



*R. Michael Glover  
H. B. Robinson Steam  
Electric Plant Unit 2  
Site Vice President*

*Duke Energy Progress  
3581 West Entrance Road  
Hartsville, SC 29550*

*O: 843 857 1701  
F: 843 857 1319*

*Mike.Glover@duke-energy.com*

10 CFR 54.21

Serial: RNP-RA/16-0011

FEB 18 2016

United States Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, DC 20555-0001

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2  
DOCKET NO. 50-261/RENEWED LICENSE NO. DPR-23

**RESPONSE TO NRC REQUEST FOR ADDITIONAL INFORMATION RELATED TO  
THE PRESSURIZED WATER REACTOR INTERNALS PROGRAM PLAN FOR AGING  
MANAGEMENT OF REACTOR INTERNALS (TAC NO. ME9633)**

Ladies and Gentlemen:

By letter dated February 08, 2016 (ADAMS Accession Number: ML16019A053), the NRC requested that Duke Energy Progress, Inc., respond to a request for additional information (RAI) regarding the Aging Management Program for the Reactor Vessel Internals at H. B. Robinson Steam Electric Plant (HBRSEP), Unit No. 2.

The Duke Energy Progress response to this request (RAI-5(b)-1-2 and RAI-6) is provided in Enclosures 1, 2 and 3 to this letter. Response to RAI-5(b)-1-2, is contained in Enclosures 1 and 2. Enclosure 2, establishes a commitment related to the HBRSEP, Unit No. 2, Cast Austenitic Stainless Steel(CASS) Lower Support Columns (LSC) in the Reactor Vessel. Response to RAI-6, is provided in Enclosure 3, to this letter.

One regulatory commitment is made in this submittal (Enclosure 2). All other statements in this submittal are provided for information purposes and are not considered to be regulatory commitments.

It is noted, Robinson has completed all inspections required by ASME Section XI and MRP 227-A, which require removal of the Core Barrel. Indeed, no inspection that requires removal of the Core Barrel, prior to the calendar year 2019, is required by the stated governing consensus codes and standards. Hence, Robinson hereby confirms it is compliant with its Current Licensing Basis (CLB), as prescribed in the requirements and expectation of ASME Section XI and MRP 227-A.

If you have any questions regarding this submittal, please contact Mr. Scott Connelly, Manager (Acting) – Nuclear Regulatory Affairs, at (843) 857-1569.

A047  
NRR

I declare under penalty of perjury that the foregoing is true and correct.

Executed On: February 18, 2016

Sincerely,

A handwritten signature in cursive script that reads "R. Michael Glover". The signature is written in black ink and ends with a horizontal line.

R. Michael Glover  
Site Vice President

RMG/am

Enclosure 1: RESPONSE TO NRC REQUEST FOR ADDITIONAL INFORMATION RELATED TO THE PRESSURIZED WATER REACTORS INTERNALS PROGRAM PLAN FOR AGING MANAGEMENT OF REACTOR INTERNALS (RAI-5(b)-1-2)

Enclosure 2: REGULATORY COMMITMENT

Enclosure 3: RESPONSE TO NRC REQUEST FOR ADDITIONAL INFORMATION RELATED TO THE PRESSURIZED WATER REACTORS INTERNALS PROGRAM PLAN FOR AGING MANAGEMENT OF REACTOR INTERNALS (RAI-6)

cc: NRC Regional Administrator, NRC, Region II  
Ms. Martha Barillas, NRC Project Manager, NRR  
NRC Resident Inspector, HBRSEP Unit No. 2

United States Nuclear Regulatory Commission  
Enclosure 1 to Serial: RNP-RA/16-0011  
2 Pages (including cover page)

**RESPONSE TO NRC REQUEST FOR ADDITIONAL INFORMATION RELATED TO  
THE PRESSURIZED WATER REACTOR INTERNALS PROGRAM PLAN FOR AGING  
MANAGEMENT OF REACTOR INTERNALS (TAC NO. ME9633)**

**DOCKET NO. 50-261**

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

NRC REQUEST FOR ADDITIONAL INFORMATION (RAI)

By letter to the U.S. Nuclear Regulatory Commission (NRC) dated September 26, 2012, (Agencywide Documents Access and Management System (ADAMS) Accession No. ML12278A398), Duke Energy Progress, Inc., formerly known as Carolina Power and Light Company, submitted an aging management program for the reactor vessel internals for H. B. Robinson Steam Electric Plant (HBRSEP), Unit No.2. The NRC staff has been reviewing the submittal and has determined that additional information is needed to complete its review.

**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).

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.

