



September 25, 2019

NG-19-0100  
L-2019-161  
10 CFR 50.90

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

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

License Amendment Request (TSCR-186): Removal of License Condition 2.C.(3), Fire Protection Program

Pursuant to 10 CFR 50.90, NextEra Energy Duane Arnold, LLC (NEDA) is submitting a request for an amendment to the Operating License for the Duane Arnold Energy Center (DAEC). The proposed amendment would delete License Condition 2.C.(3), "Fire Protection Program," which requires that NEDA implement and maintain a fire protection program that complies with the requirements of 10 CFR 50.48(a) and 10 CFR 50.48(c).

By letter dated January 18, 2019 (Accession No. ML19023A196), NEDA provided formal notification to the U.S. Nuclear Regulatory Commission (NRC) pursuant to 10 CFR 50.82(a)(1)(i) and 10 CFR 50.4(b)(8) of the intention to permanently cease power operations at the DAEC in the fourth quarter of 2020. After the certifications of permanent cessation of power operation and of permanent removal of fuel from the DAEC reactor vessel are docketed in accordance with 10 CFR 50.82(a)(1)(i) and (ii) respectively, and pursuant to 10 CFR 50.82(a)(2), the 10 CFR 50 license will no longer authorize reactor operation or emplacement or retention of fuel in the reactor vessel.

As a result, the Fire Protection Program license condition may be removed, and NEDA will maintain a Fire Protection Program in accordance with 10 CFR 50.48(f), as required during the continued effectiveness period of the Part 50 license under 10 CFR 50.51(b).

The Enclosure to this letter provides NEDA's evaluation of the proposed change. Attachment 1 to the enclosure provides a markup of the Operating License showing the proposed change, and Attachment 2 provides the clean Operating License pages containing the proposed change.

NEDA requests approval of the proposed license amendment by October 1, 2020. NEDA requests that the approved amendment become effective following submittal of the certifications required by 10 CFR 50.82(a)(1)(i) and (ii).

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In accordance with 10 CFR 50.91, a copy of this application with the enclosure is being provided to the designated State of Iowa official.

As discussed in the enclosure, the proposed change does not involve a significant hazards consideration pursuant to 10 CFR 50.92, and there are no significant environmental impacts associated with the change. The DAEC Onsite Review Group has reviewed and concurred with the proposed license amendment.

This letter contains no new or revised regulatory commitments.

If you have any questions or require additional information, please contact Mike Davis, Licensing Manager, at 319-851-7032.

I declare under penalty of perjury that the foregoing is true and correct. Executed on September 25, 2019.



Dean Curtland  
Site Director  
NextEra Energy Duane Arnold, LLC

Enclosure

cc: Regional Administrator, USNRC, Region III,  
Project Manager, USNRC, Duane Arnold Energy Center  
Resident Inspector, USNRC, Duane Arnold Energy Center  
A. Leek (State of Iowa)

**Enclosure**

NEXTERA ENERGY DUANE ARNOLD, LLC  
DUANE ARNOLD ENERGY CENTER

NG-19-0100

LICENSE AMENDMENT REQUEST (TSCR-186)

DESCRIPTION AND EVALUATION OF THE PROPOSED CHANGES

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**NEXTERA ENERGY DUANE ARNOLD, LLC  
DUANE ARNOLD ENERGY CENTER**

**License Amendment Request (TSCR-186): Removal of License Condition 2.C.(3),  
Fire Protection Program**

**EVALUATION OF PROPOSED CHANGE**

- 1.0 Summary Description
- 2.0 Detailed Description
- 3.0 Technical Evaluation
- 4.0 Regulatory Evaluation
  - 4.1 Applicable Regulatory Requirements/Criteria
  - 4.2 Precedent
  - 4.3 No Significant Hazards Consideration
  - 4.4 Conclusions
- 5.0 Environmental Considerations
- 6.0 References

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Attachment 1 – Proposed Operating License Changes (Mark-Up)

Attachment 2 – Revised Operating License Pages (Clean, with Proposed Changes)

## **1.0 SUMMARY DESCRIPTION**

The proposed amendment would delete the DAEC Operating License Condition 2.C.(3), "Fire Protection Program," which requires that NextEra Energy Duane Arnold, LLC (NEDA) implement and maintain a fire protection program that complies with the requirements of 10 CFR 50.48(a) and 10 CFR 50.48(c). NEDA will maintain a Fire Protection Program in accordance with 10 CFR 50.48(f), as required for licensees that have submitted certification of permanent cessation of operations.

