September 7, 2006

Mr. James H. Lash
Site Vice President
FirstEnergy Nuclear Operating Company
Beaver Valley Power Station
Mail Stop A-BV-SEB1
P.O. Box 4, Route 168
Shippingport, PA 15077

SUBJECT: BEAVER VALLEY POWER STATION, UNIT NOS. 1 AND 2 (BVPS-1 AND 2) - ISSUANCE OF AMENDMENTS RE: STEAM GENERATOR TUBE INTEGRITY (TAC NOS. MC8861 AND MC8862)

Dear Mr. Lash:

The Commission has issued the enclosed Amendment No. 276 to Facility Operating License No. DPR-66 and Amendment No.158 to Facility Operating License No. NPF-73 for BVPS-1 and 2. These amendments consist of changes to the Technical Specifications (TSs) in response to your application dated November 7, 2005, as supplemented April 25, June 1, and August 3, 2006.

These amendments include various TS changes to adopt Technical Specification Task Force (TSTF) Change Traveler TSTF-449, “Steam Generator Tube Integrity,” Revision 4. The availability of this TS improvement was announced in the *Federal Register* on May 6, 2005 (70 FR 24126), as part of the consolidated line item improvement process. Specifically, the amendments approve changes to the TS definition of Leakage, revise TS 3/4 4.6, “Reactor Coolant System Leakage,” add a new TS 3/4 4.5, “Steam Generator (SG) Tube Integrity” which replaces old TS 3/4 4.5, “Steam Generators,” add a new TS 6.19, “Steam Generator Program,” and add a new TS 6.9.7, “Steam Generator Tube Inspection Report.” Appropriate TS Bases changes were included with your application and will be incorporated in accordance with the TS Bases Control Program.

On August 7, 2006, your staff requested a 90-day implementation period for BVPS-1 and implementation prior to entry into Mode 4 following the fall 2006 refueling outage for BVPS-2, rather than the 60-day implementation period requested in your November 7, 2006, application. This is acceptable to the Nuclear Regulatory Commission staff.

A copy of our safety evaluation is also enclosed. The Notice of Issuance will be included in the Commission's biweekly *Federal Register* notice.

Sincerely,

/RA/

Timothy G. Colburn, Senior Project Manager
Plant Licensing Branch I-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-334 and 50-412

Enclosures:
1. Amendment No. 276 to DPR-66
2. Amendment No. 158 to NPF-73
3. Safety Evaluation

cc w/encls: See next page

A copy of our safety evaluation is also enclosed. The Notice of Issuance will be included in the Commission's biweekly *Federal Register* notice.

Sincerely,

/RA/

Timothy G. Colburn, Senior Project Manager
Plant Licensing Branch I-1
Division of Operating Reactor Licensing
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ACCESSION NO. ML062260011 *Input received. No substantive changes made.

OFFICE	LPLI-1/PM	LPLI-1/LA	CSGB/BC	OGC	ITSB/BC	LPLI-1/BC
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DATE	8/16/06	08/16/06	8/07/06	09/01/06	9/01/06	9/07/06

OFFICIAL RECORD COPY

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FIRSTENERGY NUCLEAR OPERATING COMPANY

FIRSTENERGY NUCLEAR GENERATION CORP.

DOCKET NO. 50-334

BEAVER VALLEY POWER STATION, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 276
License No. DPR-66

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

   A. The application for amendment by FirstEnergy Nuclear Operating Company, et al. (the licensee), dated November 7, 2005, as supplemented April 25, June 1, and August 3, 2006, 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. DPR-66 is hereby amended to read as follows:

   (2) Technical Specifications

   The Technical Specifications contained in Appendix A, as revised through Amendment No. 276, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of its issuance and shall be implemented within 90 days.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Richard J. Laufer, Chief
Plant Licensing Branch I-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment: Changes to the License and
Technical Specifications

Date of Issuance: September 7, 2006

ATTACHMENT TO LICENSE AMENDMENT NO. 276

FACILITY OPERATING LICENSE NO. DPR-66

DOCKET NO. 50-334

Replace the following page of the Facility Operating License No. DPR-66 with the attached revised page. The revised page is identified by amendment number and contains marginal lines indicating the areas of change.

