

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

September 12, 2016

Mr. Thomas A. Vehec Vice President NextEra Energy Duane Arnold Energy Center 3277 DAEC Road Palo, IA 52324-9785

# SUBJECT: DUANE ARNOLD ENERGY CENTER - ISSUANCE OF AMENDMENT TO REVISE TECHNICAL SPECIFICATION 2.1.1.2, SAFETY LIMIT MINIMUM CRITICAL POWER RATIO (CAC NO. MF7734)

Dear Mr. Vehec:

The U.S. Nuclear Regulatory Commission has issued the enclosed Amendment No. 297 to Renewed Facility Operating License No. DPR-49 for the Duane Arnold Energy Center (DAEC). The amendment consists of changes to the technical specifications (TSs) in response to your application dated May 18, 2016.

The amendment modifies TS 2.1.1.2 to change Cycle 26 Safety Limit Minimum Critical Power Ratio numeric values. The amendment also removes an outdated historical footnote from DAEC TS Table 3.3.5.1-1, "Emergency Core Cooling System Instrumentation."

A copy of the Safety Evaluation is also enclosed. A Notice of Issuance will be included in the Commission's biweekly *Federal Register* notice.

Sincerely,

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Mahesh L. Chawla, Project Manager Plant Licensing Branch III-1 Division of Operating Reactor Licensing Office of Nuclear Reactor Regulation

Docket No. 50-331

Enclosures:

- 1. Amendment No. 297 to License No. DPR-49
- 2. Safety Evaluation

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

# NEXTERA ENERGY DUANE ARNOLD, LLC

# DOCKET NO. 50-331

# DUANE ARNOLD ENERGY CENTER

### AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 297 License No. DPR-49

- 1. The U.S. Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by NextEra Energy Duane Arnold, LLC dated May 18, 2016, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
  - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
  - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
  - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
  - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
- Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment and paragraph 2.C.(2) of Renewed Facility Operating License No. DPR-49 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 297, are hereby incorporated in the license. NextEra Energy Duane Arnold, LLC shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance and shall be implemented within 60 days of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

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David J. Wrona, Chief Plant Licensing Branch III-1 Division of Operating Reactor Licensing Office of Nuclear Reactor Regulation

Attachment:

Changes to the Renewed Facility Operating License No. DPR-49 and Technical Specifications

Date of Issuance:September 12, 2016

#### ATTACHMENT TO LICENSE AMENDMENT NO. 297

### DUANE ARNOLD ENERGY CENTER

### **RENEWED FACILITY OPERATING LICENSE NO. DPR-49**

#### DOCKET NO. 50-331

Replace the following page of Renewed Facility Operating License DPR-49 with the attached revised page. The revised page is identified by amendment number and contains a marginal line indicating the area of change.

REMOVE	INSER

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Replace the following pages of Appendix A, Technical Specifications, with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

REMOVE	INSERT
2.0-1	2.0-1
3.3-41	3.3-41

C. This renewed operating license shall be deemed to contain and is subject to the conditions specified in the following Commission regulations in 10 CFR Chapter I; Part 20, Section 30.34 of Part 30, Section 40.41 of Part 40, Sections 50.54 and 50.59 of Part 50, and Section 70.32 of Part 70; is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:

# (1) Maximum Power Level

NextEra Energy Duane Arnold, LLC is authorized to operate the Duane Arnold Energy Center at steady state reactor core power levels not in excess of 1912 megawatts (thermal).

### (2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 297, are hereby incorporated in the license. NextEra Energy Duane Arnold, LLC shall operate the facility in accordance with the Technical Specifications.

(a) For Surveillance Requirements (SRs) whose acceptance criteria are modified, either directly or indirectly, by the increase in authorized maximum power level in 2.C.(1) above, in accordance with Amendment No. 243 to Facility Operating License DPR-49, those SRs are not required to be performed until their next scheduled performance, which is due at the end of the first surveillance interval that begins on the date the Surveillance was last performed prior to implementation of Amendment No. 243.

(b) Deleted.

