NEXTera ENERGY
DUANE ARNOLD

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NG-12-0486
10 CFR 50.46(a)(3)(ii)

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

Duane Arnold Energy Center
Docket 50-331
Renewed Op. License No. DPR-49

10 CFR 50.46 30-Day Special Report of Changes in Peak Cladding Temperature for the Duane Arnold Energy Center

Reference: Letter from R. Anderson (NextEra Energy Duane Arnold) to USNRC, "10 CFR 50.46 Annual Report of Changes in Peak Cladding Temperature for the Duane Arnold Energy Center," NG-12-0384, dated September 28, 2012 (ML12272A357)

In accordance with 10 CFR 50.46(a)(3)(ii), NextEra Energy Duane Arnold, LLC (hereafter NextEra Energy Duane Arnold) hereby provides this 30-day special report regarding changes in the calculated peak cladding temperature (PCT) of the GE14 fuel design currently utilized at the Duane Arnold Energy Center (DAEC).

Subsequent to the referenced annual report, our fuel vendor, Global Nuclear Fuels (GNF), has notified NextEra Energy Duane Arnold of the potential impact of a change in the current Loss-of-Coolant Accident (LOCA) analysis methodology and its application to the GE14 fuel design currently utilized at the DAEC. Specifically, GNF has upgraded their fuel thermal-mechanical performance model from the GESTR-LOCA model to the PRIME model. Both GESTR-LOCA and PRIME are NRC-approved models for LOCA analysis.

Enclosed is a historical summary of previously reported errors, as well as the potential impact of this change in modeling on the GE14 fuel design. The LOCA analysis of record for the GNF2 fuel design, recently introduced into the DAEC, uses the PRIME model, as noted in the referenced report, and thus, is not impacted by this notice from GNF.

This change, when combined (sum of the absolute magnitudes) with all the applicable PCT changes previously reported for the GE14 fuel design, result in a cumulative PCT change for the DAEC of greater than the 50 °F reporting threshold under §50.46(a)(3)(i). Although this is defined as a "significant change" under §50.46, the actual impact on nuclear safety is negligible, as the DAEC has significant margin, over 500 °F, to the regulatory limit of 2200 °F PCT in §50.46(b)(1). Thus, a full re-analysis for the GE14 fuel design using the PRIME model is not currently scheduled for the DAEC, as the GESTR-LOCA model is still NRC approved and the impact of the change in modeling is small (10° F).

This letter contains no new commitments or changes to any previous commitments.

Please contact Mr. Tom Byrne of this office at (319) 851-7929, if you have any further questions regarding this matter.

Sincerely,

Richard L. Anderson
Vice President, Duane Arnold Energy Center
NextEra Energy Duane Arnold, LLC

Enclosure

**10 CFR 50.46 30-Day Report
for the DAEC**

GE14 Fuel

	Peak Cladding Temperature[1]
Last Acceptable Model Results[2]:	1510°F
Previously Reported Errors and Changes:	
2001 - 2011[3]:	+115°F
New Errors and Changes:	
Potential impact of conversion from GESTR-LOCA to PRIME fuel thermal-mechanical model.	10°F
Analysis of Record Results:	1635°F

(1) Licensing Basis PCT (LBPCT), as defined in NEDE-23785-1-P-A, "The GESTR-LOCA and SAFER Models for the Evaluation of the Loss-of-Coolant Accident: Volume III - SAFER/GESTR Application Methodology," February 1985.

(2) General Electric Report, "Safety Analysis Report for Duane Arnold Energy Center Extended Power Uprate," NEDC-32980P, Revision 1, April 2001.

(3) Evaluations of each reported error have concluded that re-analysis was not required.