September 28, 2001

Mr. L. W. Myers
Senior Vice President
FirstEnergy Nuclear Operating Company
Beaver Valley Power Station
Post Office Box 4
Shippingport, PA 15077

SUBJECT: BEAVER VALLEY POWER STATION, UNIT NO. 1 - ISSUANCE OF AMENDMENT RE: DECREASE REACTOR COOLANT SYSTEM (RCS) SPECIFIC ACTIVITY LIMIT (TAC NO. MB1580)

Dear Mr. Myers:

The Commission has issued the enclosed Amendment No. 244 to Facility Operating License No. DPR-66 for the Beaver Valley Power Station, Unit No. 1. This amendment consists of changes to the Technical Specifications (TSs) in response to your application dated March 28, 2001.

The amendment approves reductions in the activity limits specified in TS 3/4.4.8, "Reactor Coolant System Specific Activity," and TS 3/4.7.1.4, "Plant Systems Activity." These TS changes support revised Updated Final Safety Analysis Report (UFSAR) safety analyses with higher assumed accident-induced primary-to-secondary leakage for a postulated main steam line break accident in accordance with the methodology described in Generic Letter 95-05, "Voltage-Based Repair Criteria for Westinghouse Steam Generator Tubes by Outside Diameter Stress Corrosion Cracking."

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

Sincerely,

/RA/

Lawrence J. Burkhart, Project Manager, Section 1
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-334

Enclosures: 1. Amendment No. 244 to DPR-66
2. Safety Evaluation

cc w/encls: See next page

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PENNSYLVANIA POWER COMPANY

OHIO EDISON COMPANY

FIRSTENERGY NUCLEAR OPERATING COMPANY

DOCKET NO. 50-334

BEAVER VALLEY POWER STATION, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 244
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 March 28, 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, changes to the Updated Final Safety Analysis Report (UFSAR) to reflect the revisions made to the radiological dose consequence analysis of a postulated mainstream line break accident as described in the attached safety evaluation and as set forth in the application for amendment dated March 28, 2001, are authorized.

3. In addition, 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. 244, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

4. This license amendment is effective as of its date of issuance. The technical specification changes shall be implemented within 60 days. The UFSAR changes shall be implemented by the next update as required by 10 CFR 50.71(e). Implementation of the amendment requires incorporation in the UFSAR of the changes made to the description of the facility as described in the licensee's application dated March 28, 2001.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Patrick D. Milano, Acting Chief, Section 1
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical Specifications

Date of Issuance: September 28, 2001

ATTACHMENT TO LICENSE AMENDMENT NO. 244

FACILITY OPERATING LICENSE NO. DPR-66

DOCKET NO. 50-334

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
XIX	XIX
3/4 4-18	3/4 4-18
3/4 4-20	3/4 4-20
3/4 4-21	3/4 4-21
3/4 7-8	3/4 7-8
B 3/4 4-4	B 3/4 4-4
B 3/4 4-5	B 3/4 4-5

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 244 TO FACILITY OPERATING LICENSE NO. DPR-66

PENNSYLVANIA POWER COMPANY

OHIO EDISON COMPANY

FIRSTENERGY NUCLEAR OPERATING COMPANY

BEAVER VALLEY POWER STATION, UNIT NO. 1

DOCKET NO. 50-334

1.0 INTRODUCTION

By letter dated March 28, 2001, the FirstEnergy Nuclear Operating Company (the licensee) submitted a request for changes to the Beaver Valley Power Station, Unit No. 1 (BVPS-1) Technical Specifications (TSs).

The requested changes would reduce the specific activity limits associated with those specified for the reactor coolant system (RCS) and the secondary coolant system in TS 3/4.4.8, "Reactor Coolant System Specific Activity," and TS 3/4.7.1.4, "Plant Systems Activity," respectively. This TS change would support revised Updated Final Safety Analysis Report (UFSAR) safety analyses with higher primary-to-secondary leakage for a postulated main steam line break accident (MSLB) in accordance with the methodology described in Nuclear Regulatory Commission (NRC) Generic Letter (GL) 95-05, "Voltage-Based Repair Criteria for Westinghouse Steam Generator Tubes by Outside Diameter Stress Corrosion Cracking," also commonly referred to as the use of alternate repair criteria.

For the upcoming BVPS-1 Cycle 15, the licensee calculated the projected End of Core accident-induced steam generator leakage per GL 95-05. This calculation resulted in an increased maximum primary-to-secondary leakage, that when combined with the current RCS specific activity limit, gave unacceptable radiological consequences for the design-basis MSLB. The licensee maximized the calculated dose to approximate the dose acceptance criteria to determine the maximum allowable primary-to-secondary leakage and RCS primary coolant specific activity. The limiting calculated dose was the thyroid dose at the Exclusion Area Boundary from an MSLB with an iodine activity spike occurring co-incident with the MSLB. To allow for increased maximum accident-induced primary-to-secondary leakage of 14.5 gallons per minute (gpm), the licensee proposes to reduce the TS 3/4.4.8 RCS specific activity limit from the current value of 0.20 μCi/gm Dose Equivalent I-131 (DEI-131) to a value of 0.10 μCi/gm DEI-131. The licensee also proposed to reduce the TS 3/4.7.1.4 limit for secondary coolant system specific activity from the current value of 0.10 μCi/gm DEI-131 to a value of 0.05 μCi/gm DEI-131.

Other changes associated with the reduction in these specific activity limits include lowering the "Acceptable Operation" line on Figure 3.4-1, reflecting the reduced RCS specific activity limit in Table 4.4-12, "Primary Coolant Specific Activity Sample and Analysis Program," and revising the TS Figure Index and Bases.