## **2.0 DETAILED DESCRIPTION**

### **2.1 Current Operating License Requirements**

License Condition 2.C.(3) requires NEDA to 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, as supplemented and approved in the safety evaluation report dated September 10, 2013. Additionally, the license condition includes criteria for making changes to the approved program without prior NRC approval.

### **2.2 Reason for the Proposed Change**

The proposed change is requested as a result of NEDA's formally-stated intention to permanently cease power operation at DAEC in the fourth quarter of 2020 (Reference 1). After the certifications of permanent cessation of power operation and of permanent removal of fuel from the DAEC reactor vessel are docketed, in accordance with 10 CFR 50.82(a)(1)(i) and (ii) respectively, and pursuant to 10 CFR 50.82(a)(2), the 10 CFR 50 license will no longer authorize reactor operation or emplacement or retention of fuel in the reactor vessel. As a result, License Condition 2.C.(3) will no longer apply because it establishes requirements that relate to the ability to shut down the plant safely in the event of a fire.

### **2.3 Description of the Proposed Change**

The revised License Condition will read as follows:

2.C.(3) Deleted

Attachment 1 provides a markup of the Operating License showing the proposed change, and Attachment 2 provides the clean Operating License pages containing the proposed change.

### 3.0 TECHNICAL EVALUATION

The current Fire Protection License Condition is applicable to an operating reactor as the requirements of 10 CFR 50.48(a) and 50.48(c) apply to holders of operating licenses issued under Part 50. The conditions specified in the License Condition include consideration of risk metrics for core damage frequency and large early release frequency, which are associated with power operation.

After the certifications of permanent cessation of power operation and of permanent removal of fuel from the DAEC reactor vessel are docketed in accordance with 10 CFR 50.82(a)(1)(i) and (ii) respectively, and pursuant to 10 CFR 50.82(a)(2), the DAEC license will no longer authorize operation of the reactor. As such, the conditions specified in License Condition 2.C.(3) are no longer required or applicable, and License Condition 2.C.(3) can be deleted.

Following submittal of the certifications required under 10 CFR 50.82(a)(1), a fire protection program is required by 10 CFR 50.48(f) to address the potential for fires that could result in a radiological hazard. This regulation is applicable regardless of whether a requirement for a fire protection program is included in the facility license. Fire Protection program aspects that relate to a permanently defueled condition are specifically and adequately addressed by 10 CFR 50.48(f). As a result, the fire protection program will be revised to take into account the decommissioning facility conditions and activities.

The revision to the DAEC Operating License (OL) is proposed in accordance with 10 CFR 50.51(b) and the proposed changes would become effective following submittal of the certifications required by 10 CFR 50.82(a)(1)(i) and (ii).

### 4.0 REGULATORY EVALUATION

#### 4.1 Applicable Regulatory Requirements/Criteria

10 CFR 50.48(f) states in part that: *"Licensees that have submitted the certifications required under 10 CFR 50.82(a)(1) shall maintain a fire protection program to address the potential for fires that could cause the release or spread of radioactive materials (i.e., that could result in a radiological hazard)..."*

#### 4.2 Precedent

The proposed change is consistent with the changes submitted by Fort Calhoun Station Unit No. 1 (ML16323A228), Indian Point Nuclear Generating Station Unit 2 (ML19105B241) and Pilgrim Nuclear Power Station (ML18260A085) to eliminate their fire protection license conditions and establish Fire Protection Programs that meet the requirements of 10 CFR 50.48(f) for decommissioning plants.

