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June 3, 2021

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

SI-21-005
10 CFR 50.90

Duane Arnold Energy Center
Docket Nos. 50-331, 72-32
Renewed Op. License No. DPR-49

License Amendment Request (TSCR-191): Proposed Change to the Physical Security Plan for the ISFSI-Only Condition

References:

1. D. Curtland (NextEra Energy Duane Arnold, LLC) to USNRC, "Certification of Permanent Removal of Fuel from the Reactor Vessel for Duane Arnold Energy Center," NG-20-0090, dated October 12, 2020 (ML20286A317)

Pursuant to 10 CFR 50.90, NextEra Energy Duane Arnold, LLC (NEDA) requests an amendment to the Facility License for the Duane Arnold Energy Center (DAEC). The proposed amendment would revise the DAEC Physical Security Plan (PSP) to reflect the requirements associated with the security changes for the Independent Spent Fuel Storage Installation (ISFSI) only configuration, consistent with the permanent removal of all spent fuel from the Spent Fuel Pool (SFP).

In Reference 1, NEDA provided formal notification to the U.S. NRC of the permanent removal of fuel from the DAEC reactor vessel. Pursuant to 10 CFR 50.82(a)(2), the 10 CFR 50 license no longer authorizes reactor operation or emplacement or retention of fuel in the reactor vessel.

Enclosure 1 to this letter provides NEDA's evaluation of the proposed change. Enclosure 2 to this letter is a CD that contains the following files:

- AM01 SAS DAEC
- AM02 Search Program DAEC
- AM03 Vital Area DAEC
- AM04 Illumination DAEC
- AM05 Suspension of Security Measures DAEC
- AM06 OCA Monitoring DAEC
- AM07 Contingency OJT Hours DAEC
- AM08 CAS DAEC
- Att 1&2 DAEC ISFSI Orders Response
- DAEC 10 CFR ISFSI Cross Reference Review
- DAEC ISFSI PSP Rev 0 May 2021
- DAEC Programmatic Assumptions for ISFSI-Only Site

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NEDA requests that Enclosure 2, which contains Safeguards Information and Security-Related Information, be withheld from public disclosure pursuant to 10 CFR 73.22 and 10 CFR 2.390, respectively.

NEDA requests approval of the proposed license amendment by April 1, 2022, and implementation within 90 days of the approved amendment effective date.

In accordance with 10 CFR 50.91, a copy of this request without attachments is being provided to the designated State of Iowa official.

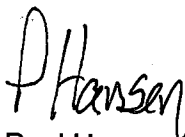
As discussed in the Enclosure, the proposed change does not involve a significant hazards consideration pursuant to 10 CFR 50.92, and there are no significant environmental impacts associated with the change. The DAEC Onsite Review Group has reviewed and concurred with the proposed license amendment.

This letter contains no new or revised regulatory commitments.

If you have any questions or require additional information, please contact John Schwertfeger at (319) 851-7504.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on June 3, 2021.



Paul Hansen
Decommissioning Director
NextEra Energy Duane Arnold, LLC

Enclosures: As stated

cc: Regional Administrator, USNRC, Region III
Project Manager, USNRC, DAEC (w/o Enclosure 2)
Resident Inspector, USNRC, DAEC (w/o Enclosure 2)
Angela Leek (State of Iowa) (w/o Enclosure 2)

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ENCLOSURE 1

Evaluation of the Proposed Change

Subject: License Amendment Request (TSCR-191): Proposed Change to the Physical Security Plan for the ISFSI-Only Condition

1. SUMMARY DESCRIPTION
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 - 4.2 Precedent
 - 4.3 No Significant Hazards Consideration Determination
 - 4.4 Conclusions
 5. ENVIRONMENTAL CONSIDERATION
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ATTACHMENTS:

1. Proposed Facility License Changes (Mark-up)
2. Proposed Facility License Changes (Clean-typed)

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1. SUMMARY DESCRIPTION

In accordance with the provisions of 10 CFR 50.4 and § 50.90, NextEra Energy Duane Arnold, LLC (NEDA) is requesting an amendment to the Duane Arnold Energy Center (DAEC) Facility License, License Condition 2.C.(5), Physical Protection. The proposed amendment request is in support of the approval of a new DAEC Physical Security Plan (PSP).