# (3) Fire Protection Program

NextEra Energy Duane Arnold, LLC shall implement and maintain in effect all provisions of the approved fire protection program that comply with 10 CFR 50.48(a) and 10 CFR 50.48(c), as specified in the licensee amendment request dated August 5, 2011 (and supplements dated October 14, 2011, April 23, 2012, May 23, 2012, July 9, 2012, October 15, 2012, January 11, 2013, February 12, 2013, March 6, 2013, May 1, 2013, May 29, 2013, two supplements dated July 2, 2013, and supplements dated August 5, 2013 and August 28, 2013) and as approved in the safety evaluation report dated September 10, 2013. Except where NRC approval for changes or deviations is required by 10 CFR 50.48(c), and provided no other regulation, technical specification, license condition or requirement would require prior NRC approval, the licensee may make changes to the fire protection program without prior approval of the Commission if those change does not require a change to a technical specification or a license condition, and the criteria listed below are satisfied.297

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# 2.1 SLs

- 2.1.1 Reactor Core SLs
  - 2.1.1.1 Fuel Cladding Integrity With the reactor steam dome pressure < 686 psig or core flow < 10% rated core flow:

THERMAL POWER shall be  $\leq 21.7\%$  RTP.

- 2.1.1.3 Reactor Vessel Water Level Reactor vessel water level shall be greater than 15 inches above the top of active irradiated fuel.
- 2.1.2 Reactor Coolant System Pressure SL

Reactor steam dome pressure shall be  $\leq$  1335 psig.

# 2.2 SL Violations

With any SL violation, the following actions shall be completed within 2 hours:

- 2.2.1 Restore compliance with all SLs; and
- 2.2.2 Fully insert all insertable rods.

OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER FUNCTION	REFERENCED FROM REQUIRED ACTION A.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1,2,3, 4 <sup>(a)</sup> , 5 <sup>(a)</sup>	4 <sup>(b)</sup>	В	SR 3.3.5.1.1 SR 3.3.5.1.3 SR 3.3.5.1.8 SR 3.3.5.1.9	≥ 38.3 inches
1,2,3	4 <sup>(b)</sup>	В	SR 3.3.5.1.3 SR 3.3.5.1.8 SR 3.3.5.1.9	≤ 2.19 psig
1,2,3	4	С	SR 3.3.5.1.3 SR 3.3.5.1.8 SR 3.3.5.1.9	≥ 363.3 psig and ≤ 485.1 psig
4 <sup>(a)</sup> , 5 <sup>(a)</sup>	4	В	SR 3.3.5.1.3 SR 3.3.5.1.8 SR 3.3.5.1.9	≥ 363.3 psig and ≤ 485.1 psig
1,2,3, 4 <sup>(a)</sup> , 5 <sup>(a)</sup>	1 per pump	E	SR 3.3.5.1.3 SR 3.3.5.1.8 SR 3.3.5.1.9	≥ 256.6 gpm and ≤ 2382.1 gpm
1,2,3, 4 <sup>(a)</sup> ,5 <sup>(a)</sup>	1 per pump	с	SR 3.3.5.1.8 SR 3.3.5.1.9	$\geq$ 2.6 seconds and $\leq$ 6.8 seconds
1,2,3, 4 <sup>(a)</sup> , 5 <sup>(a)</sup>	1 per pump	F	SR 3.3.5.1.5 SR 3.3.5.1.6 SR 3.3.5.1.9	≤ 3500 V
1,2,3, 4 <sup>(a)</sup> , 5 <sup>(a)</sup>	4	В	SR 3.3.5.1.1 SR 3.3.5.1.3 SR 3.3.5.1.8 SR 3.3.5.1.9	≥ 38.3 inches
1,2,3	4	В	SR 3.3.5.1.3 SR 3.3.5.1.8 SR 3.3.5.1.9	≤ 2.19 psig
	$\begin{array}{c} \text{1,2,3,} \\ \text{4}^{(a)}, 5^{(a)} \\ \text{1,2,3} \\ \text{1,2,3} \\ \text{4}^{(a)}, 5^{(a)} \\ \text{1,2,3} \\ \text{4}^{(a)}, 5^{(a)} \\ \text{1,2,3,} \\ $	OR OTHER SPECIFIED CONDITIONS         CHANNELS PER FUNCTION           1,2,3, $4^{(a)}, 5^{(a)}$ 4 <sup>(b)</sup> 1,2,3         4 <sup>(b)</sup> 1,2,3         4 <sup>(b)</sup> 1,2,3         4 $4^{(a)}, 5^{(a)}$ 4           1,2,3, $4^{(a)}, 5^{(a)}$ 4           1,2,3, $4^{(a)}, 5^{(a)}$ 1 per pump           1,2,3, $4^{(a)}, 5^{(a)}$ 1 per pump           1,2,3, $4^{(a)}, 5^{(a)}$ 1 per pump           1,2,3, $4^{(a)}, 5^{(a)}$ 4           1,2,3, $4^{(a)}, 5^{(a)}$ 4           1,2,3, $4^{(a)}, 5^{(a)}$ 4	OR OTHER SPECIFIED CONDITIONS       CHANNELS PER PER PER PER PER PER PER PER REQUIRED ACTION A.1       FROM REQUIRED ACTION A.1         1,2,3, $4^{(a)},5^{(a)}$ $4^{(b)}$ B         1,2,3 $4^{(b)}$ B         1,2,3 $4^{(b)}$ B         1,2,3 $4^{(b)}$ B         1,2,3 $4$ C $4^{(a)}, 5^{(a)}$ $4$ B         1,2,3, $4^{(a)}, 5^{(a)}$ $1$ per pump       E         1,2,3, $4^{(a)}, 5^{(a)}$ $1$ per pump       C $4^{(a)}, 5^{(a)}$ $1$ per pump       F         1,2,3, $4^{(a)}, 5^{(a)}$ $4$ B         1,2,3, $4^{(a)}, 5^{(a)}$ $4$ B         1,2,3 $4$ B         1,2,3 $4$ B          1,2,3 $4$ B          1,2,3 $4$ B	OR OTHER SPECIFIED CONDITIONSCHANNELS PER FUNCTIONFROM REQUIRED ACTION A.1SURVEILLANCE REQUIREMENTS $1.2.3, 4^{(b)}$ BSR 3.3.5.1.1 SR 3.3.5.1.3 SR 3.3.5.1.9SR 3.3.5.1.3 SR 3.3.5.1.9 $1.2.3, 4^{(b)}$ BSR 3.3.5.1.3 SR 3.3.5.1.9 $1.2.3, 4^{(b)}$ BSR 3.3.5.1.3 SR 3.3.5.1.8 SR 3.3.5.1.8 SR 3.3.5.1.9 $4^{(a)}, 5^{(a)}$ 4C $4^{(a)}, 5^{(a)}$ 1 $4^{(a)}, 5^{(a)}$ 1 $1.2.3, 1$ $4^{(a)}, 5^{(a)}$ $1.2.3, 4$ $4^{(a)}, 5^{(a)}$ $1.2.3, 4$ $4^{(a)}, 5^{(a)}$ $1.2.3, 4$ $4^{(a)}, 5^{(a)}$ $1.2.3, 4$ $4^{(a)}, 5^{(a)}$ $5^{(a)}, 5^{(a)}$ $1.2.3, 4$ $4^{(a)}, 5^{(a)}$ $1.2.3, 4$ $4^{(a)}, 5^{(a)}$ $1.2.3, 4$ $4^{(a)}, 5^{(a)}$ $5^{(a)}, 5^{(a)}$ $1.2.3, 4$ $4^{(a)}, 5^{(a)}$ $5^{(a)}, 5^{($

Table 3.3.5.1-1 (page 1 of 5) Emergency Core Cooling System Instrumentation

(a) When associated ECCS subsystem(s) are required to be OPERABLE per LCO 3.5.2, ECCS-Shutdown.

(b) Also required to initiate the associated Diesel Generator (DG).



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

# SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

# RELATED TO AMENDMENT NO. 297 TO

# RENEWED FACILITY OPERATING LICENSE NO. DPR-49

# NEXTERA ENERGY DUANE ARNOLD, LLC

# DUANE ARNOLD ENERGY CENTER

# DOCKET NO. 50-331

# 1.0 INTRODUCTION

By application dated May 18, 2016 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML16145A250), NextEra Energy Duane Arnold, LLC (NextEra), the licensee for Duane Arnold Energy Center (DAEC), requested an amendment to revise the DAEC technical specifications (TSs). The proposed amendment would modify TS 2.1.1.2 to change Cycle 26 Safety Limit Minimum Critical Power Ratio (SLMCPR) numeric values. The proposed change would lower the numeric values of SLMCPR from 1.10 to 1.08 for two recirculation loop operation (TLO), and from 1.12 to 1.11 for single recirculation loop operation (SLO). The amendment would also remove an outdated historical footnote from DAEC TS Table 3.3.5.1-1, "Emergency Core Cooling System Instrumentation," which was applicable specifically to an earlier DAEC refueling outage (RFO).

