



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

September 26, 2018

OMB Control No. 3150-0231

To Those on the Attached List

SUBJECT: CLOSEOUT OF GENERIC LETTER 2016-01, "MONITORING OF NEUTRON-ABSORBING MATERIALS IN SPENT FUEL POOLS" (CAC NOS. MF9444, MF9445, MF9443, MF9440, AND MF9409; EPID L-2016-LRC-0001)

Dear Sir or Madam:

On April 7, 2016, the U.S. Nuclear Regulatory Commission (NRC) issued Generic Letter (GL) 2016-01, "Monitoring of Neutron-Absorbing Materials in Spent Fuel Pools" (Agencywide Documents Access and Management System (ADAMS) Accession No. ML16097A169), to address the degradation of neutron-absorbing materials (NAMs) in wet storage systems for reactor fuel at power and non-power reactors.

The generic letter requested that licensees provide information to allow the NRC staff to verify continued compliance through effective monitoring to identify and mitigate any degradation or deformation of NAMs credited for criticality control in spent fuel pools (SFPs).

The Enclosure provides a list of licensee responses to address the requested details described in Appendix A to GL 2016-01. In the licensees' responses to GL 2016-01, as supplemented, the licensees stated that some deformation has been identified as part of their Boral monitoring program. The licensees also stated that the observed deformation is bounded by the criticality studies documented in Electric Power Research Institute (EPRI) Report 3002013119, "Evaluation of the Impact of Neutron Absorber Material Blistering and Pitting on Spent Fuel Pool Reactivity," May 2018 (ADAMS Accession No. ML18226A292).

EPRI Report 3002013119 documents a series of sensitivity studies performed on representative SFP rack configurations to demonstrate that the amount of observed pitting and blistering would not be expected to have a significant reactivity impact. Preliminary conclusions are obtained based on the estimated reactivity impact from EPRI Report 3002013119 for pitting and blistering dimensions that go well beyond that observed by the licensees' monitoring programs.

The NRC staff notes that the studies documented in EPRI Report 3002013119 are intended to be generic analyses and were not provided as site-specific analyses. Therefore, the results of the analyses, or any part of those analyses, have currently not been shown as directly applicable to the sites listed in the Enclosure. In addition, the NRC staff did not review whether the EPRI Reports could be used to justify equipment operability, design basis changes, or licensing changes requested pursuant to Title 10 of the *Code of Federal Regulations*, Section 50.90, "Application for amendment of license, construction permit, or early site permit." However, the NRC staff's review determined that the EPRI report does provide the information required to satisfy the request in GL 2016-01 for Boral at this time.

For the power reactor facilities listed in the Enclosure, the NRC staff's review determined that the information provided sufficiently addressed the five areas of information described in Appendix A to GL 2016-01. Based on the review of the information provided, the NRC staff concludes no further information is requested regarding GL 2016-01 for those plants listed in the Enclosure.

Sincerely,

A handwritten signature in black ink, appearing to read "Doug Broaddus". The signature is fluid and cursive, with a large initial "D" and a long, sweeping tail.

Douglas A. Broaddus, Chief
Special Projects and Process Branch
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-315, 50-316, 50-346,
50-333 and 50-382

Enclosure:
List of Plants, Incoming Letters, CAC
Numbers, and Testing Frequency

cc: Listserv

LETTER TO THOSE ON THE ATTACHED LIST DATED SEPTEMBER 26, 2018

SUBJECT: CLOSEOUT OF GENERIC LETTER 2016-01, "MONITORING OF NEUTRON-ABSORBING MATERIALS IN SPENT FUEL POOLS" (CAC NOS. MF9444, MF9445, MF9443, MF9440, AND MF9409; EPID L-2016-LRC-0001)

Donald C. Cook Nuclear Plant, Units 1 and 2

Indiana Michigan Power Company
Docket Nos. 50-315, 50-316
License Nos. DPR-58, DPR-74

Mr. Joel P. Gebbie
Senior Vice President and
Chief Nuclear Officer
Indiana Michigan Power Company
Nuclear Generation Group
One Cook Place
Bridgman, MI 49106

Waterford Steam Electric Station, Unit 3

Entergy Operations, Inc.
Docket No. 50-382
License No. NPF-38

Site Vice President
Entergy Operations, Inc.
Waterford Steam Electric Station, Unit 3
17265 River Road
Killona, LA 70057-3093

Davis-Besse Nuclear Power Station, Unit 1

FirstEnergy Nuclear Operating Company
Docket No. 50-346
License No. NPF-3

Mr. Mark Bezilla ~~Mr. Brian D. Boles~~
Site Vice President
FirstEnergy Nuclear Operating Company
Davis-Besse Nuclear Power Station
5501 North State Route 2
Oak Harbor, OH 43449-9760

James A. FitzPatrick Nuclear Power Plant

Exelon FitzPatrick, LLC and
Exelon Generation Company, LLC
Docket No. 50-333
License No. DPR-59

Mr. Bryan C. Hanson
Senior Vice President
Exelon Generation Company, LLC
President and Chief Nuclear Officer
Exelon Nuclear
4300 Winfield Road
Warrenville, IL 60555

LIST OF PLANTS, INCOMING LETTERS, CAC NUMBERS, AND TESTING FREQUENCY

The licensees listed in the table below have provided an adequate description of an effective monitoring program, as part of their listed response to Generic Letter (GL) 2016-01, "Monitoring of Neutron-Absorbing Materials in Spent Fuel Pools." All monitoring programs include the following key features:

- Neutron attenuation testing of coupons or in-situ material.
- Established processes to ensure that the licensee will take the appropriate corrective actions if any potentially non-conforming material is discovered.
- A testing frequency not to exceed the time period(s) listed in the table below.
- Acceptance criteria to ensure maintenance of the 5-percent subcriticality margin for the spent fuel pool.

Plant	Incoming Letter Date/ ADAMS Accession No.	Neutron-Absorbing Material	CAC Nos.	Testing Frequency
Donald C. Cook Nuclear Plant, Units 1 and 2	10/31/2016 (ML16307A118) 5/25/2018 (ML18150A313)	Boral	MF9444; MF9445	Every 5 years
Davis-Besse Nuclear Power Station, Unit 1	11/1/2016 (ML16307A074) 5/25/2018 (ML18145A039)	Boral	MF9443	Every 10 years
James A. FitzPatrick Nuclear Power Plant	11/3/2016 (ML16308A461) 1/25/2018 (ML18025A799) 5/29/2018 (ML18149A557)	Boral	MF9440	Every 10 years
Waterford Steam Electric Station, Unit 3	11/2/2016 (ML16307A275) 5/30/2018 (ML18151A858)	Boral	MF9409	Every 10 years

The NRC staff found that each licensee intends to continue monitoring the condition of its NAMs as described in its response.

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ADAMS Accession No. ML18249A392

***via email**

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