



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

April 22, 2014

Mr. Eric A. Larson, 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, UNITS 1 AND 2 - REQUEST FOR
ADDITIONAL INFORMATION REGARDING REACTOR VESSEL
SURVEILLANCE CAPSULE WITHDRAWAL SCHEDULES (TAC NOS. MF1929
AND MF1930)

Dear Mr. Larson:

By letter dated May 28, 2013, as supplemented by letter dated December 13, 2013, FirstEnergy Nuclear Operating Company (the licensee) submitted a request to revise the reactor vessel surveillance capsule withdrawal schedules for the Beaver Valley Power Station, Units 1 and 2. To complete its review, the Nuclear Regulatory Commission staff requests a response to the enclosed question.

The draft question was sent to Mr. Phil Lashley, of your staff, to ensure that the question was understandable, the regulatory basis for the question was clear, and to determine if the information was previously docketed. Please respond to the enclosed question within 30 days of the date of this letter.

If you have any questions regarding this matter, please contact me at 301-415-4090.

Sincerely,

A handwritten signature in black ink that reads "Jeffrey A. Whited".

Jeffrey Whited, Project Manager
Plant Licensing Branch I-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-334 and 50-412

Enclosure:
Request for Additional Information

cc w/encl: Distribution via Listserv

REQUEST FOR ADDITIONAL INFORMATION
PROPOSED REVISION TO REACTOR VESSEL SURVEILLANCE
CAPSULE WITHDRAWAL SCHEDULES
FIRSTENERGY NUCLEAR OPERATING COMPANY
BEAVER VALLEY POWER STATION, UNITS 1 AND 2
DOCKET NOS. 50-334 AND 50-412

By letter dated May 28, 2013,¹ as supplemented by letter dated December 13, 2013,² FirstEnergy Nuclear Operating Company (FENOC, the licensee) submitted a request to revise the reactor vessel (RV) surveillance capsule withdrawal schedules for the Beaver Valley Power Station, Units 1 and 2 (BVPS-1 and BVPS-2). The request was based, in part, on updated fluence calculations. In order to complete its review of this request, the Nuclear Regulatory Commission (NRC) staff requires additional information.

The table below shows the differences between the peak fluence values for both units, as presently reported, and as calculated to support the license renewal safety review in 2007/2008. The table shows that the Unit 2 peak fluence values for 48 effective full-power years (EFPY) differ by 16 percent, which is judged to be excessive to attribute to the incorporation of 4 additional cycles of core follow data, without further information.

Max. Calculated Fluence, Pressure Vessel Clad/Base Metal Interface		
BVNPS Unit 1 48 EFPY 0° Azimuth	Sept. 2011	April 2008
	WCAP-15571-S1-R2	WCAP-15571-S1-R1
	ML13151A059	ML082740205
	5.36E19	5.42E19
	Cycle 20 →	Cycle 17 →
	% Diff.	1.1 %
BVNPS Unit 2 48 EFPY 0° Azimuth	Sept. 2011	July 2007
	WCAP-16527-NP-S1-R1	WCAP-16527-NP-S1-R0
	ML13151A060	ML072410032
	4.67E19	5.56E19
	Cycle 15 →	Cycle 11 →
	% Diff.	16%

According to WCAP-14040-A,³ Revision 4, which is the most recent document generically describing Westinghouse's methods for determining pressure vessel neutron fluence, the

¹ Agencywide Documents Access Management System (ADAMS) Accession No. ML13151A058.

² ADAMS Accession No. ML13350A581.

³ ADAMS Accession No. ML050120209.

analytical uncertainty associated with these methods is 13 percent. Thus, the 16 percent difference at Unit 2 exceeds the uncertainty estimated for the method.

SRXB RAI-1: Given the differences identified in the table above, please provide a summary description explaining what aspects of the neutron fluence methodology and input assumptions were changed between the 2007/2008 evaluations and those submitted in 2013. Provide a sufficiently detailed description to permit the NRC staff to determine independently whether the present calculations are adherent to NRC Regulatory Guide 1.190, "Calculational and Dosimetry Methods for Determining Pressure Vessel Neutron Fluence."

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Sincerely,

/RA/

Jeffrey Whited, Project Manager
Plant Licensing Branch I-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

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***via e-mail**

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