2. DETAILED DESCRIPTION

2.1 Description of the Proposed Changes

DAEC FL Condition 2.C.(5), Physical Protection, would be modified to remove requirements for 10 CFR 73.55 and adding reference to 10 CFR 72.212(b)(9). Additionally, the DAEC PSP, which contains Safeguards Information protected under 10 CFR 73.21, will be updated accordingly.

2.2 Reason for the Proposed Changes

NEDA provided the NRC a certification of permanent removal of the fuel of the DAEC reactor vessel on October 12, 2020 (Reference 1). Therefore, pursuant to 10 CFR 50.82(a)(2), the 10 CFR 50 license for DAEC no longer authorizes operation of the reactor or replacement or retention of fuel into the reactor vessel. Currently, spent fuel is stored in the spent fuel pool (SFP) and Independent Spent Fuel Storage Installation (ISFSI). The Post-Shutdown Decommissioning Activities Report (PSDAR) (Reference 2) documented NEDA's expectation that all spent fuel would be completely transferred to the ISFSI in 2022.

The current PSP at DAEC contains requirements that provide appropriate protection for the safe storage of spent fuel in the SFP, as well as the ISFSI. As such, the existing Security Plan provides a level of protection in excess of that required after all the spent fuel is transferred to the ISFSI. The proposed Plan reflects the future site configuration where all the remaining spent fuel has been moved to ISFSI and that there is no requirement to return the spent fuel to the SFP. Transfer of fuel from the SFP to the ISFSI supports the decommissioning of DAEC, which involves the eventual dismantlement of the SFP and other remaining plant structures. Therefore, the proposed Plan will supersede the existing Security Plan after the remaining spent fuel in the SFP has been moved to the ISFSI.

3. TECHNICAL EVALUATION

The DAEC PSP addresses the protection of material on site that is licensed by the DAEC Facility License. The protection of material subject to the requirements of 10 CFR 37, "Physical Protection of Category 1 and Category 2 Qualities of Radioactive Material," is addressed in a separate Plan. NEDA has a general license ISFSI with security requirements in 10 CFR 72.212(b)(9). These security requirements also provide an appropriate level of protection for other special nuclear material on site. The DAEC PSP reflects the configuration of DAEC with the remaining spent fuel in the SFP moved to the ISFSI and no requirement to return spent fuel to the SFP. The security function for the ISFSI are to detect threats, assess those threats, and call for assistances from the local law enforcement agency (LLEA).

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10 CFR 72.212(b)(9) requires licensees to comply with 10 CFR 73.55 and six (6) additional conditions and exceptions. The DAEC PSP was based on the NRC endorsed template for Operational Nuclear Plants, NEI 03-12, Revision 7, and modified to incorporate eight (8) additional conditions and exceptions. In addition, other requirements are not applicable for an ISFSI, such as certain sections of the design basis threat, cyber security, target sets, 10 CFR 26, and portions of the insider mitigation program, and therefore are not included in the DAEC PSP. Programmatic assumptions used to develop the DAEC PSP are discussed in the Enclosure 2 file "DAEC Programmatic Assumptions for ISFSI-Only Site".

Pursuant to 10 CFR 73.55(r), eight (8) alternative measures have been incorporated in to the DAEC PSP. These alternative measures address the replacement of the Secondary Alarm Station (SAS) with an off-site Security Remote Monitoring Station (SRMS), illumination, searches, vital areas, suspension of security measures, on-the-job (OJT) hours, owner-controlled area monitoring and Central Alarm Station (CAS) placement. Evaluation of these alternative measures are provided in Enclosure 2 files "AM01" through "AM08".

NEDA has taken a methodical approach to integrating 10 CFR 72.212(b)(9) requirements with various other Code of Federal Regulation requirements. The DAEC PSP complies with these requirements except where alternative measures have been requested. The DAEC PSP protects against the design basis threat of radiological sabotage and ensures the health and safety of public.

4. REGULATORY EVALUATION

4.1 Applicable Regulatory Requirements/Criteria

In accordance with the provisions of 10 CFR 50.4 and § 50.90, NEDA is requesting an amendment to DAEC Facility License, License Condition 2.C.(5), Physical Security. Applicable regulatory requirements are:

10 CFR Part 50.82, Termination of License, section (a)(2) states:

"Upon docketing of the certifications for permanent cessation of operations and permanent removal of fuel from the reactor vessel, or when a final legally effective order to permanently cease operations has come into effect, the 10 CFR Part 50 license no longer authorizes operation of the reactor or emplacement or retention of fuel into the reactor vessel."

