gpm at 400 psig*
Injection Leg 1-2	$\geq 375$ gpm at 400 psig*

Injection Leg 2-1	$\geq 375$ gpm at 400 psig*
Injection Leg 2-2	$\geq 375$ gpm at 400 psig*

LPI System - Single Pump

Injection Leg 1	$\geq 2650$ gpm at 100 psig**
Injection Leg 2	$\geq 2650$ gpm at 100 psig**

The associated footnotes \* and \*\* will also be relocated to the TRM.

- \* Reactor coolant pressure at the HPI nozzle in the reactor coolant pump discharge.  
\*\* Reactor coolant pressure at the core flood nozzle on the reactor vessel.

TS SR 4.5.2.h requires the performance of a flow balance test to the ECCS subsystems following the completion of modifications that alter the subsystem flow characteristics. TS 6.8.1 requires the licensee to have written procedures that are established, implemented and maintained for surveillance and test activities of safety-related equipment. These procedures govern the restoration of equipment to operable status after maintenance or modification. In addition, the TS definition of operability requires that an operable ECCS subsystem be capable of performing its intended safety function, and this depends on proper flow balance between the ECCS pumps in each subsystem. Thus, anytime repair, maintenance, modification, or replacement of a component makes a TS-required system or component inoperable, the licensee must conduct appropriate post-maintenance testing to demonstrate operability of the system or component. Therefore, this post-modification test requirement is not needed in TSs in order to ensure post-modification restoration of the required flow distribution of the HPI and LPI pump lines to support the operability of the associated ECCS subsystems. Therefore, the

requirement to perform a flow balance test after modifications that alter flow characteristics is not required to be in the TS to provide adequate protection of the public health and safety.

In addition, modifications that alter the subsystem flow characteristics must be conducted in accordance with 10 CFR 50.59 and 10 CFR 50.65. Hence, adequate regulatory controls exist for plant modification implementation. Finally, the requirement to conduct this testing during shutdown is unnecessary, because flow balance verification and adjustment can only be accomplished during shutdown conditions.

The STS does not contain post-maintenance or preventive maintenance requirements. Thus, transfer of this specification to the TRM is consistent with the STS. The placement of this specification in the TRM is acceptable because changes to the TRM, which are incorporated into the USAR by reference, are subject to the requirements of 10 CFR 50.59. Thus, by relocating this SR to the TRM, any change to this SR will be made in accordance with 10 CFR 50.59, as specified in the licensee's programs and procedures governing changes to the TRM.

The staff finds that (a) the requirements of the existing SR 4.5.2.h are not required by 10 CFR 50.36 to be included in TSs, (b) the TRM will continue to ensure adequate implementation of the existing flow-balance test requirements removed from existing SR 4.5.2.h, (c) adequate regulatory controls exist through 10 CFR 50.59 and current TS 6.8.1.c to control future changes to these requirements, and (d) TS 3.5.2 and the definition of operability will ensure proper flow balancing is maintained. Therefore, the relocation of the ECCS subsystem flow balance post-modification test requirement from existing SR 4.5.2.h to the TRM is acceptable.

### 3.2 New TS SR 4.5.2.h

The licensee proposed to add a new TS SR 4.5.2.h which would state the following:

4.5.2 Each ECCS subsystem shall be demonstrated OPERABLE:

h: By verifying each ECCS pump's developed head at the test flow point is greater than or equal to the required developed head, when tested pursuant to the requirements of Specification 4.0.5.

Details for performing SRs are more appropriately specified in the plant procedures required by TS 6.8.1, the USAR, and the TS Bases. As indicated in NRC Generic Letter 91-04, "Changes in Technical Specification Surveillance Intervals to Accommodate a 24-Month Fuel Cycle," allowing this procedural control is consistent with the vast majority of other SRs that do not dictate plant conditions for surveillances. Prescriptive procedural information in an SR is unlikely to contain all procedural considerations necessary for the plant operators to complete the specified test. Referral to plant procedures is required in any event. Other changes to procedural details include those associated with limits retained in the TS. For example, TS 4.0.5 requires the inservice inspection and testing (IST) requirements of Section XI of the American Society of Mechanical Engineers Code (ASME Code) as required by 10 CFR 50.55a for ASME Class 1, 2, and 3, pumps and valves.

The STS Bases for SR 3.5.2.4, ECCS pump IST, states that "Periodic surveillance testing of ECCS pumps to detect gross degradation caused by impeller structural damage or other hydraulic component problems is required by Section XI of the ASME Code. This type of testing may be accomplished by measuring the pump developed head at only one point of the pump characteristic curve. This verifies both that the measured performance is within an

acceptable tolerance of the original pump baseline performance and that the performance at the test flow is greater than or equal to the performance assumed in the plant safety analysis. SRs are specified in the IST Program, which encompasses Section XI of the ASME Code. Section XI of the ASME Code provides the activities and frequencies necessary to satisfy the requirements.”

Based on the above description, the staff finds that the revised SR 4.5.2.h and TS 4.0.5 requirements are adequate to ensure the operability of the ECCS subsystem pumps. Therefore, the revised SR 4.5.2.h to verify ECCS operability is also acceptable. In addition, the proposed SR 4.5.2.h requirements are consistent with SR 3.5.2.4 of the STS.

### 3.3 Finding

The NRC staff has reviewed the licensee's proposed changes to relocate the existing TS SR 4.5.2.h to the TRM and insert into TS a revised SR 4.5.2.h. Based on the above evaluation, the staff concludes that the proposed changes, including the proposed TS Bases changes, are 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 had no comments.

### 5.0 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 or changes a surveillance requirement. 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 34669). 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 concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the 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.

Principal Contributors: K. Kavanagh

Date: August 12, 2003