Remove	Insert
3	3

Replace the following pages of 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
V	V
XV	XV
1-4	1-4
3/4 4-8	3/4 4-8
3/4 4-9	- -
3/4 4-10	- -
3/4 4-10a	- -
3/4 4-10b	- -
3/4 4-10c	- -
3/4 4-10d	- -
3/4 4-10e	- -
3/4 4-13	3/4 4-13
3/4 4-14	3/4 4-14
6-21	6-21
6-26	6-26
- -	6-27
- -	6-28

FIRSTENERGY NUCLEAR OPERATING COMPANY

FIRSTENERGY NUCLEAR GENERATION CORP.

OHIO EDISON COMPANY

THE TOLEDO EDISON COMPANY

DOCKET NO. 50-412

BEAVER VALLEY POWER STATION, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 158
License No. NPF-73

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

   A. The application for amendment by FirstEnergy Nuclear Operating Company, et al. (the licensee), dated November 7, 2005, as supplemented April 25, June 1, and August 3, 2006, 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-73 is hereby amended to read as follows:

   (2) Technical Specifications

   The Technical Specifications contained in Appendix A, as revised through Amendment No. 158, and the Environmental Protection Plan contained in Appendix B, both of which are attached hereto are hereby incorporated in the license. FENOC shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of the date of its issuance and shall be implemented prior to entry into Mode 4 following the fall 2006 refueling outage.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Richard J. Laufer, Chief
Plant Licensing Branch I-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment: Changes to the License and
Technical Specifications

Date of Issuance: September 7, 2006

ATTACHMENT TO LICENSE AMENDMENT NO. 158

FACILITY OPERATING LICENSE NO. NPF-73

DOCKET NO. 50-412

Replace the following page of the Facility Operating License No. NPF-73 with the attached revised page. The revised page is identified by amendment number and contains marginal lines indicating the areas of change.

Remove	Insert
3a	3a

Replace the following pages of 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
V	V
XIV	XIV
XV	XV
1-3	1-3
3/4 4-11	3/4 4-11
3/4 4-12	- -
3/4 4-13	- -
3/4 4-14	- -
3/4 4-14a	- -
3/4 4-14b	- -
3/4 4-14c	- -
3/4 4-14d	- -
3/4 4-14e	- -
3/4 4-14f	- -
3/4 4-15	- -
3/4 4-16	- -
3/4 4-19	3/4 4-19
3/4 4-20	3/4 4-20
6-22	6-22
- -	6-22a
6-27	6-27
- -	6-28
- -	6-29
- -	6-30
- -	6-31
- -	6-32

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NOS. 276 AND 158 TO FACILITY OPERATING

LICENSE NOS. DPR-66 AND NPF-73

FIRSTENERGY NUCLEAR OPERATING COMPANY

FIRSTENERGY NUCLEAR GENERATION CORP.

OHIO EDISON COMPANY

THE TOLEDO EDISON COMPANY

BEAVER VALLEY POWER STATION, UNIT NOS. 1 AND 2 (BVPS-1 AND 2)

DOCKET NOS. 50-334 AND 50-412

1.0 INTRODUCTION

By letter dated November 7, 2005 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML053140195), FirstEnergy Nuclear Operating Company, et. al., (the licensee) submitted a license amendment request (LAR) regarding BVPS-1 and 2 steam generator (SG) tube integrity Technical Specifications (TSs). The proposed amendment is modeled after the Nuclear Regulatory Commission's (NRC's) approved Technical Specification Task Force (TSTF) Standard Technical Specification Change Traveler, TSTF-449, "Steam Generator Tube Integrity," Revision 4. Additional information was provided by the licensee in letters dated April 25, 2006 (ADAMS Accession No. ML061210055), June 1, 2006 (ADAMS Accession No. ML061580610), and August 3, 2006 (ADAMS Accession No. ML062210423). The supplements dated April 25, June 1, and August 3, 2006, provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change the staff's original proposed no significant hazards consideration determination as published in the *Federal Register* on December 20, 2005 (70 FR 75491).

