



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

March 30, 2016

Mr. Marty L. Richey, 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 NOS. 1 AND 2 - REQUEST FOR
ADDITIONAL INFORMATION REGARDING LICENSE AMENDMENT
REQUEST TO ADOPT NATIONAL FIRE PROTECTION ASSOCIATION
STANDARD 805 (CAC NOS. MF3301 AND MF3302)

Dear Mr. Richey:

By letter dated December 23, 2013 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML14002A086), as supplemented by letters dated February 14, 2014; April 27, 2015; May 27, 2015; June 26, 2015; November 6, 2015; December 21, 2015; and February 24, 2016 (ADAMS Accession Nos. ML14051A499, ML15118A484, ML15147A372, ML15177A110, ML15313A306, ML15356A136, and ML16055A160, respectively), FirstEnergy Nuclear Operating Company submitted a license amendment request to change the Beaver Valley Power Station, Unit Nos. 1 and 2, fire protection program to one based on the National Fire Protection Association Standard 805, "Performance-Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants," 2001 Edition, as incorporated into Title 10 of the *Code of Federal Regulations* Section 50.48(c). To complete its review, the U.S. Nuclear Regulatory Commission staff requests a response to the enclosed Request for Additional Information questions.

The draft questions were sent to Mr. Phil Lashley, of your staff, to ensure that the questions were understandable, the regulatory basis for the questions was clear, and to determine if the information was previously docketed. Please respond to the enclosed questions within 45 days from the date of this letter.

M. Richey

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If you have any questions regarding this matter, please contact me at (301) 415-7128 or Taylor.Lamb@nrc.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "Taylor A. Lamb". The signature is fluid and cursive, with the first name "Taylor" being more prominent than the last name "Lamb".

Taylor A. Lamb, 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/enclosure: Distribution via Listserv

REQUEST FOR ADDITIONAL INFORMATION
LICENSE AMENDMENT REQUEST TO ADOPT
NATIONAL FIRE PROTECTION ASSOCIATION STANDARD 805,
"PERFORMANCE-BASED STANDARD FOR FIRE PROTECTION
FOR LIGHT WATER REACTOR GENERATING PLANTS,"
FIRSTENERGY NUCLEAR OPERATING COMPANY
BEAVER VALLEY POWER STATION, UNIT NOS. 1 AND 2
DOCKET NOS. 50-334 AND 50-412

By letter dated December 23, 2013 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML14002A086), as supplemented by letters dated February 14, 2014; April 27, 2015; May 27, 2015; June 26, 2015; November 6, 2015; December 21, 2015; and February 24, 2016 (ADAMS Accession Nos. ML14051A499, ML15118A484, ML15147A372, ML15177A110, ML15313A306, ML15356A136, and ML16055A160, respectively), FirstEnergy Nuclear Operating Company (the licensee) submitted a license amendment request (LAR) to change the Beaver Valley Power Station, Unit Nos. 1 and 2, fire protection program to one based on the National Fire Protection Association Standard 805 (NFPA 805), "Performance-Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants," 2001 Edition, as incorporated into Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.48(c). To complete its review, the U.S. Nuclear Regulatory Commission (NRC) staff requests a response to the Request for Additional Information (RAI) questions below.

Safe Shutdown RAI 13.01

In its letter dated February 24, 2016, the licensee submitted new Approval Request 5 for the use of two 1.5-hour rated fire dampers in series with 1-hour fire wrap on duct penetrations as an acceptable method to meet the requirements of NFPA 805, Section 3.11.3, for fire barrier penetrations. The licensee stated that the approval request applies to Unit No. 2 fire areas that received prior approval of 1-hour fire wrap extending from the fire barrier to, and including, the fire damper outside the plane of the fire barrier.

The licensee cited excerpts from NRC Safety Evaluation Report NUREG-1057, Supplement 5, Section 9.5.1.4, dated May 1987, which described the fire loading as less than .50 hour on either side of the subject dampers, with smoke detection provided in all areas where the 1-hour fire wrap is installed and hose racks available for fire brigade use. However, in the approval request, the licensee described significant differences in the configurations under consideration in that the fire areas evaluated in the approval request have fire loadings equivalent to a fire duration between 1-hour and 2.25 hours, and in some of the fire areas, there is no credited fire detection.

Enclosure

Provide the following information to support the conclusion that the configurations are acceptable:

- a) In LAR Attachment C, the licensee stated that a performance-based analysis is credited to meet the nuclear safety performance criteria in accordance with NFPA 805, Section 4.2.4. Describe how it can be assured that the fire damper/wrap configurations described in the approval request are capable of withstanding the fire hazards associated with the fire areas. In particular, describe how the configurations are adequate for areas with fire loadings greater than 1 hour.
- b) One of the requirements for the use of performance-based alternatives to demonstrate compliance under 10 CFR 50.48(c)(2)(vii) is that fire protection defense-in-depth (DID) must be maintained. In the approval request, the licensee stated that echelons 2 and 3 of DID are met through the use of fire prevention procedures, which maintain the functionality of the credited fire detection, and automatic and manual fire suppression systems. It is unclear how the fire prevention procedures maintain the functionality of active fire protection systems or the relevance of this when these features are not present. Clearly describe the fire prevention procedures and how the three elements of DID required by Section 1.2 of NFPA 805 are achieved in the fire areas described in the approval request.
- c) In LAR Table 4-3, "Summary of NFPA 805 Compliance Basis and Required Fire Protection Systems and Features," the licensee identified that "wrap on exposed ductwork" credited in licensing actions is a fire protection feature required to meet NFPA 805, Chapter 4, compliance in the fire areas that are described in the approval request. Explain why the two 1.5-hour fire rated dampers are not included in LAR Table 4-3 as required fire protection features for these areas. Further, explain why "wrap on exposed ductwork" is not included as a required fire protection feature for fire area 2-ASP.

M. Richey

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If you have any questions regarding this matter, please contact me at (301) 415-7128 or Taylor.Lamb@nrc.gov.

Sincerely,

/RA/

Taylor A. Lamb, 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

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