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

Duke Energy Progress, Inc., is an active participant in a Pressurized Water Reactor Owners Group (PWROG) program to address lower support column (LSC) functionality analysis on a generic basis. The final phase of this program, currently in process, uses the methodology documented in PWROG-14048-P and is intended to provide justification of plant-specific applicability for all participating plants. This phase also considers the conclusions documented in the NRC Staff Assessment of PWROG-14048-P (ADAMS Accession No. ML15334A462). Upon completion of this final phase of the program, a revision to PWROG-14048-P will be submitted to the NRC Staff, currently scheduled to be submitted by June 30, 2017. This program will consider H.B. Robinson specific parameters and will provide the applicability justification necessary to address RAI-5(b)-1-2. Duke Energy Progress, Inc., H. B. Robinson Steam Electric Plant, Unit No. 2 (HBRSEP2), hereby commits (Enclosure 2) to submit the final phase revision of PWROG-14048-P, which accounts for H.B. Robinson specific parameters and operating conditions and includes the corresponding applicability justification.

United States Nuclear Regulatory Commission  
Enclosure 2 to Serial: RNP-RA/16-0011  
2 Pages (including cover page)

## **REGULATORY COMMITMENT**

REGULATORY COMMITMENT

The following table identifies the action committed to by H. B. Robinson Steam Electric Plant (HBRSEP), Unit No. 2, in this submittal. All other statements in this submittal are provided for information purposes and are not considered to be regulatory commitments.

	COMMITMENT	TYPE (Check One)		SCHEDULED COMPLETION DATE/EVENT
		ONE- TIME ACTION	CONTINUING COMPLIANCE	
1	<p>Robinson will submit a copy of the Technical Report associated with tasks related to PWROG PA-MSC-1103, Revision 2, to the NRC by June 30, 2017.</p> <p>The stated Technical Report will contain RNP applicable flaw tolerance analysis developed based upon PWROG-14048-P, as reflected in RAI-5(b)-1-2, of the NRC Letter, dated February 08, 2016 (ADAMS Accession Number: ML16019A053).</p> <p>In particular, this Technical Report will address Action Item 7 from the NRC final safety evaluation (SE) (ADAMS Accession No. ML 11308A770) of the Materials Reliability Program (MRP)-227-A report, "Pressurized Water Reactor Internals Inspection and Evaluation Guidelines" (ADAMS Accession No. ML 120170453) in reference to the functionality of the Lower Support Columns.</p>	X		June 30, 2017

United States Nuclear Regulatory Commission  
Enclosure 3 to Serial: RNP-RA/16-0011  
2 Pages (including cover page)

**RESPONSE TO NRC REQUEST FOR ADDITIONAL INFORMATION RELATED TO  
THE PRESSURIZED WATER REACTOR INTERNALS PROGRAM PLAN FOR AGING  
MANAGEMENT OF REACTOR INTERNALS (TAC NO. ME9633)  
DOCKET NO. 50-261**

**(RAI-6)**



NRC REQUEST FOR ADDITIONAL INFORMATION (RAI)

By letter to the U.S. Nuclear Regulatory Commission (NRC) dated September 26, 2012, (Agencywide Documents Access and Management System (ADAMS) Accession No. ML 12278A398), Duke Energy Progress, Inc., formerly known as Carolina Power and Light Company, submitted an aging management program for the reactor vessel internals for H. B. Robinson Steam Electric Plant (HBRSEP), Unit No.2. The NRC staff has been reviewing the submittal and has determined that additional information is needed to complete its review.

**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. ML 12278A399), 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.

**Response to RAI-6:**

Consistent with the actions that were described to address Action Item 5 from the NRC final SE for the MRP-227-A report, Robinson replaced the original Type 304 Stainless Steel hold down spring with a hold down spring fabricated from a modified Type 403 Stainless Steel, which meets and exceeds the requirements from the original code of construction. In particular, the modified Type 403 Stainless Steel is more resistant to stress relaxation and creep than the original Type 304 material. Although in Table 7-1 of the RNP aging management program plan for the reactor vessel internals (ADAMS Accession No. ML 12278A398), Robinson had stated that it tentatively planned (footnote - Note 1) to do a preemptive replacement of the hold down spring in the Fall of 2013 (during Refueling Outage 28), the replacement occurred in the Spring of 2015 (during Refueling Outage 29). It is noted, the revised replacement schedule did not adversely impact the integrity of the core support structures because it occurred in accordance with the requirements and expectation prescribed in MRP-227-A. Namely, the replacement occurred within the timeframe specified in MRP-227-A, which is within three cycles of the beginning of the license renewal period. Hence, Robinson hereby confirms that it is compliant with its Current Licensing Basis (CLB). As it was stated earlier, Robinson replaced its 304 Stainless Steel hold down spring with that of the modified Type 403 Stainless Steel hold down spring in the Spring of 2015.