The scope of the BVPS-1 and 2 TS LAR includes changes to the definition of leakage, changes to the primary-to-secondary leakage requirements, changes to the SG tube surveillance program (SG tube integrity), changes to the SG reporting requirements, and associated changes to the TS Bases.

2.0 REGULATORY EVALUATION

The background, description, and applicability of the proposed changes associated with the SG tube integrity issue and the applicable regulatory requirements were included in the NRC staff's model safety evaluation (SE) published in the *Federal Register* on March 2, 2005

(70 FR 10298). The “Notice of Availability of Model Application Concerning Technical Specification; Improvement To Modify Requirements Regarding Steam Generator Tube Integrity; Using the Consolidated Line Item Improvement Process” was published in the *Federal Register* on May 6, 2005 (70 FR 24126), which made the model SE available to reference.

3.0 TECHNICAL EVALUATION

In its November 7, 2005, application, the licensee proposed changes to the TSs that are modeled after TSTF-449. There were minor differences between TSTF-449 and the licensee's application. These included differences in the facility licensing basis (than that discussed in TSTF-449) and differences in TS numbering, since the licensee has a different TS format (than that assumed in TSTF-449). With respect to the differences in the facility licensing basis, the differences did not invalidate the technical evaluation of TSTF-449; rather they resulted in the licensee having to slightly deviate from some of the modifications discussed in TSTF-449. For example, the licensee currently has more details concerning their accident analyses than what is present in the standard TSs (which were modified in TSTF-449). As a result, several of the changes discussed in TSTF-449 were not applicable. Since these differences were administrative in nature or they were consistent with the plant's licensing basis (e.g., in the level of detail incorporated into the TS Bases), the NRC staff determined they were acceptable.

In addition to these minor changes, the licensee proposed to include previously approved alternate repair criteria and repair methods into their proposed new TSs. The structure of TSTF-449 allows licensees to incorporate alternate repair criteria and methods into the TSTF-449 format. By incorporating the previously approved repair criteria and repair methods into the TSTF-449 format, there were several additions, deletions and changes to the requirements. These changes were made as a result of the format, content, and performance-based approach of TSTF-449. BVPS-2 has approved repair methods as described in TS 6.19.f, “Provisions for SG Tube Repair Methods.” BVPS-1 has no approved repair methods (i.e., sleeving) so it does not have a TS 6.19.f. Similarly, BVPS-2 has approved alternate repair criteria whereas BVPS-1 does not. Therefore, BVPS-1 does not have additional repair criteria listed under TS 6.19.c, “Provisions for SG Tube Repair Criteria.” This is consistent with TSTF-449. The staff verified that (a) the inspection criteria associated with these repair criteria and methods were moved to the inspection section of the proposed SG TSs, (b) the repair criteria were moved to the repair criteria section of the proposed SG TSs, (c) the repair methods were moved to the repair method section of the proposed SG TSs, and (d) the reporting requirements were moved to the reporting section of the proposed SG TSs. There were some pre-existing reporting requirements associated with these previously approved repair criteria deleted since the reporting requirements were no longer necessary. These requirements were no longer necessary because the licensee incorporated the limits that would require the report to be submitted into the definition of tube integrity (and the plant can not operate when tube integrity is not maintained under the proposed new SG TSs). A reporting requirement was also added to the new SG TSs to reflect a commitment to submit the report. In summary, the NRC staff determined that the previously approved repair criteria and repair methods were appropriately incorporated into the plant’s TSs.

The remainder of the application was consistent with, or more limiting than, TSTF-449 with one exception, as discussed below. In TSTF-449, the limit on normal operating primary-to-

