



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

May 5, 2009

Mr. Peter P. Sena III
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 NO. 1 - EXTENSION REQUEST APPROVAL LETTER RE: GENERIC LETTER 2004-02, "POTENTIAL IMPACT OF DEBRIS BLOCKAGE ON EMERGENCY RECIRCULATION DURING DESIGN BASIS ACCIDENTS AT PRESSURIZED WATER REACTORS," (TAC NO. MC4665)

Dear Mr. Sena:

Generic Letter (GL) 2004-02 identified potential susceptibility of pressurized-water reactor recirculation sump screens to debris blockage during design-basis accidents requiring recirculation operation of emergency core cooling systems (ECCS) or containment spray systems (CSS), and on the potential for additional adverse effects due to debris blockage of flowpaths necessary for ECCS and CSS recirculation and containment drainage. The GL requested that all corrective activities be completed no later than December 31, 2007.

By letter dated December 20, 2007, you requested an extension for certain activities associated with your response to GL 2004-02. The Nuclear Regulatory Commission (NRC) staff evaluated the information provided in your letter and concluded that for Beaver Valley Power Station, Unit Nos. 1 and 2 (BVPS-1 and 2), it was acceptable to extend the due date for completion of corrective actions until February 29, 2008.

By letter dated February 14, 2008, you requested an extension for certain sump blockage corrective actions associated with your response to GL 2004-02. The NRC staff evaluated the information provided in your letter and concluded that for BVPS-1, it was acceptable to extend the due date for completion of corrective actions until September 30, 2008.

By letter dated August 28, 2008, you requested an extension for certain sump blockage corrective actions associated with your response to GL 2004-02. The NRC staff evaluated the information provided in your letter and concluded that for BVPS-1, it was acceptable to extend the due date for completion of GL 2004-02 corrective actions until startup following the spring 2009 refueling outage.

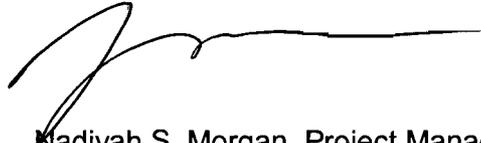
By letter dated April 30, 2009, you requested an extension for certain sump blockage corrective actions associated with your response to GL 2004-02. The NRC staff evaluated the information provided in your letter and concluded that for BVPS-1, as described in the enclosed NRC staff's evaluation, it is acceptable to extend the due date for completion of GL 2004-02 corrective actions until startup following the fall 2010 refueling outage.

P. Sena

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Please contact me at 301-415-1016, if you have any questions on this matter.

Sincerely,

A handwritten signature in black ink, appearing to be 'Nadiyah S. Morgan', written over a horizontal line.

Nadiyah S. Morgan, Project Manager
Plant Licensing Branch I-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-334

Enclosure:
As stated

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EXTENSION REQUEST APPROVAL

RELATED TO GL 2004-02 CORRECTIVE ACTIONS

FIRSTENERGY NUCLEAR OPERATING COMPANY

FIRSTENERGY NUCLEAR GENERATION CORP.

BEAVER VALLEY POWER STATION, UNIT NO. 1

DOCKET NO. 50-334

By letter dated April 30, 2009, FirstEnergy Nuclear Operating Company (licensee), requested an extension to the corrective action due date as stated in Nuclear Regulatory Commission (NRC) Generic Letter (GL) 2004-02, "Potential Impact of Debris Blockage on Emergency Recirculation During Design Basis Accidents at Pressurized Water Reactors," (GL 2004-02), for the Beaver Valley Power Station, Unit No. 1 (BVPS-1). The stated intent of requesting this extension was to allow additional time for mitigation of additional fibrous insulation material identified during the spring 2009 refueling outage (RFO), on the six reactor vessel (RV) inlet and outlet nozzles. The resulting additional fibrous loading is not bounded by the Reactor Coolant System (RCS) nozzle break scenario assumptions for strainer testing and analysis performed in response to GL 2004-02. The licensee requested an extension until startup following the fall 2010 RFO for BVPS-1.

