



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

October 31, 2019

Mr. W. Anthony Nowinowski  
Executive Director  
PWR Owners Group,  
Program Management Office  
Westinghouse Electric Company  
1000 Westinghouse Drive, Suite 380  
Cranberry Township, PA 16066

**SUBJECT: FINAL SAFETY EVALUATION FOR PRESSURIZED WATER REACTOR OWNERS GROUP TOPICAL REPORT PWROG-16043-P, REVISION 2, "PWROG PROGRAM TO ADDRESS U. S. NUCLEAR REGULATORY COMMISSION INFORMATION NOTICE 2012-09: 'IRRADIATION EFFECTS ON FUEL ASSEMBLY SPACER GRID CRUSH STRENGTH' FOR WESTINGHOUSE AND CE PWR FUEL DESIGNS" (EPID: L-2018-TOP-0021)**

Dear Mr. Nowinowski:

By letter dated February 1, 2017 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML17039B050), the Pressurized Water Reactor (PWR) Owners Group (PWROG or the applicant), submitted to the U.S. Nuclear Regulatory Commission (NRC) staff for review licensing topical report (TR) PWROG-16043-P, Revision 2, "PWROG Program to Address NRC Information Notice 2012-09: 'Irradiation Effects on Fuel Assembly Spacer Grid Crush Strength' for Westinghouse and CE [Combustion Engineering] PWR [pressurized water reactor] Fuel Designs" ((ADAMS Package Accession No. ML17039B061), henceforth referred to as the TR). Subsequent letters dated March 27, 2018, May 15, 2018, and May 15, 2018 (ADAMS Accession Nos. ML18100A053, ML18143B462, and ML18144A760, respectively), provided additional information that supplemented the information provided in the February 1, 2017, submittal.

The NRC staff review determined that the information provided in the TR and responses to NRC staff requests for additional information adequately demonstrates that the proposed methodologies to address end-of-life (EOL) effects on spacer grids and to recover margin through credit for flowing water damping are acceptable for use, subject to the limitations and conditions contained in the enclosed draft safety evaluation (SE), with existing methodologies that the NRC has previously found to be acceptable for analysis of fuel assembly structural behavior during seismic and loss-of-coolant-accident events.

**NOTICE: The enclosure transmitted herewith contains Proprietary Information. When separated from the enclosure, this transmittal document is decontrolled.**

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By letter dated August 22, 2018 (ADAMS Accession No. ML18186A625), the NRC staff provided the draft SE to the PWROG for review and comment. Per email correspondence on January 16, 2019 (ADAMS Accession No. ML19203A418), the PWROG provided comments to the NRC staff. Per email correspondence on April 5, 2019, the NRC staff provided a revised draft SE to the PWROG for review and comment. Per email and its enclosure dated May 14, 2019, and May 16, 2019, the PWROG provided comments to the NRC staff. The NRC staff disposition tables for the draft SE comments can be found in ADAMS Accession Nos. ML19071A239 and ML19242B646, respectively.

In accordance with the guidance provided on the NRC website, we request that the PWROG publish an approved version of PWROG-16043-P, Revision 2 within three months of receipt of this letter. The approved versions shall incorporate this letter and the enclosed final SE after the title page. For -NP versions, the PWROG shall strike the proprietary information markings in this letter and make the appropriate redactions and adjustments to document security classifications to the attached SE. Also, it must contain historical review information, including NRC requests for additional information (RAIs) and your responses. The approved version shall include an “-A” (designating approved) following the TR identification symbol. As an alternative to including the RAIs and RAI responses behind the title page, if changes to the TR were provided to the NRC staff to support the resolution of RAI responses, and if the NRC staff reviewed and approved those changes as described in the RAI responses, there are two ways that the accepted version can capture the RAIs:

1. The RAIs and RAI responses can be included as an appendix to the accepted version.
2. The RAIs and RAI responses can be captured in the form of a table (inserted after the final SE) which summarizes the changes as shown in the approved version of the TR. The table should reference the specific RAIs and RAI responses which resulted in any changes, as shown in the accepted version of the TR.

If future changes to the NRC’s regulatory requirements affect the acceptability of this TR, The PWROG will be expected to revise the TR appropriately or justify their continued applicability for subsequent referencing. Licensees referencing this TR would be expected to justify their continued applicability or evaluate their plant using the revised TR.

If you have any questions, please contact Jason Drake at 301-415-8378.

Sincerely,

*/RA/*

Dennis C. Morey, Chief  
Licensing Processes Branch  
Division of Licensing Project  
Office of Nuclear Reactor Regulation

Docket No. 99902037

Enclosure:  
Final SE (Proprietary)

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**ADAMS Accession Nos.:**

**ML19302H038 -Package**

**ML19242B695 -Cover Letter**

**ML19242B646 Disposition Table**

**ML19302F448 -Final SE Enclosure**

**\*concurrence via email**

**NRR-106**

OFFICE	NRR/DORL/LLPB/PM	NRR/DORL/LLPB/LA	NRR/DSS/SNPB*	NRR/DORL/LLPB
NAME	JDrake*	DHarrison	RLukes	DMorey
DATE	10/29/2019	10/30 /2019	10/30 /2019	10/31/2019

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