secondary leakage rate through any one SG was significantly less than that assumed in the safety analysis. However, for BVPS-1 and 2, the normal operating primary-to-secondary leakage limit (150 gallons-per-day (gpd) per SG) is identical to the accident-induced primary-to-secondary leakage limit for design-basis accidents (DBAs) other than for an SG tube rupture at either unit or for a main steam line break accident at BVPS-2. Even though the normal operating primary-to-secondary leakage limit and the accident-induced leakage limit have a different technical basis, it is not uncommon that the two limits are the same (note, the normal operating primary-to-secondary leakage limit can not be greater than the accident-induced leakage limit). The normal operating primary-to-secondary leakage limit is intended to limit the frequency of steam generator tube ruptures (i.e., it is an early indicator of a potential loss of the structural integrity of a steam generator tube); whereas the accident-induced leakage limit ensures that the dose consequences associated with this leakage are acceptable. Given this situation, the NRC staff evaluated the acceptability of this difference between TSTF-449 and the licensee's submittal. Since the leakage rate observed during operation may increase during a DBA, in order to meet the accident limit, it may be necessary to ensure that the operational leak rate is kept below its limit. An increase in leakage during a DBA can be a result of either: (1) the higher differential pressure between the primary coolant system and the secondary system associated with a DBA thus causing the leak rate from flaws that leak during normal operation to leak at higher rates; or (2) the higher stress loadings associated with a DBA causing a flaw that was not leaking during normal operation to leak during the DBA.

In its April 25, 2006, response to an NRC staff RAI, the licensee described controls and procedures to ensure that the accident-induced leakage limit is not exceeded as a result of operational leakage. These controls and procedures are intended to ensure that the accident-induced leakage limit (and operational leakage limit) is not exceeded. The NRC staff reviewed the adequacy of the proposed TS criteria for operational and accident-induced leakage. The TS criteria on operational leakage is consistent with TSTF-449 and the accident-induced leakage limit is consistent with the licensee's accident analysis. Therefore, the staff finds the licensee's proposed TS criteria on these values acceptable, even though the operational leakage limit is not less than the accident-induced leakage limit.

In summary, the staff determined that the model SE is applicable to this review (except as discussed above) and finds the proposed changes acceptable.

Consistent with TSTF-449, the proposed TS changes include: (1) a revised definition of LEAKAGE in TS 1.14, (2) a revised TS 3/4.4.6.2, "RCS (Reactor Coolant System) Operational LEAKAGE," (3) a new TS 3/4.4.5, "Steam Generator (SG) Tube Integrity," (4) a revised TS 6.19, "Steam Generator (SG) Program," (5) a revised TS 6.9.7, "Steam Generator Tube Inspection Report," and (6) a revised Table of Contents page to reflect the proposed changes.

The proposed TS changes establish a programmatic, largely performance-based regulatory framework for ensuring SG tube integrity is maintained. The NRC staff finds that it addresses key shortcomings of the current framework by ensuring that SG programs are focused on accomplishing the overall objective of maintaining tube integrity. It incorporates performance criteria for evaluating tube integrity that the staff finds consistent with the structural margins and the degree of leak tightness assumed in the current plant licensing basis. The staff finds that maintaining these performance criteria provides a reasonable expectation that the SGs can be operated safely without an increase in risk.

The revised TSs will contain limited specific details concerning how the SG Program is to achieve the required objective of maintaining tube integrity; the intent being that the licensee will have the flexibility to determine the specific strategy for meeting this objective. However, the NRC staff finds that the revised TSs include sufficient regulatory constraints on the establishment and implementation of the SG Program such as to provide reasonable assurance that tube integrity will be maintained.

Failure to meet the performance criteria will be reportable pursuant to the requirements in Title 10 of the *Code of Federal Regulations* (10 CFR), Sections 50.72 and 50.73. The NRC reactor oversight process provides a process by which the NRC staff can verify that the licensee has identified any SG Program deficiencies that may have contributed to such an occurrence and that appropriate corrective actions have been implemented. Based on the above, the NRC staff finds that the TS changes proposed by the licensee in its November 7, 2005, application as supplemented April 25, June 1, and August 3, 2006, conform to the requirements of 10 CFR 50.36 and establish a TS framework that will provide reasonable assurance that SG tube integrity is maintained without undue risk to public health and safety.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Pennsylvania State official was notified of the proposed issuance of the amendments. The State official had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

The amendments change a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and change surveillance requirements. The NRC staff has determined that the amendments involve no significant increase in the amounts and no significant change in the types of any effluents 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 amendments involve no significant hazards consideration, and there has been no public comment on such finding (70 FR 75491). Accordingly, the amendments meet 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 amendments.

6.0 CONCLUSION

The Commission 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 the amendments will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributors: L. Miller
K. Karwoski

Date: September 7, 2006