Previously, by letter dated September 30, 2008 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML082740241), the NRC staff had determined that it was acceptable to extend the BVPS-1 GL 2004-02 corrective actions due date until the restart from the spring 2009 RFO. This extension would allow the licensee to complete replacement of certain Temp-Mat fibrous and calcium silicate insulation installed within the reactor cavity penetrations as a transition between vessel nozzles and reflective metal insulation on the RCS piping (hot and cold leg). The licensee stated, in its April 30, 2009, letter, that the above modification was being implemented during the spring 2009 RFO.

The NRC staff has based its review of extension requests for the due date for completion of GL 2004-02 corrective actions on criteria stated in SECY-06-0078. Specifically, an extension may be granted if:

- the licensee has a plant-specific technical/experimental plan with milestones and schedule to address outstanding technical issues with enough margin to account for uncertainties,
- the licensee identifies mitigative measures to be put in place prior to December 31, 2007, and adequately describes how these mitigative measures will minimize the risk of degraded emergency core cooling system (ECCS) and containment spray system (CSS) functions during the extension period, and
- For proposed extensions beyond several months, a licensee's request will more likely be accepted if the proposed mitigative measures include temporary physical

Enclosure

improvements to the ECCS sump or materials inside containment to better ensure a high level of ECCS sump performance.

With regard to the first extension criterion, the licensee has provided a plant-specific technical/experimental plan, with milestones and schedules, to complete the GL 2004-02 corrective actions as described in the licensee's letter dated August 28, 2008 (ADAMS Accession No. ML082480045), as supplemented by letter dated October 29, 2008 (ADAMS Accession No. ML083080094). That plan was further modified in the April 30, 2009, letter to address the discovery of additional fibrous insulation on the RV nozzles.

With regard to the second extension criterion, the NRC staff considers that, based on the information provided in the licensee's letter dated August 28, 2008, as supplemented by letter dated October 29, 2008, the modifications, mitigation measures, and compensatory measures in effect at BVPS-1 minimize the risk of degraded ECCS and CSS functions during the extension period. The licensee stated in its April 30, 2009, letter that the mitigation measures described in the August 28, 2008, and October 29, 2008, letters remain in effect.

The significant modifications discussed in the licensee's August 28, 2008, extension request, in particular the installation of large replacement strainers in both units, satisfies the third extension criterion.

Additionally, based on the information provided by the licensee in its letter dated April 30, 2009, the NRC staff has not identified any issues with the BVPS-1 piping welds connecting the RCS piping to the RV inlet and outlet nozzles, which are associated with the insulation for which the extension is being requested. The piping welds connect the stainless steel RCS loop piping to the RV nozzles, which are carbon steel with stainless steel buttering. The welds were examined in accordance with the licensee's American Society of Mechanical Engineers Boiler and Pressure Vessel Code, Section XI, Inservice Inspection Program during the October 2007 RFO. The examinations included ultrasonic examinations from the piping inner diameter supplemented with eddy current examination. Based on the material composition of these welds and the recent examination history, the NRC staff has no reason to suspect that these welds contain structural integrity issues that might negatively affect the insulation subject to the BVPS-1 extension request.

The NRC staff believes that the licensee has a reasonable plan for BVPS-1 that should result in the completion of final GL 2004-02 corrective actions that provide acceptable strainer function with adequate margin for uncertainties. Furthermore, the NRC staff has concluded that the licensee has put mitigation measures in place at BVPS-1 to adequately reduce risk for the approved extension period discussed below. The NRC staff has high confidence that the associated risk for the new extension period remains low.

Based on the licensee having satisfactorily addressed the NRC GL 2004-02 due date extension criteria as discussed above, the NRC staff finds it is acceptable to extend the completion date for corrective actions associated with the BVPS-1 insulation mitigation, to be accomplished through removal, replacement, analysis or design modification, until startup following the fall 2010 RFO. The licensee has committed to providing a description of the proposed mitigation activities associated with GL 2004-02 to the NRC as a supplemental response prior to the start of the fall 2010 RFO for BVPS-1.

P. Sena

- 2 -

Please contact me at 301-415-1016, if you have any questions on this matter.

Sincerely,
/RA/

Nadiyah S. Morgan, Project Manager
Plant Licensing Branch I-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-334

Enclosure:
As stated

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ADAMS Accession No.:ML091240030

*See memo dated May 1, 2009

**Concurred via email

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