



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

June 11, 2012

Mr. Chris Burton, Vice President
Shearon Harris Nuclear Power Plant
Progress Energy Carolinas, Inc.
Post Office Box 165, Mail Code: Zone 1
New Hill, North Carolina 27562-0165

SUBJECT: SHEARON HARRIS NUCLEAR POWER PLANT, UNIT 1 – CORRECTION TO
ISSUANCE OF AMENDMENT NO. 139 RE: MEASUREMENT UNCERTAINTY
RECAPTURE POWER UPRATE (TAC NO. ME6169)

Dear Mr. Burton:

By letter dated May 30, 2012,¹ the U.S. Nuclear Regulatory Commission (NRC) issued Amendment No. 139 to Renewed Facility Operating License No. NPF-63 for the Shearon Harris Nuclear Power Plant, Unit 1 (HNP). The amendment was issued in response to an application submitted by Carolina Power & Light, dated April 28, 2011,² as supplemented.³

The amendment revised the HNP renewed facility operating license and certain Technical Specifications (TSs) to implement an increase of approximately 1.66 percent in rated thermal power from the current licensed thermal power of 2900 megawatts thermal (MWt) to 2948 MWt. The changes are based on increased feedwater flow measurement accuracy, which will be achieved by utilizing the Cameron International Corporation (formerly Caldon) Cameron Leading Edge Flow Meter CheckPlus system to improve the HNP calorimetric heat balance measurement accuracy.

By letter dated June 5, 2012,⁴ the licensee indicated that administrative errors in information submitted in support of Amendment No. 139 were reflected in the contents of TS page 2-2 and page 67 of the May 30, 2012, NRC safety evaluation (SE). Subsequently transcription errors were also identified on page 67 of the SE.

Currently the title of Figure 2.1-1 on TS page 2-2 reads: *REACTOR CORE SAFETY LIMITS - THREE LOOPS IN OPERATION WITH MEASURED RCS FLOW $\geq [293,540 \text{ GPM} \times (1.0 + C1)]$* . It should read ">" (greater than) instead of " \geq " (greater than or equal to).

Table 6, "Technical Specification Figure 2.1-1" of page 67 of the SE, incorrectly correlates the highest pressure data set to a value of 2375 pounds per square inch gauge (psig). Consistent

1 Agencywide Documents Access and Management System (ADAMS) Accession No. ML11356A096,
2 ADAMS Accession No. ML11124A180,
3 June 23, 2011 (ML11179A052); August 3, 2011 (ML11221A185); August 15, 2011 (ML11235A516);
August 25, 2011 (ML11243A121); August 30, 2011 (ML11250A097); August 31, 2011 (ML11255A132);
September 6, 2011 (ML11256A026); September 7, 2011 (ML11256A029); October 20, 2011
(ML11299A023); October 21, 2011 (ML11300A183); October 28, 2011 (ML11308A028); November 28, 2011
(ML11340A078); December 20, 2011 (ML12010A079); February 9, 2012 (ML12052A253), and
March 26, 2012 (ML12100A160),
4 ADAMS Accession No. ML12158A144.

with Figure 2.1-1 on TS page 2-2, the correct value for that data set is 2385 psig.

Subsequently transcription errors were identified in Table 6 regarding the reactor coolant system (RCS) average temperature values for 2385 psig, 2235 psig, and 1960 psig. For 2385 psig with a fraction of rated power 0.96, the RCS average temperature should read 626.91 °F instead of 626.9 °F. For 2235 psig with a fraction of rated power 0, the RCS average temperature should read 645.25 °F instead of 645.26 °F. For 1960 psig with a fraction of rated power 0, the RCS average temperature should read 627 instead of 599.16 °F and for a fraction of rated power 1.2, the RCS average temperature should read 576.84 °F instead of 578.84 °F.

Please replace TS page 2-2 for Renewed Facility Operating License No. NPF-63 and page 67 of the May 30, 2012, SE issued with the enclosed corrected pages. These administrative errors did not impact the NRC staff conclusions related to Amendment No. 139 for HNP because the NRC staff's review was based on the correct values for TS page 2-2 and page 67 of the SE.

Should you have any questions regarding this matter, please call me at (301) 415-3302.

Sincerely,

Araceli T. Billoch Colón

Araceli T. Billoch Colón, Project Manager
Plant Licensing Branch II-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-400

Enclosures:

