



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

April 13, 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. MF9417, MF9420, MF9426, MF9439, MF9442, MF9446, MF9447, MF9453, MF9454, AND MF9455; 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.

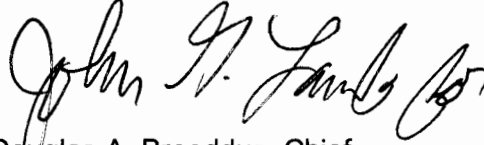
The generic letter requested that licensees provide information to allow the NRC staff to verify continued compliance through effective monitoring to identify and mitigate any degradation or deformation of NAMs credited for criticality control in spent fuel pools.

The Enclosure provides a list of GL 2016-01 responses where the licensee provided a response to the generic letter consistent with the level of detail described in Appendix A to GL 2016-01. The NRC staff has completed its review of the responses associated with GL 2016-01 for the plants referenced in the Enclosure, any documents referenced therein, and other applicable licensing basis documents. The NRC staff's review determined that the licensees listed in the Enclosure credit NAMs for criticality control and have established NAM monitoring programs.

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. Additionally, the NRC staff understands that the licensees intend to continue monitoring the condition of their NAMs as described in the responses listed in the

Enclosure. Based on the review of the information provided, the NRC staff concludes no further information or action is requested regarding GL 2016-01 for those plants listed in the Enclosure.

Sincerely,

A handwritten signature in black ink, appearing to read "John G. Lamb", is written over the typed name of Douglas A. Broaddus.

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

Docket Nos. 50-244, 50-255, 50-259,
50-260, 50-296, 50-298, 50-331,
50-395, 50-397, and 50-443

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

cc: ListServ

LETTER TO THOSE ON THE ATTACHED LIST DATED APRIL 13, 2018

SUBJECT: CLOSEOUT OF GENERIC LETTER 2016-01, "MONITORING OF NEUTRON-ABSORBING MATERIALS IN SPENT FUEL POOLS" (CAC NOS. MF9417, MF9420, MF9426, MF9439, MF9442, MF9446, MF9447, MF9453, MF9454, AND MF9455; EPID L-2016-LRC-0001)

Browns Ferry Nuclear Plant, Units 1, 2, and 3
Tennessee Valley Authority
Docket Nos. 50-259, 50-260, 50-296
License Nos. DPR-33, DPR-52, DPR-68

Mr. Joseph W. Shea
Vice President, Regulatory Affairs
and Support Services
Tennessee Valley Authority
1101 Market Street, LP 4A
Chattanooga, TN 37402-2801

Columbia Generating Station
Energy Northwest
Docket No. 50-397
License No. NPF-21

Mr. Mark E. Reddemann
Chief Executive Officer
Energy Northwest
MD 1023
76 North Power Plant Loop
P.O. Box 968
Richland, WA 99352

Cooper Nuclear Station
Nebraska Public Power District
Docket No. 50-298
License No. DPR-46

Mr. John Dent, Jr.
Vice President-Nuclear and CNO
Nebraska Public Power District
Cooper Nuclear Station
72676 648A Avenue
Brownville, NE 68321

Duane Arnold Energy Center
NextEra Energy Duane Arnold, LLC
Docket No. 50-331
License No. DPR-49

Mr. Dean Curtland, Site Director
Next Era Energy
Duane Arnold Energy Center
3277 DAEC Road
Palo, IA 52324-9785

R. E. Ginna Nuclear Power Plant
Exelon Generation Company, LLC
Docket No. 50-244
License No. DPR-18

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

Palisades Nuclear Plant
Entergy Nuclear Operations, Inc.
Docket No. 50-255
License No. DPR-20

Vice President, Operations
Entergy Nuclear Operations, Inc.
Palisades Nuclear Plant
27780 Blue Star Memorial Highway
Covert, MI 49043-9530

Seabrook Station, Unit 1
NextEra Energy Seabrook, LLC
Docket No. 50-443
License No. NPF-86