# 2.0 REGULATORY EVALUATION

# 2.1 Proposed Changes

On the basis of the calculations for DAEC core reload analysis for Operating Cycle 26, the calculated SLMCPR would change from  $\ge 1.10$  to  $\ge 1.08$  for TLO, and SLMCPR would change from  $\ge 1.12$  to  $\ge 1.11$  for SLO. Accordingly, the licensee proposes to revise DAEC TS, Section 2.1.1.2, to read as follows:

MCPR – With the reactor steam dome pressure  $\geq$  686 psig and core flow  $\geq$  10% rated core flow:

MCPR shall be  $\geq$  1.08 for two recirculation loop operation or  $\geq$  1.11 for single recirculation loop operation.

The proposed amendment would also remove an outdated historical footnote from TS Table 3.3.5.1-1, "Emergency Core Cooling System Instrumentation." The deleted footnote read as follows:

(e) During Refuel Outage (RFO) 23, the MODE 4 and 5 requirement for Function 1.d is revised to be zero (0) required channels per pump.

#### 2.2 Regulations and Guidance

The regulatory requirements and guidance documents that the U.S. Nuclear Regulatory Commission (NRC or Commission) staff considered in its review of the proposed amendment included the following:

- Section 182a of the Atomic Energy Act requires applicants for nuclear power plant
  operating licenses to include TSs as part of the license. The TSs ensure the operational
  capability of structures, systems, and components that are required to protect the health
  and safety of the public. The NRC's regulatory requirements related to the content of the
  TSs are contained in Section 50.36, "Technical specifications," of Title 10 of the Code of
  Federal Regulations (10 CFR), which requires that the TSs include items in the following
  specific categories: (1) safety limits, limiting safety systems settings, and limiting control
  settings; (2) limiting conditions for operation; (3) surveillance requirements; (4) design
  features; and (5) administrative controls. However, the regulation does not specify the
  particular requirements to be included in TSs.
- The regulations in 10 CFR 50.36(c)(1)(i)(A) state, in part, that:

Safety limits for nuclear reactors are limits upon important process variables that are found to be necessary to reasonably protect the integrity of certain of the physical barriers that guard against the uncontrolled release of radioactivity.

- The fuel cladding is one of the physical barriers that separate the radioactive materials from the environment. The SLMCPR is a safety limit that is required to be in TS to ensure that fuel design limits are not exceeded. The SLMCPR limit is contained in DAEC TS 2.1.1.2, and it can vary from cycle to cycle.
- General Design Criterion (GDC) 10, "Reactor design," of Appendix A to 10 CFR Part 50 states that the reactor core and associated coolant, control, and protection systems shall be designed with appropriate margin to assure that specified acceptable fuel design limits (SAFDLs) are not exceeded during any condition of normal operation, including the effects of anticipated operational occurrences. The purpose of the SLMCPR is to ensure that SAFDLs are not exceeded during steady state operation and analyzed transients.
- Guidance on the acceptability of the reactivity control systems, the reactor core, and fuel system design is provided in NUREG-0800, "Standard Review Plan (SRP) for the Review of Safety Analysis Reports for Nuclear Power Plants." Specifically, SRP Section 4.2, "Fuel System Design" (ADAMS Accession No. ML070740002), specifies all fuel damage criteria for evaluation of whether fuel designs meet the SAFDLs. SRP Section 4.4, "Thermal and Hydraulic Design" (ADAMS Accession No. ML070550060) provides guidance on the review of thermal-hydraulic design in meeting the requirement of GDC 10 and the fuel design criteria established in SRP Section 4.2. It states that the critical power ratio is to be established such that at least 99.9 percent of fuel rods in the

core would not be expected to experience departure from nucleate boiling or boiling transition during normal operation or anticipated operational occurrences.