1. Corrected TS Page 2-2
2. Corrected SE Page 67

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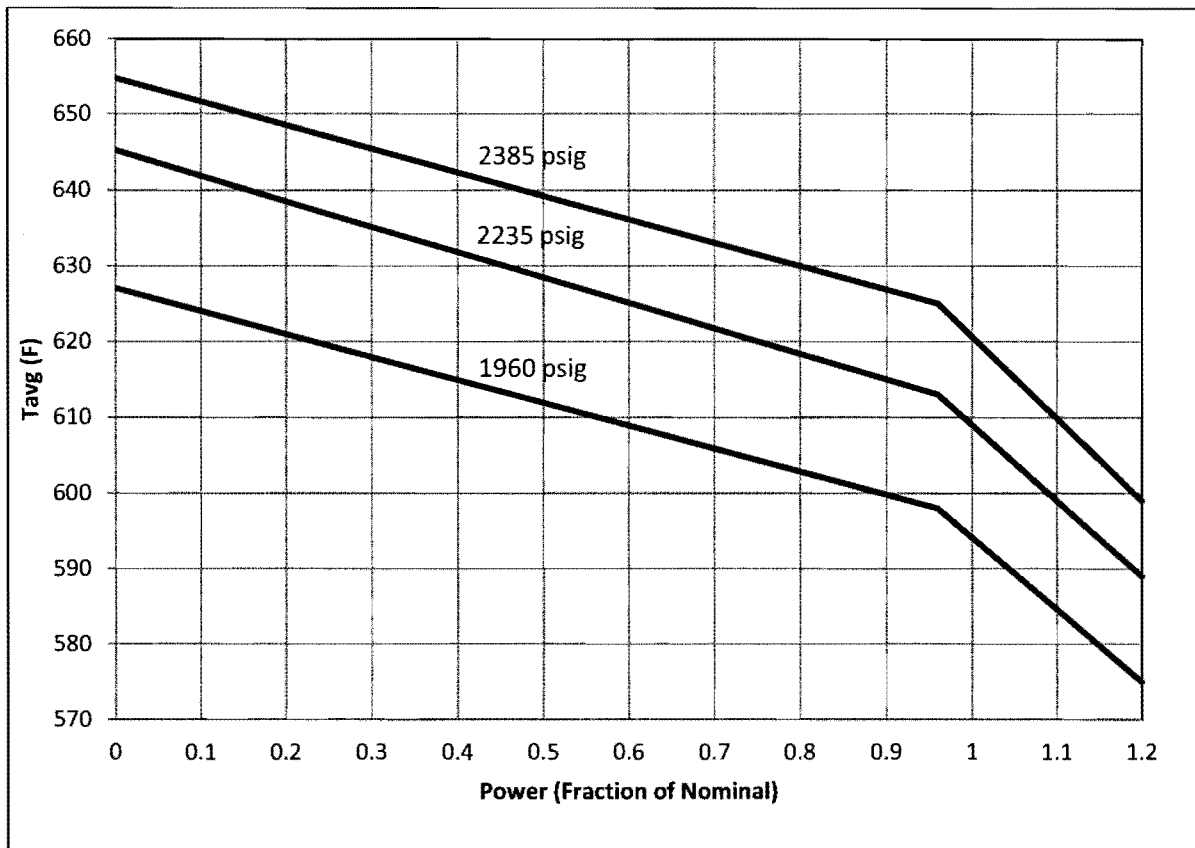


FIGURE 2.1-1
 REACTOR CORE SAFETY LIMITS – THREE LOOPS IN OPERATION
 WITH MEASURED RCS FLOW > [293,540 GPM X (1.0 + C₁)]

safety valves. The NRC staff finds the change to be conservative as lowering the maximum allowable power range neutron flux high setpoint at MUR conditions will allow the steam line safety valves to relieve pressure without challenging the system with increased steam flow caused by the higher power MUR conditions. A 50 percent of rated thermal power at MUR conditions produces more steam flow than 50 percent rated thermal power at current power levels. Lowering the setpoint will, therefore, lower the steam flow needed to be relieved at MUR conditions. Therefore, the NRC staff finds the proposed change acceptable.

Table 6: Technical Specification Figure 2.1-1

Pressure (psig)	Fraction of Rated Power	RCS T _{ave} (°F)	
		Current	Post-Uprate
2385	0	654.75	654.75
	0.96	626.91	625
	1.2	604.59	599
2235	0	645.25	645.25
	0.96	617.41	613
	1.2	595.09	589
1960	0	627	627
	0.96	599.16	598
	1.2	576.84	575

Based on the above discussion and the NRC staff's review of the licensee's LAR and RAI responses, the NRC staff found that the licensee provided sufficient justifications for the proposed TS changes. The NRC staff considers that the licensee has followed the guidance in Items A through C in Section VIII of Attachment 1 to RIS 2002-03 and has, therefore, met the regulatory requirements of 10 CFR Part 50, Appendix K.

3.10.4 Instrumentation and Controls Conclusion

The NRC staff reviewed the licensee's proposed plant-specific implementation of the FW flow measurement device and the power uncertainty calculations. Based on its review of the licensee's LAR, RAI responses, uncertainty calculations, and referenced Topical Reports, the NRC staff finds that the licensee's proposed amendment is consistent with the approved Topical Report ER-80P and its supplement Topical Report ER-157P Rev. 8, as well as with the guidance of RIS 2002-03 specific to this section of the SE. Therefore, the licensee's proposed amendment for NHP meets the relevant requirements of 10 CFR 50, Appendix K.

The NRC staff also finds that the licensee adequately accounted for all instrumentation uncertainties in the total thermal power measurement uncertainty calculations and demonstrated that the calculations meet the relevant requirements of 10 CFR Part 50, Appendix K and the guidance of RIS 2002-03.

C. Burton

- 2 -

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/RA/

Araceli T. Billoch Colón, Project Manager
Plant Licensing Branch II-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

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Enclosures:

1. Corrected TS Page 2-2
2. Corrected SE Page 67

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