#### 4.3 No Significant Hazards Consideration

NEDA has evaluated whether a significant hazards consideration is involved with the proposed amendment by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of amendment," as discussed below:

1. Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

Response: No

The proposed change does not alter, degrade or prevent action described or assumed in any accident in the UFSAR from being performed. The proposed change does not alter any assumptions previously made in evaluating radiological consequences. The proposed change does not affect the integrity of any fission product barrier.

Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

Response: No

The proposed change does not alter any safety limits or safety analysis assumptions associated with the operation of the plant. The proposed change does not introduce any new accident initiators, nor does the change reduce or adversely affect the capabilities of any plant structure or system in the performance of its safety function.

Therefore, the proposed change does not create the possibility of a new or different kind of accident from any previously evaluated.

3. Does the proposed change involve a significant reduction in a margin of safety?

Response: No

The proposed change does not alter the manner in which safety limits or limiting safety system settings are determined. The safety analysis acceptance criteria are not affected by the proposed change. The proposed change does not change the design function of any equipment assumed to operate in the event of an accident.

Therefore, the proposed change does not involve a significant reduction in a margin of safety.

Based on the above, NEDA concludes that the proposed change presents no significant hazards consideration under the standards set forth in 10 CFR 50.92, and, accordingly, a finding of "no significant hazards consideration" is justified.

#### 4.4 Conclusions

Based on the considerations discussed above, (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) 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.

### **5.0 ENVIRONMENTAL CONSIDERATIONS**

NEDA has evaluated the proposed amendment for environmental considerations. The review has determined that the proposed amendment would change a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, or would change an inspection or surveillance requirement. However, the proposed amendment does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluent that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure.

Accordingly, the proposed amendment meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed amendment.

### **6.0 REFERENCES**

- 6.1 Letter from Mano K. Nazar, NextEra Energy Duane Arnold, LLC to U.S. Nuclear Regulatory Commission - "Duane Arnold Energy Center - Certification of Permanent Cessation of Power Operations," dated January 18, 2019, (ADAMS Accession No. ML19023A196).

### **LIST OF ATTACHMENTS**

Attachment 1 - Proposed Operating License Changes (Mark-Up)

Attachment 2 - Revised Operating License Pages (Clean, with Proposed Changes)



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**ATTACHMENT 1**

PROPOSED OPERATING LICENSE CHANGES  
(MARK-UP)

- 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. 307, 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 Deleted~~

~~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 changes satisfy the provisions set forth in 10 CFR 50.48(a) and 10 CFR 50.48(c), the change does not require a change to a technical specification or a license condition, and the criteria listed below are satisfied.~~



~~Risk Informed Changes that May Be Made Without Prior NRC Approval~~

~~A risk assessment of the change must demonstrate that the acceptance criteria below are met. The risk assessment approach, methods, and data shall be acceptable to the NRC and shall be appropriate for the nature and scope of the change being evaluated; be based on the as built, as operated, and maintained plant; and reflect the operating experience at the plant. Acceptable methods to assess the risk of the change may include methods that have been used in the peer-reviewed fire PRA model, methods that have been approved by NRC through a plant specific license amendment or NRC approval of generic methods specifically for use in NFPA 805 risk assessments, or methods that have been demonstrated to bound the risk impact.~~

- ~~(a) Prior NRC review and approval is not required for changes that clearly result in a decrease in risk. The proposed change must also be consistent with the defense in depth philosophy and must maintain sufficient safety margins. The change may be implemented following completion of the plant change evaluation.~~
- ~~(b) Prior NRC review and approval is not required for individual changes that result in a risk increase less than  $1 \times 10^{-7}$ /year (yr) for CDF and less than  $1 \times 10^{-8}$ /yr for LERF. The proposed change must also be consistent with the defense in depth philosophy and must maintain sufficient safety margins. The change may be implemented following completion of the plant change evaluation.~~

