

**Marty L. Richey**  
Site Vice President724-682-5234  
Fax: 724-643-8069June 9, 2016  
L-16-096

10 CFR 50.46(a)(3)(ii)

ATTN: Document Control Desk  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

## SUBJECT:

Beaver Valley Power Station, Unit Nos. 1 and 2  
Docket No. 50-334, License No. DPR-66  
Docket No. 50-412, License No. NPF-732015 Annual 10 CFR 50.46 Report of Changes to or Errors in Emergency Core Cooling System Evaluation Models and Commitment Change Related to Revised Peak Cladding Temperature Analysis

In accordance with Title 10 of the *Code of Federal Regulations*, Part 50, Section 50.46(a)(3)(ii), FirstEnergy Nuclear Operating Company (FENOC) provides the attached report as the 2015 annual notification of changes or errors in emergency core cooling system evaluation models or the application of the models for the Beaver Valley Power Station, Unit Nos. 1 (BVPS-1) and 2 (BVPS-2). Current information for both large and small break loss-of-coolant accident (LOCA) transients is provided to satisfy 10 CFR 50.46 reporting requirements.

Attachments 1 and 2 provide a summary list and description of each change or error in the acceptable evaluation models or the application of the models that affects the peak fuel cladding temperature (PCT) calculation for various LOCA transients, as well as the estimated PCT effects of the change or error.

The changes or errors communicated to FENOC since the previous annual report are listed in the attachments and result in PCTs for the large and small break LOCA transients as follows:

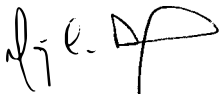
BVPS-1 large break LOCA – 1840°F  
BVPS-1 small break LOCA – 1895°F  
BVPS-2 large break LOCA – 1839°F  
BVPS-2 small break LOCA – 1917°F

By letter dated March 16, 2012, FENOC established a regulatory commitment to submit to the Nuclear Regulatory Commission (NRC) for review and approval large break LOCA (LBLOCA) analyses that apply NRC-approved methods that include the effects of fuel pellet thermal conductivity degradation (TCD) on or before December 15, 2016. FENOC is revising this commitment to change the specific calendar due date to one

based on NRC approval of the related evaluation methodologies that have been previously submitted to the NRC for review and approval. Specifically, WCAP-17642-P, "Westinghouse Performance Analysis and Design Model (PAD5)" and WCAP-16996-P, "Realistic LOCA Evaluation Methodology Applied to Full Spectrum of Break Sizes (Full Spectrum LOCA Methodology)," are currently with the NRC for review. The commitment due date is being revised to reflect an event based due date as shown in Attachment 3. The revised due date is to be within one year after NRC approval of the fuel performance analysis (PAD5) and LBLOCA evaluation model (full spectrum LOCA) methodologies.

There are no new regulatory commitments contained in this submittal, although the due date of one regulatory commitment has been revised. If there are any questions or if additional information is required, please contact Mr. Thomas A. Lentz, Manager – Fleet Licensing, at (330) 315-6810.

Sincerely,



Marty L. Richey

Attachments:

- 1 Summary of Peak Fuel Cladding Temperature (PCT) Effects for Beaver Valley Power Station (BVPS) Loss-of-Coolant Accident (LOCA) Transients
- 2 Descriptions of Emergency Core Cooling System (ECCS) Evaluation Model Changes or Errors
- 3 Regulatory Commitment List

cc: NRC Region I Administrator  
NRC Resident Inspector  
NRC Project Manager  
Director BRP/DEP  
Site BRP/DEP Representative

Attachment 1  
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Summary of Peak Fuel Cladding Temperature (PCT) Effects for Beaver Valley  
Power Station (BVPS) Loss-of-Coolant Accident (LOCA) Transients  
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**Beaver Valley Power Station Unit No. 1 (BVPS-1) Large Break LOCA**

Description	PCT Effect (°F)	Attachment 2 Description
None – Not Applicable (NA)	NA	NA

**BVPS-1 Small Break LOCA**

Description	PCT Effect (°F)	Attachment 2 Description
General Computer Code Maintenance	0	Page 1

**Beaver Valley Power Station Unit No. 2 (BVPS-2) Large Break LOCA**

Description	PCT Effect (°F)	Attachment 2 Description
None – NA	NA	NA

**BVPS-2 Small Break LOCA**

Description	PCT Effect (°F)	Attachment 2 Description
General Computer Code Maintenance	0	Page 1

## Attachment 2

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### Descriptions of Emergency Core Cooling System (ECCS) Evaluation Model Changes or Errors

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## **GENERAL COMPUTER CODE MAINTENANCE**

### Background

Various changes have been made to enhance the usability of computer codes and to streamline future analyses. Examples of these changes include: modifying input variable definitions, units, and defaults; improving the input diagnostic checks; enhancing the computer code output; optimizing active coding; and eliminating inactive coding. These changes represent discretionary changes that will be implemented on a forward-fit basis in accordance with Section 4.1.1 of WCAP-13451, "Westinghouse Methodology for Implementation of 10 CFR 50.46 Reporting," October 1992.

### Affected Evaluation Models

1985 Westinghouse Small Break Loss of Coolant Accident (LOCA) Evaluation Model with NOTRUMP (a nodal transient small break and general network computer code) (Applicable to BVPS-1 and BVPS-2)

### Estimated Effect

The nature of these changes leads to an estimated peak fuel cladding temperature (PCT) impact of 0°F for both BVPS-1 and BVPS-2.

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Regulatory Commitment List  
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The following list identifies those actions committed to by FirstEnergy Nuclear Operating Company (FENOC) for the Beaver Valley Power Station, Unit Nos. 1 and 2 in this document. Any other actions discussed in the submittal represent intended or planned actions by FENOC. They are described only as information and are not Regulatory Commitments. Please notify Mr. Thomas A. Lentz, Manager - Fleet Licensing, at (330) 315-6810 of any questions regarding this document or associated Regulatory Commitments.

Regulatory Commitment (no change)	Due Date (revised)
1. Submit to the NRC for review and approval LBLOCA analyses that apply NRC-approved methods that include the effects of fuel pellet TCD.	Within one year after NRC approval of the fuel performance analysis (PAD5) and LBLOCA evaluation model (full spectrum LOCA) methodologies.