## 3.0 TECHNICAL EVALUATION

### 3.1 Safety Limit Minimum Critical Power Ratio

The SLMCPR numeric values in DAEC TS 2.1.1.2 are safety limits. The SLMCPR limit is established such that at least 99.9 percent of the fuel rods in the core would not be expected to experience the onset of transition boiling as a result of normal operation and transients, which in turn ensures fuel cladding damage does not occur. The SLMCPR limit is established such that fuel design limits are not exceeded during steady state operation, normal operational transients, and abnormal operational transients. As such, fuel damage is calculated not to occur if the limit is not violated. However, because fuel damage is not directly observable, a step-back approach is used to establish corresponding operating limits. The Operating Limit MCPR (OLMCPR) is established by summing the cycle-specific core reload transient analyses adders and the calculated SLMCPR values. The OLMCPR is required to be established and documented in the Core Operating Limits Report (COLR) for each reload cycle by DAEC TS 5.6.5, COLR.

The absolute value of SLMCPR tends to vary cycle-to-cycle, typically due to the introduction of improved fuel bundle types, changes in fuel vendors or applicable computer codes, and changes in core loading pattern. Following the determination of the cycle-specific SLMCPR values, the OLMCPR values are derived. The cycle-specific SLMCPR numeric values are listed in DAEC TS 2.1.1.2, and, therefore, must be revised using the license amendment process.

Global Nuclear Fuel (GNF) performed the DAEC Cycle 26 SLMCPR calculation consistent with NRC-approved methodologies and uncertainties, as documented in the following topical reports (TRs):

- NEDE-24011-P-A, "General Electric Standard Application for Reactor Fuel," Revision 22, November 2015 (GESTAR II) (ADAMS Accession Nos. ML15324A148 and ML15324A149)
- NEDC-32601P-A, "Methodology and Uncertainties for Safety Limit MCPR Evaluations," August 1999 (ADAMS Accession No. ML14093A216)
- NEDC-32694P-A, "Power Distribution Uncertainties for Safety Limit MCPR Evaluations," August 1999 (ADAMS Accession No. ML993140059)
- NEDC-32505P-A, "R-Factor Calculation Method for GE 11, GE 12 and GE 13 Fuel," Revision 1, July 1999 (ADAMS Accession No. ML060520636)

These methodologies were used for the DAEC Cycle 25 and the Cycle 26 SLMCPR calculations. The NRC staff reviewed the proposed change to ensure that the generic methods were appropriately applied to DAEC. The DAEC Cycle 26 core will be a full core of GNF2 fuel assemblies, and no plant hardware or operational changes are required with this proposed change.

NEDC-32505P-A is the generic R-Factor methodology report that describes the changed methodology that was adopted after part length rods were introduced. The NRC staff's safety evaluation for NEDC-32505P-A has a requirement that the applicability of the R-Factor methodology is confirmed when a new fuel type is introduced. The GNF letter designated FLN-2007-011, "GNF2 Advantage Generic Compliance with NEDE-24011-P-A (GESTAR II), NEDC-33270P, March 2007, and GEXL17 Correlation for GNF2 Fuel, NEDC-33292P, March 2007," was submitted to the NRC on March 14, 2007 (ADAMS Accession No. ML070780335). FLN-2007-011 confirmed that the R-factor methodology of NEDC-32505P-A is applicable to GNF2, and that all of the criteria defined in NEDE-24011-P-A have been met for the GNF2 fuel design. As part of an NRC audit related to this report, the GNF2 fuel design was verified to have been evaluated in accordance with the TRs listed above. This was documented in an audit report dated September 25, 2008 (ADAMS Accession No. ML081630579).

On the basis of the analysis performed by GNF using the NRC-approved methodologies described above, the licensee has proposed to amend the DAEC TS Section 2.1.1.2 to revise the SLMCPR for the Operating Cycle 26. This information regarding requested changes to the DAEC TS SLMCPR is based on the core rated power of 1,912 MWt, at minimum core flow of 99.0 percent.

The current required SLMCPR values in DAEC TS are 1.10 for TLO and 1.12 for SLO. Calculations performed by GNF for Cycle 26 resulted in a minimum calculated value of SLMCPR to be 1.08 for TLO, and 1.11 for SLO. For Cycle 26, the minimum core flow SLMCPR calculation performed at 99.0 percent core flow and rated core power condition was limiting, compared to the rated core flow and rated core power condition. GNF's calculation of the revised plant-specific SLMCPR numeric values for DAEC Cycle 26 was performed as part of the reload licensing analysis for DAEC Cycle 26, and is based upon NRC-approved methods, therefore, is acceptable. No departures from NRC-approved methodologies, or deviations from NRC-approved calculational uncertainties, were identified in the DAEC, Cycle 26, SLMCPR calculations.