~~Other Changes that May Be Made Without Prior NRC Approval~~

- ~~1. Changes to NFPA 805, Chapter 3, Fundamental Fire Protection Program. Prior NRC review and approval are not required for changes to the NFPA 805, Chapter 3, fundamental fire protection program elements and design requirements for which an engineering evaluation demonstrates that the alternative to the Chapter 3 element is functionally equivalent or adequate for the hazard. The licensee may use an engineering evaluation to demonstrate that a change to NFPA 805, Chapter 3 element is functionally equivalent to the corresponding technical requirement. A qualified fire protection engineer shall perform the engineering evaluation and conclude that the change has not affected the functionality of the component, system, procedure, or physical arrangement, using a relevant technical requirement or standard.~~

~~The licensee may use an engineering evaluation to demonstrate that changes to certain NFPA 805, Chapter 3 elements are acceptable because the alternative is "adequate for the hazard." Prior NRC review and approval would not be required for alternatives to four specific sections of NFPA 805, Chapter 3, for which an engineering evaluation demonstrates that the alternative to the Chapter 3 element is adequate for the hazard. A qualified fire protection engineer shall perform the engineering evaluation and conclude that the change has not affected the functionality of the component, system, procedure, or physical arrangement, using a relevant technical requirement or standard. The four specific sections of NFPA 805, Chapter 3, are as follows:~~

- ~~Fire Alarm and Detection Systems (Section 3.8);~~
- ~~Automatic and Manual Water Based Fire Suppression Systems (Section 3.9);~~
- ~~Gaseous Fire Suppression Systems (Section 3.10); and,~~
- ~~Passive Fire Protection Features (Section 3.11).~~

~~This License Condition does not apply to any demonstration of equivalency under Section 1.7 of NFPA 805.~~

~~2. Fire Protection Program Changes that Have No More than Minimal Risk Impact~~

~~Prior NRC review and approval are not required for changes to the licensee's fire protection program that have been demonstrated to have no more than a minimal risk impact. The licensee may use its screening process as approved in the NRC safety evaluation report dated September 10, 2013 to determine that certain fire protection program changes meet the minimal criterion. The licensee shall ensure that fire protection defense in depth and safety margins are maintained when changes are made to the fire protection program.~~

~~Transition License Conditions~~

- ~~(1) Before achieving full compliance with 10 CFR 50.48(c), as specified by (2) and (3) below, risk informed changes to the licensee's fire protection program may not be made without prior NRC review and approval unless the change has been demonstrated to have no more than a minimal risk impact, as described in (2) above.~~
  - ~~(2) The licensee shall implement the modifications to its facility, as described in Enclosure 2, Attachment S, Table S 1, "Plant modifications Committed," of DAEC letter NG 13 0287, dated July 2, 2013, to complete the transition to full compliance with 10 CFR 50.48(c) by December 31, 2014. The licensee shall maintain appropriate compensatory measures in place until completion of these modifications.~~
  - ~~(3) The licensee shall implement the items listed in Enclosure 2, Attachment S, Table S 2, "Implementation Items," of DAEC letter NG 13 0287, dated July 2, 2013, by March 9, 2014.~~
- (4) The licensee is authorized to operate the Duane Arnold Energy Center following installation of modified safe-ends on the eight primary recirculation system inlet lines which are described in the licensee letter dated July 31, 1978, and supplemented by letter dated December 8, 1978.
- (5) Physical Protection

NextEra Energy Duane Arnold, LLC shall fully implement and maintain in effect all provisions of the Commission-approved physical security, training and qualification,



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**ATTACHMENT 2**

REVISED OPERATING LICENSE PAGES  
(CLEAN, WITH PROPOSED CHANGES)

- 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. 307, 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) Deleted

- (4) The licensee is authorized to operate the Duane Arnold Energy Center following installation of modified safe-ends on the eight primary recirculation system inlet lines which are described in the licensee letter dated July 31, 1978, and supplemented by letter dated December 8, 1978.

(5) Physical Protection

NextEra Energy Duane Arnold, LLC shall fully implement and maintain in effect all provisions of the Commission-approved physical security, training and qualification,