



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

February 8, 2016

Mr. Richard Michael Glover  
Site Vice President  
H. B. Robinson Steam Electric Plant  
Duke Energy  
3581 West Entrance Road, RNPA01  
Hartsville, SC 29550

SUBJECT: H. B. ROBINSON STEAM ELECTRIC PLANT UNIT NO. 2 – REQUEST FOR  
ADDITIONAL INFORMATION RELATED TO THE PRESSURIZED WATER  
REACTORS INTERNALS PROGRAM PLAN FOR AGING MANAGEMENT OF  
REACTOR INTERNALS (CAC NO. ME9633)

Dear Mr. Glover:

By letter dated September 26, 2012 (Agencywide Documents Access and Management System (ADAMS) Package Accession No. ML122780489), Duke Energy Progress, Inc. (previously known as Carolina Power & Light Company), the licensee, for H. B. Robinson Steam Electric Plant Unit No. 2 (Robinson), submitted an aging management program (AMP) for the reactor vessel internals. The licensee used the Materials Reliability Program (MRP)-227-A report, "Pressurized Water Reactor Internals Inspection and Evaluation Guidelines" (ADAMS Package Accession No. ML120170453), and its supporting reports as technical bases for developing the Robinson AMP. MRP-227-A includes the U.S. Nuclear Regulatory Commission (NRC) final safety evaluation (SE), which documents the NRC staff's review and was issued on December 16, 2011 (ADAMS Accession No. ML11308A770).

The NRC staff reviewed the licensee's submittal and determined that additional information was needed in order to complete its review. By correspondence dated March 27, 2013; January 8, 2014; April 24, 2014; and June 16, 2014 (ADAMS Accession Nos. ML13079A293, ML14016A279, ML14115A440, and ML14167A345, respectively), the NRC staff issued requests for additional information (RAIs) related to Action Item 7 of the NRC's staff SE for MRP-227-A. By letters dated May 23, 2013, and February 19, 2014 (ADAMS Accession Nos. ML13156A144 and ML14056A193, respectively), the licensee provided associated RAI responses.

The NRC staff has determined additional information is needed to complete its review of Action Item 7. The enclosed RAIs were e-mailed to the licensee in draft form on December 17, 2015 (ADAMS Accession No. ML15352A004). RAI clarification calls were held on January 6, 2016, and January 14, 2016. On the January 14, 2016, call, the licensee agreed to provide the RAI responses by February 19, 2016. The NRC staff agreed with these dates.

R. Glover

- 2 -

If you have any questions, please contact me at 301-415-2760 or [Martha.Barillas@nrc.gov](mailto:Martha.Barillas@nrc.gov).

Sincerely,



Martha Barillas, Project Manager  
Plant Licensing Branch II-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-261

Enclosure:  
Request for Additional Information

cc w/enclosure: Distribution via Listserv

REQUEST FOR ADDITIONAL INFORMATION  
REGARDING THE AGING MANAGEMENT PROGRAM FOR THE  
REACTOR VESSEL INTERNALS AT THE  
H. B. ROBINSON STEAM ELECTRIC PLANT UNIT NO. 2  
DUKE ENERGY PROGRESS, INC.  
DOCKET NUMBER 50-261

By correspondence dated April 24, 2014 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML14115A440), the U.S. Nuclear Regulatory Commission (NRC) staff issued a followup request for additional information (RAI), RAI-5(b)-1-1, as part of its review of the aging management program (AMP) for reactor vessel internals (RVI) at the H. B. Robinson Steam Electric Plant Unit No. 2 (Robinson).

RAI-5(b)-1-1 is in reference to the AMP related to the Robinson cast austenitic stainless steel (CASS) lower support columns (LSC) in the reactor vessel. By correspondence dated June 16, 2014 (ADAMS Accession No. ML14167A345), the NRC staff informed the licensee that it could defer answering RAI-5(b)-1-1, since the NRC staff and industry were working on new screening criteria for the RVI CASS materials. In a letter dated March 13, 2015, Pressurized-Water Reactor Owners Group (PWROG), submitted a proprietary document, PWROG-14048-P, Revision 0, "Functionality Analysis: Lower Support Columns," to the staff for information. The NRC staff has assessed the report by memorandum dated December 17, 2015 (ADAMS Accession No. ML15334A462).

To address Action Item 7 from the NRC final safety evaluation (SE) (ADAMS Accession No. ML11308A770) of the Materials Reliability Program (MRP)-227-A report, "Pressurized Water Reactor Internals Inspection and Evaluation Guidelines" (ADAMS Accession No. ML120170453) in reference to the functionality of the LSCs, the licensee may use PWROG-14048-P as assessed by the NRC staff or propose an alternative approach as requested below. This request supersedes RAI-5(b)-1-1 discussed in the April 24, 2014 and June 16, 2014 correspondence.

**RAI-5(b)-1-2:**

**Action Item 7 addressed based on PWROG-14048-P**

The NRC staff has determined that the flaw tolerance analysis contained in report PWROG-14048-P utilized conservative assumptions to demonstrate that the likelihood of failure of the LSCs is low during the period of extended operation (PEO). It is reasonable to infer that the functionality of the LSCs will be maintained during the PEO if the likelihood of failure of the LSCs is shown to be low. Therefore, the staff requests the licensee to demonstrate how the flaw tolerance analysis in PWROG-14048-P is applicable to the Robinson LSCs using plant-specific parameters (such as LSC geometry and number of LSCs) and conditions (such as loading conditions and LSC stresses).

Enclosure

Action Item 7 addressed based on alternative approach

If the licensee determines that PWROG-14048-P is not applicable to the Robinson LSCs or chooses not to apply it, the staff requests that the licensee identify its approach to demonstrating that the functionality of the LSCs will be maintained during the PEO.

**RAI-6:**

In Section 6.2.5, "SE Applicant/Licensee Action Item 5: Application of Physical Measurements as part of I&E [Inspection and Evaluation] Guidelines for B&W [Babcox and Wilcox], CE [Combustion Engineering], and Westinghouse RVI Components," of WCAP-17077-NP, Revision 1, "PWR Vessel Internals Program Plan for Aging Management of Reactor Internals at Robinson Nuclear Plant" (ADAMS Accession No. ML12278A399), the licensee describes actions to address Action Item 5 from the NRC final SE for the MRP-227-A report. The actions include plans to replace the hold down spring instead of performing MRP-227-A inspections/physical measurements at Robinson. Confirm that the hold down spring has been replaced at Robinson and identify the materials used.

R. Glover

- 2 -

If you have any questions, please contact me at 301-415-2760 or [Martha.Barillas@nrc.gov](mailto:Martha.Barillas@nrc.gov).

Sincerely,

*/RA/*

Martha Barillas, Project Manager  
Plant Licensing Branch II-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-261

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Request for Additional Information

cc w/enclosure: Distribution via Listserv

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**ADAMS Accession No.: ML16019A053**

*\*by e-mail*

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DATE	12/17/2015	2/08/2016	2/08/2016

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