Mr. Mano Nazar
President and Chief Nuclear Officer
Nuclear Division
NextEra Energy Seabrook, LLC
Mail Stop: EX/JB
700 Universe Blvd.
Juno Beach, FL 33408

Virgil C. Summer Nuclear Station, Unit 1
South Carolina Electric & Gas Company
Docket No. 50-395
License No. NPR-12

Mr. George Lippard III, Vice President
Nuclear Operations
South Carolina Electric & Gas Company
Virgil C. Summer Nuclear Station
P.O. Box 88, Mail Code 800
Jenkinsville, SC 29065

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 neutron attenuation testing.
- 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.

In addition, the licensees marked with an asterisk in the table below have provided information demonstrating that the amount of Boral deformation resulting from blistering or bulging that can be accommodated by the assumptions and margin to the regulatory limit in their nuclear criticality safety analysis of record is greater than that which has been identified in their relevant operating experience to date. The remaining licensees listed in this table, as of the time of the response to GL 2016-01, have not recorded plant-specific operating experience in their GL 2016-01 responses that shows Boral deformation or degradation due to blistering or bulging.

Plant	Incoming Letter Date/ ADAMS Accession No.	Neutron-Absorbing Material	CAC Nos.	Testing Frequency
Browns Ferry Nuclear Plant, Units 1, 2, and 3	12/19/2016 (ML16354B569)	Boral*	MF9453; MF9454; MF9455	Every 10 years
Columbia Generating Station	9/1/2016 (ML16245A899); 5/2/2017 (ML17122A233)	Tetrabor	MF9447	Every 4 years (coupons); Every 10 years (in-situ)
Cooper Nuclear Station	10/27/2016 (ML16326A334)	Boral* Metamic	MF9446	Every 8 years (Boral); Every 4-8 years (Metamic)
Duane Arnold Energy Center	11/3/2016 (ML16312A050)	Boral (PaR)* Boral (Holtec)	MF9442	Every 10 years (PaR racks); Every 6 years (Holtec racks)
R. E. Ginna Nuclear Power Plant	11/3/2016 (ML16308A470)	Borated stainless steel	MF9439	Every third refueling cycle (~54 months)
Palisades Nuclear Plant	10/25/2016 (ML16299A164)	Metamic	MF9426	Every 3 to 9 years (based on schedule)
Seabrook Station, Unit 1	11/3/2016 (ML16312A050)	Boral*	MF9420	Every cycle (18 months)
Virgil C. Summer Nuclear Station, Unit 1	11/3/2016 (ML16312A177)	Boral	MF9417	Every 10 years

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RidsNrrLABClayton Resource

RidsNrrLAIBetts Resource

RidsNrrLAJBurkhardt Resource

RidsNrrLAKGoldstein Resource

RidsNrrLALRonewicz Resource

RidsNrrLAPBlechman Resource

RidsNrrLASRohrer Resource

RidsNrrPMBrownsFerry Resource

RidsNrrPMColumbia Resource

RidsNrrPMCooper Resource

RidsNrrPMDuaneArnold Resource

RidsNrrPMPalisades Resource

RidsNrrPMREGinna Resource

RidsNrrPMSeabrook Resource

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TMensah, NRR

SWall, NRR

SKrepel, NRR

ADAMS Accession No. ML18030B238

***via email**

OFFICE	NRR/DORL/LSPB/PM	NRR/DORL/LSPB/LA	NRR/DMLR/MCCB/BC*
NAME	SWall	JBurkhardt	SBloom
DATE	2/14/2018	2/14/2018	4/10/2018
OFFICE	NRR/DLP/IRGB/BC*	NRR/DSS/SNPB/BC(A)*	NRR/DORL/LSPB/BC
NAME	HChernoff	SAnderson	DBroaddus
DATE	4/5/2018	4/5/2018	4/13/2018

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