10 CFR Part 72.212, Conditions of general license issued under §72.210, section (b)(9) states:

"Protect the spent fuel against the design basis threat of radiological sabotage in accordance with the same provisions and requirements as are set forth in the licensee's physical security plan pursuant to §73.55 of this chapter with the following additional conditions and exceptions:"

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4.2 Precedent

Several plants currently in the decommissioning process, including Kewaunee (ML17052A591), Vermont Yankee (ML18165A423), San Onofre Units 1, 2 and 3 (ML17311A364), and Fort Calhoun Unit 1 (ML20071E104), have revised their Physical Security Plans to reflect requirements for an ISFSI-only configuration.

4.3 No Significant Hazards Consideration Determination

The DAEC PSP addresses the protection of material on site that is licensed by the DAEC Facility License. The protection of material subject to the requirements of 10 CFR 37, "Physical Protection of Category 1 and Category 2 Quantities of Radioactive Material," is addressed in a separate plan. The DAEC PSP reflects the configuration of DAEC after all of the spent nuclear fuel is stored at the ISFSI. The 10 CFR Part 50 license for DAEC no longer authorizes operation of the reactor or emplacement or retention of fuel into the reactor vessel.

NEDA has evaluated whether or not a significant hazards consideration is involved with the proposed amendment by focusing on three standards set forth in 10 CFR 50.92, "Issuance of amendment," as discussed below:

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

Response: No.

The irradiated fuel at DAEC is currently stored in the SFP and at the ISFSI. In this condition, the number of credible accidents/transients is significantly smaller than for a plant authorized to operate the reactor or emplace or retain fuel in the reactor vessel. Accidents/transients that are no longer applicable in a permanently defueled condition have been deleted from the DAEC Defueled Safety Analysis Report, as updated (DSAR) Chapter 6. The only remaining DSAR Chapter 6 accident is the Fuel Handling Accident (FHA). However, as previously discussed, the DAEC PSP reflects the future site configuration where all the remaining spent fuel in the SFP has been moved to the ISFSI and there are no requirements to return spent fuel to the SFP. The FHA will no longer be credible after all fuel has been removed from the SFP.

The casks will continue to be maintained in accordance with the provisions of the general license for the DAEC ISFSI, utilizing the TN Americas LLC, Standardized NUHOMS®-61BT and -61BTH Systems, Certificate of Compliance (CoC) No. 72-1004, and in accordance with the associated NUH-003 Updated Final Safety Analysis Report for the Standardized NUHOMS® Horizontal Modular Storage System for Irradiated Nuclear Fuel (UFSAR). The NUH-003 UFSAR, Section 8.2, Accident Analysis, provides the evaluation of accidents for the Standardized NUHOMS®-61BT and -61BTH Systems, in which accident conditions are analyzed to demonstrate that the requirements of 10 CFR 72.122 are met and that adequate safety margins exist for the NUHOMS® system design.

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The proposed amendment has no effect on the capability of any facility systems, structures, and components (SSCs) to perform their design function. The modifications associated with these changes do not significantly affect the ability of the DSC and HSM to perform their functions as described in the NUH-003 UFSAR. Hence, the proposed amendment has no effect on the ability of the Cask System to perform its design function nor would it increase the likelihood of an accident previously evaluated. The proposed amendment would not increase the likelihood of the malfunction of any plant SSC. Therefore, the proposed amendment does not involve a significant increase in the probability or consequences of a previously evaluated accident.

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

Response: No.

The proposed amendment does not involve major physical alterations of any facility SSCs or Cask System components required to mitigate or prevent any accident previously evaluated, and does not have a significant effect on the capability of any facility SSC or Cask System component to perform its design functions. Minor modifications are associated with this proposed amendment (e.g. changes to the Security Control Point building.) The proposed license amendment would not physically change any SSCs involved in the mitigation of any postulated accident. Thus, no new initiators or precursors of new or different kind of accident are created. Furthermore, the proposed amendment does not create the possibility of a new failure mode associated with any equipment failures. The credible events for the ISFSI remain unchanged.