The changes to the UFSAR design-basis MSLB dose consequence analysis or safety analysis incorporate the reduced specific activity limits, a revised control room charcoal filter efficiency as discussed in GL 99-02, "Laboratory Testing of Nuclear-grade Activated Charcoal," and elimination of an overly conservative assumption for a 20-minute delay in manually starting the BVPS-1 control room backup ventilation system.

2.0 EVALUATION

The licensee revised the design-basis MSLB accident dose analysis to incorporate the reduced RCS specific activity of 0.10 μCi/gm DEI-131, secondary coolant specific activity of 0.05 μCi/gm DEI-131 and increased accident-induced primary-to-secondary leakage of 14.5 gpm. The licensee's analysis generally follows guidance provided in GL 95-05 and NUREG-0800, "Standard Review Plan [SRP] for the Review of Safety Analysis Reports for Nuclear Power Plants," Section 15.1.5, for a pressurized water reactor MSLB dose analysis. The NRC staff reviewed the information provided and determined that the licensee's assumptions and methodology are acceptable and support the proposed TS changes. The NRC staff performed its own analyses using the licensee's assumptions and confirmed the licensee's results.

GL 95-05 states that any reduction of the RCS specific activity limit to less than 0.35 μCi/gm Dose Equivalent I-131 requires an evaluation of release rate data as described in Nuclear Technology, Vol. 94, p. 361 (1991), J. P. Adams and C. L. Atwood, "The Iodine Spike Release Rate During a Steam Generator Tube Rupture." The licensee provided this release rate information and evaluation in the submittal. The evaluation shows that BVPS-1 RCS DEI-131 release rate data supports lowering the TS RCS specific activity limit to 0.10 μCi/gm without compromising the SRP 15.1.5 assumption of an iodine appearance rate spiking factor of 500, occurring co-incident with the MSLB event.

The licensee also changed the credited control room filter efficiency to account for filter bypass and allow a safety factor of 2, implementing guidance in GL 99-02. This is only a change in the assumptions to be used in the dose analyses and does not affect the testing criteria for the control room charcoal filters. The effective iodine removal efficiency credited for the control room filtration system is increased from 94% to 96% and accounts for a reduction in safety factor from 5 to 2. Because the licensee followed guidance in GL 99-02, the NRC staff finds this revision acceptable.

The licensee removed the assumption that the control room is unpressurized for 20 minutes after the discharge of the Control Room Emergency Bottled Air Pressurization System (CREBAPS) has been completed. This assumption allowed for a higher unfiltered inleakage to occur during that 20-minute period. Because the limiting single failure for maximizing control room dose has already been assumed to occur, and an additional failure of the control room emergency ventilation system would have to take place to make this assumption reasonable, this assumption was overly conservative. The NRC staff agrees with the licensee that the assumption of a 20-minute unpressurized period after the discharge of the CREBAPS is unnecessary and overly conservative and finds that removal of this assumption is acceptable.

The results of the licensee's MSLB dose analyses are reported in the attached table. The resulting calculated offsite doses are less than the guidelines of 10 CFR Part 100 and the more restrictive dose acceptance criteria of SRP 15.1.5. The calculated control room doses are less than the dose guidelines in 10 CFR Part 50, Appendix A, General Design Criterion (GDC) 19.

The NRC staff finds that the licensee has followed the applicable regulatory guidance with respect to the revised design-basis MSLB dose consequence analysis and that the resultant calculated doses are within the guidelines of SRP 15.1.5, 10 CFR Part 100, and 10 CFR Part 50, Appendix A, GDC 19. Therefore, the NRC staff finds the revised design-basis MSLB dose consequence analysis acceptable, including the increase in the maximum assumed accident-induced primary-to-secondary leakage to 14.5 gpm. Furthermore, based on the acceptability of the revised dose consequence analysis, the NRC staff finds the proposed TS changes associated with the reduced RCS and secondary coolant system specific activity limits acceptable.

3.0 STATE CONSULTATION

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

4.0 ENVIRONMENTAL CONSIDERATION

The 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 and changes surveillance requirements. The NRC staff has determined that the amendment involves 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 amendment involves no significant hazards consideration, and there has been no public comment on such finding (66 FR 29354). 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 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 amendment will not be inimical to the common defense and security or to the health and safety of the public.

Attachment: Table, Result of Licensee's Dose Analysis

Principal Contributor: M. Hart

Date: September 28, 2001

Results of Licensee's Dose Analysis
Main Steam Line Break
Reactor Coolant System Specific Activity 0.10 μCi/gm DEI-131

Control Room Doses (rem)				
	Co-Incident Spike	*GDC-19 Criterion*	Pre-Incident Spike	*GDC-19 Criterion*
thyroid	**21.4**	*30*	**10.4**	*30*
whole body	**<0.2**	*5*	**<0.2**	*5*
Exclusion Area Boundary Doses, 0-2 hours (rem)				
	Co-Incident Spike	*SRP Criterion*	Pre-Incident Spike	*SRP Criterion*
thyroid	**29.7**	*30*	**16.6**	*300*
whole body	**<0.2**	*2.5*	**<0.2**	*25*
Low Population Zone Doses, 0-30 days (rem)				
	Co-Incident Spike	*SRP Criterion*	Pre-Incident Spike	*SRP Criterion*
thyroid	**18.0**	*30*	**3.26**	*300*
whole body	**<0.2**	*2.5*	**<0.2**	*25*