



October 12, 2016

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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 Annual Report of Changes in Peak Cladding Temperature for the Duane Arnold Energy Center

Reference: Letter from T. A. Vehec (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-15-0293, dated September 23, 2015

In accordance with 10 CFR 50.46(a)(3)(ii), NextEra Energy Duane Arnold, LLC (hereafter NextEra Energy Duane Arnold) hereby provides the annual report regarding the changes in the calculated peak cladding temperature (PCT) of the GE14 and GNF2 fuel currently utilized at the Duane Arnold Energy Center (DAEC). This report covers the period from the last annual report (Reference 1) through August 31, 2016.

Our fuel vendor has notified NextEra Energy Duane Arnold that no changes or errors in the current Loss-of-Coolant Accident analysis methodology have occurred subsequent to the referenced report. Enclosed is a historical summary of previously reported errors.

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

T. A. Vehec
Vice President, Duane Arnold Energy Center
NextEra Energy Duane Arnold, LLC

Enclosures

CC: Administrator, Region III, USNRC
Project Manager, DAEC, USNRC
Senior Resident Inspector, DAEC, USNRC

A002
NRR

**10 CFR 50.46 ANNUAL REPORT
DAEC - 2016
GE14 Fuel**

Peak Cladding Temperature⁽¹⁾

Last Acceptable Model Results⁽²⁾: 1510°F

Previously Reported Errors and Changes:

2001 - 2015⁽³⁾: +135°F

New Errors and Changes: None

Analysis of Record Results: 1645°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.

**10 CFR 50.46 ANNUAL REPORT
DAEC - 2016
GNF2 Fuel**

Peak Cladding Temperature⁽¹⁾⁽²⁾

Last Acceptable Model Results⁽³⁾: 1730°F

Previously Reported Errors and Changes:

2012 - 2015⁽⁴⁾: +10°F

New Errors and Changes: None

Analysis of Record Results: 1740°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) Licensing Topical Report, Global Nuclear Fuel, "The PRIME Model for Analysis of Fuel Rod Thermal-Mechanical Performance", Technical Bases - NEDC-33256P-A, Qualification - NEDC-33257P-A, and Application Methodology - NEDC-33258P-A, September 2010.
- (3) General Electric-Hitachi (GEH) Engineering Report # 0000-0133-6901-R0, "Duane Arnold Energy Center GNF2 ECCS-LOCA Evaluation," August 2012.
- (4) Evaluations of each reported error have concluded that re-analysis was not required.