



FirstEnergy Nuclear Operating Company

James H. Lash  
Site Vice President

724-682-5234  
Fax: 724-643-8069

March 29, 2006  
L-06-049

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

**Subject: Beaver Valley Power Station, Unit Nos. 1 and 2**  
**BV-1 Docket No. 50-334, License No. DPR-66**  
**BV-2 Docket No. 50-412, License No. NPF-73**  
**Additional Information in Support of EPU: License Amendment**  
**Request Nos. 302 and 173**

On October 4, 2004, FirstEnergy Nuclear Operating Company (FENOC) submitted License Amendment Request (LAR) Nos. 302 and 173 by letter L-04-125 (Reference 1). This submittal requested an Extended Power Uprate (EPU) for Beaver Valley Power Station (BVPS) Unit Nos. 1 and 2.

The following additional information is provided relative to the commitment identified in FENOC letter L-05-112 (Reference 2), in response to RAI Question V.4. The commitment was to perform an analysis to account for potential water solid operation through the discharge piping of the pressurizer safety valves (PSVs) and power operated relief valves (PORVs) during a spurious safety injection (SI) pressurizer overflow event under EPU conditions for BVPS-1 and BVPS-2.

Detailed analyses have been performed to determine the PSV and PORV transient conditions following a spurious SI at power event. The analyses conclude that the PSVs remain operable upon pressurizer overflow and subsequent water relief through the PSVs, and the discharge piping and supports remain acceptable under these transient conditions. The PSVs and PORVs will not fail under these conditions and will reseal properly such that there is no adverse effect on the RCS pressure boundary. The analysis is maintained on file and is available for future reference.

During a telephone call on March 22, 2006, the NRC requested information be provided relative to the reactor fuel enrichment and fuel assembly burn-up limitations at EPU conditions. This information is contained in Attachment 1.

A001

Beaver Valley Power Station, Unit Nos. 1 and 2  
Additional Information in Support of EPU: License Amendment Request Nos. 302 and  
173  
L-06-049  
Page 2

The additional information provided by this transmittal has no impact on either the proposed Technical Specification changes or the no significant hazards consideration transmitted by Reference 1.

No new regulatory commitments are contained in this submittal. If there are any questions or if additional information is required, please contact Mr. Gregory A. Dunn, Manager – FENOC Fleet Licensing, at (330) 315-7243.

I declare under penalty of perjury that the foregoing is true and correct. Executed on March 29, 2006.

Sincerely,



James H. Lash

Attachment:

1. Reactor Fuel Enrichment and Fuel Assembly Burn-up Limitations at EPU Conditions

References:

1. FENOC Letter L-04-125, License Amendment Request Nos. 302 and 173, dated October 4, 2004
2. FENOC Letter L-05-112, Responses to a Request for Additional Information in Support of License Amendment Request Nos. 302 and 173, dated July 8, 2006

c: Mr. T. G. Colburn, NRR Senior Project Manager  
Mr. P. C. Cataldo, NRC Senior Resident Inspector  
Mr. S. J. Collins, NRC Region I Administrator  
Mr. D. A. Allard, Director BRP/DEP  
Mr. L. E. Ryan (BRP/DEP)

**Attachment 1 of L-06-049**

**Reactor Fuel Enrichment and Fuel Assembly Burn-up Limitations at EPU Conditions**

During a phone call on March 22, 2006, the NRC staff requested that FENOC provide information relative to the reactor fuel enrichment and fuel assembly burn-up limitations at EPU conditions.

The following information is provided:

Conceptual core models at projected EPU conditions for BVPS-1 and BVPS-2 were developed to confirm that the core designs will remain within the limits of the EPU safety parameters and Technical Specification / Core Operating Limits Report (COLR). Based on the results of the core modeling, it was concluded that the EPU will not result in changes to the current design basis. The impact on average fuel assembly burn-up and lead fuel rod burn-ups are well within the normal cycle-to-cycle variations and current design basis as referenced in the BVPS-1 and BVPS-2 UFSARs (section 3.2.1.1.1 for BVPS-1 and section 4.2.1 for BVPS-2). The FENOC reload design process will ensure that the core designs remain within the plant safety analyses, including enrichment and assembly burn-up limitations as described in the UFSAR.

Projected feed assembly enrichments, cycle burn-ups, and assembly burn-ups at EPU conditions are presented below, with a comparison to recent core designs at the current reactor power level of 2689 MWt.

<b>Parameter</b>	<b>BVPS-1 Cycle 16</b>	<b>BVPS-2 Cycle 12</b>	<b>BVPS-2 Cycle 11</b>	<b>Conceptual EPU Cycle</b>
Cycle Design Burnup (MWD/MTU)	19,600	18,740	19,385	20,200
Assembly Enrichments	44 @ 4.4 wt% 16 @ 4.95 wt%	33 @ 4.2 wt% 28 @ 4.8 wt%	36 @ 4.4 wt% 24 @ 4.95 wt%	37 @ 4.4 wt% 28 @ 4.95 wt%
Maximum Assembly Discharge Burnup (MWD/MTU)	51,000	55,000	51,000	53,000