UNITED STATES
NUCLEAR REGULATORY COMMISSION
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September 26, 2018

OMB Control No. 3150-0231

Mr. Brian R. Sullivan
Site Vice President
Entergy Nuclear Operations, Inc.
Pilgrim Nuclear Power Station
600 Rocky Hill Road
Plymouth, MA 02360-5508

SUBJECT: PILGRIM NUCLEAR POWER STATION – CLOSEOUT OF GENERIC LETTER 2016-01, "MONITORING OF NEUTRON-ABSORBING MATERIALS IN SPENT FUEL POOLS" (CAC NO. MF9424; EPID L-2016-LRC-0001)

Dear Mr. Sullivan:

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).

By letter dated November 3, 2016 (ADAMS Accession No. ML16319A131), as supplemented by letter dated February 8, 2018 (ADAMS Accession No. ML18039A843), Entergy Nuclear Operations, Inc. (the licensee), responded to GL 2016-01 for Pilgrim Nuclear Power Station (PNPS). In the licensee's response to GL 2016-01, as supplemented, the licensee stated that for PNPS, the licensee credits Boral and Metamic for criticality control and has an established NAM monitoring program. The NRC staff's review determined that the provided response sufficiently addressed the five areas of information described in Appendix A of GL 2016-01 for Boral and Metamic. In particular, the described monitoring program for the Boral and Metamic includes the following key features:

- Neutron attenuation testing of coupons.
- 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 10 years for Boral and 10 years for Metamic.

- Acceptance criteria to ensure maintenance of the 5-percent subcriticality margin for the SFP.

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

In the licensee's response to GL 2016-01, as supplemented, the licensee also identified that 2016 testing on the Boraflex installed in the SFP at PNPS showed that some of the Boraflex was no longer bounded by the nuclear criticality safety analysis of record. This resulted in the licensee implementing corrective actions to manage Boraflex degradation and maintain subcriticality in the SFP. The NRC staff performed an inspection through the baseline reactor oversight process to ensure that the licensee is properly managing the degradation and maintaining the subcriticality of the SFP, with an additional follow-up inspection. The most recent findings are documented in Integrated Inspection Report 05000293/2017004 dated February 14, 2018 (ADAMS Accession No. ML18045A058). The NRC staff found the interim corrective actions taken by the licensee to be adequate; however, the licensee identified a non-conservative technical specification which will be resolved per Administrative Letter 98-10, "Dispositioning of Technical Specifications That Are Insufficient to Assure Plant Safety," dated December 29, 1998 (ADAMS Accession No. ML031110108). As a result, Licensee Event Report (LER) 2016-003, which documents the issue, will remain open until the licensee fully resolves the non-conformance. The NRC staff will perform follow-up inspections, if necessary, to ensure timely resolution of the non-conservative technical specifications.

Based upon the information submitted by the licensee in response to GL 2016-01, the NRC staff has determined that the submission addresses the information requested in GL 2016-01, and no further information is requested regarding this matter. If necessary, the NRC staff will perform a Boraflex-specific follow-up inspection, through the baseline reactor oversight process to ensure that the licensee is properly managing the degradation and maintaining the subcriticality of the SFP. Any safety or timeliness issues associated with the degraded condition of the Boraflex will be addressed through NRC inspection activities consistent with Inspection Manual Chapter (IMC) 0326, "Operability Determinations & Functionality Assessments for Conditions Adverse to Quality or Safety," and, as needed, IMC 2561, "Decommissioning Power Reactor Inspection Program."

Sincerely,

/Douglas A. Broaddus/

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

Docket No. 50-293

cc: Listserv

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ADAMS Accession No.: ML18249A162 ***via email**

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