In summary, the NRC staff verified that the proposed changes would continue to meet the applicable regulations and requirements, and that the analysis performed to calculate the DAEC Cycle 26 SLMCPR numeric values was based upon NRC-approved methodologies. The NRC staff concludes that the SLMCPR will continue to provide assurance that 99.9 percent of the fuel rods in the core will not exceed the critical power ratio, and that fuel cladding integrity will be maintained under conditions of normal operation and with appropriate margin for anticipated operational occurrences.

#### 3.2 Table 3.3.5.1-1 Footnote

The licensee's proposed amendment also removes an outdated historical footnote from DAEC TS Table 3.3.5.1-1, "Emergency Core Cooling System Instrumentation." The footnote text states that it was specific only to RFO 23, which occurred in 2012 at DAEC. The upcoming RFO at DAEC is RFO 25 to support restart for Cycle 26. Therefore, the footnote is no longer necessary and can be deleted. As such, this is an administrative change and no further evaluation is necessary. Thus, the NRC staff finds the removal of the footnote acceptable.

# 3.3 Technical Evaluation Conclusion

The NRC staff finds that the licensee's proposed amendment to update the TSs to include cycle-specific SLMCPR numeric values is based on NRC-approved methodologies that have been approved for use with GNF2 fuel. The amendment is consistent with the regulatory requirements and guidance as discussed in Section 2.0 of this safety evaluation, including GDC 10 and 10 CFR 50.36. The NRC staff determined that the changes do not require any exemptions or relief from regulatory requirements. Defense-in-depth and sufficient safety margins will continue to be maintained. Therefore, based on the above considerations, the proposed changes to revise the SLMCPR values and to delete the historical footnote are acceptable. The licensee is authorized to change the SLMCPR in TS 2.1.1.2 from 1.10 to 1.08 for TLO, and from 1.12 to 1.11 for SLO, at steam dome pressures greater than or equal to 686 psig and at core flows greater than 10 percent of rated core flow. The licensee is also authorized to remove the historical footnote from TS Table 3.3.5.1-1.

# 4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Iowa State official was notified of the proposed issuance of the amendment. The State official had no comments.

# 5.0 ENVIRONMENTAL CONSIDERATIONS

The amendment changes the requirements with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration, and there has been no public comment on such finding as published in the *Federal Register* on July 5, 2016 (81 FR 43665). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

# 6.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) there is reasonable assurance that such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: M. Razzaque

Date of issuance: September 12, 2016

Mr. Thomas A. Vehec Vice President NextEra Energy Duane Arnold Energy Center 3277 DAEC Road Palo, IA 52324-9785

# SUBJECT: DUANE ARNOLD ENERGY CENTER - ISSUANCE OF AMENDMENT TO REVISE TECHNICAL SPECIFICATION 2.1.1.2, SAFETY LIMIT MINIMUM CRITICAL POWER RATIO (CAC NO. MF7734)

Dear Mr. Vehec:

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A copy of the Safety Evaluation is also enclosed. A Notice of Issuance will be included in the Commission's biweekly *Federal Register* notice.

Sincerely, /**RA**/ Mahesh L. Chawla, Project Manager Plant Licensing Branch III-1 Division of Operating Reactor Licensing Office of Nuclear Reactor Regulation

\*via memo

Docket No. 50-331

Enclosures:

- 1. Amendment No. 297 to License No. DPR-49
- 2. Safety Evaluation

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#### ADAMS Accession No.: ML16211A514

OFFICE	NRR/LPL3-1/PM	NRR/LPL3-1/PM	NRR/LPL3-1/LA	STSB/BC
NAME	ADietrich	MChawla	SRohrer	MChernoff for (AKlein)
DATE	8/1/16	9/6/16	8/1/16	8/8/16
OFFICE	SRXB/BC	OGC-NLO	NRR/LPL3-1/BC	NRR/LPL3-1/PM
NAME	EOesterle*	CKanatas	DWrona	MChawla
DATE	7/15/16	8/10/16	9/9/16	9/12/16

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