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

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

Response: No.

The proposed changes do not impact facility or ISFSI SSCs, or their response to transients or accidents. The proposed changes do not affect the Technical Specifications. The proposed changes do not involve a change in the method of facility operation, and no accident analyses will be affected by the proposed changes. Safety analysis acceptance criteria are not affected by the proposed changes and margins of safety are maintained.

Therefore, the proposed changes do not involve a significant reduction in a margin of safety.

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

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4.4 Conclusions

In conclusion, 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 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. ENVIRONMENTAL CONSIDERATION

DAEC has evaluated this proposed license amendment against the criteria for identification of licensing and regulatory actions requiring environmental assessment in accordance with 10 CFR 51.21. NEDA has determined that this proposed license amendment meets the criteria for a categorical exclusion set forth in 10 CFR 51.22(c)(12). The proposed amendment is being submitted under the provisions of 10 CFR Part 50 for approval of a safeguards plan and changes to the DAEC Facility License, and in accordance with 10 CFR Part 72. Activities associated with the proposed amendment do not involve any significant construction impacts, and are consistent with a reduction in the security area that focuses primarily on the storage of spent fuel, described in NUREG-0586, "Generic Environmental Impact Statement on Decommissioning of Nuclear Facilities," as a general activity expected to occur during decommissioning. The proposed amendment is confined to (i) organizational and procedural matters; (ii) modifications to systems used for security; and (iii) administrative changes. The modifications associated with the proposed amendment include Security Control Point building, which are for security of the facility in the ISFSI configuration. The proposed amendment addresses security organizational changes and describes procedural and other administrative changes.

Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment is required to be prepared in connection with the issuance of this amendment.

6. REFERENCES

1. Letter from D. Curtland (NextEra Energy Duane Arnold, LLC) to USNRC, "Certification of Permanent Removal of Fuel from the Reactor Vessel for Duane Arnold Energy Center," NG-20-0090, dated October 12, 2020 (ML20286A317).
2. Letter from P. Hansen (NextEra Energy Duane Arnold, LLC) to USNRC, "Response to Request for Additional Information Related to Post Shutdown Decommissioning Activities Report," NG-21-0004, dated February 5, 2021 (ML21036A160)

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License Amendment Request (TSCR-191)

Attachment 1

Facility License

(Mark-up)

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and safeguards contingency plans including amendments made pursuant to 10 CFR 72.212(b)(9) ~~provisions of the Miscellaneous Amendments and Search Requirements revisions to 10 CFR 73.55 (51 FR 27817 and 27822)~~ and to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The combined set of plans, which contains Safeguards Information protected under 10 CFR 73.21, is entitled: "Duane Arnold Energy Center Physical Security Plan," submitted by letter dated ~~May 16, 2006~~ June 3, 2021.

(6) Deleted

(7) Additional Conditions

The Additional Conditions contained in Appendix B, as revised through Amendment No. 279, are hereby incorporated into this license. NextEra Energy Duane Arnold, LLC shall operate the facility in accordance with the Additional Conditions.

(8) The licensee is authorized to revise the Updated Final Safety Analysis Report by deleting the footnote for Section 9.1.4.4.5 which states: "The NRC has not endorsed the reactor building crane as single-failure proof (Reference 9)," and by deleting Reference 9 of the references for Section 9.1.

(9) Mitigation Strategy License Condition

Develop and maintain strategies for addressing large fires and explosions and that include the following key areas:

(a) Fire fighting response strategy with the following elements:

1. Pre-defined coordinated fire response strategy and guidance
2. Assessment of mutual aid fire fighting assets
3. Designated staging areas for equipment and materials
4. Command and control
5. Training of response personnel

(b) Operations to mitigate fuel damage considering the following:

1. Protection and use of personnel assets
2. Communications
3. Minimizing fire spread
4. Procedures for implementing integrated fire response strategy
5. Identification of readily-available pre-staged equipment
6. Training on integrated fire response strategy
7. Spent fuel pool mitigation measures

(c) Actions to minimize release to include consideration of:

1. Water spray scrubbing
2. Dose to onsite responders

(10) Deleted

Renewed License No. DPR-49
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License Amendment Request (TSCR-191)

Attachment 2

Facility License

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