NEXTera ENERGY
DUANE ARNOLD

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

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

Duane Arnold Energy Center Regulatory Path to Potential Reauthorization of Power Operations

References:

1. Letter from NextEra Energy Duane Arnold, LLC to USNRC, "Certification of Permanent Cessation of Power Operations," dated August 27, 2020 (ADAMS Accession No. ML20240A067)
2. Letter from NextEra Energy Duane Arnold, LLC to USNRC, "Certification of Permanent Removal of Fuel from the Reactor Vessel for Duane Arnold Energy Center," dated October 12, 2020 (ADAMS Accession No. ML20286A317)
3. Letter from NRC to NextEra Energy Duane Arnold, LLC, "Duane Arnold Energy Center – Issuance of Amendment No.311 re: Permanently Defueled Technical Specifications," dated July 10, 2020 (ADAMS Accession No. ML20134J104)
4. Letter from NextEra Energy Duane Arnold, LLC to USNRC, "Post Shutdown Decommissioning Activities Report," dated April 2, 2020 (ADAMS Accession No. ML20094F603)
5. USNRC SECY-20-0110, Enclosure 1, Federal Register Notice – Denial of Petition for Rulemaking on Criteria to Return Retired Nuclear Power Reactors to Operations, dated December 7, 2020 (PRM-50-117; NRC-2019-0063), (ADAMS Accession No. ML20205L307)

NextEra Energy Duane Arnold, LLC ("NextEra"), is submitting to the U.S. Nuclear Regulatory Commission ("NRC"), a regulatory path for the potential reauthorization of power operations at Duane Arnold Energy Center ("DAEC"). The regulatory path is consistent with the process described in NRC Inspection Manual Chapter ("IMC") 2562, Light Water Reactor Inspection Program for Restart of Reactor Facilities Following Permanent Cessation of Power Operations," considers the ability of the reactor to resume operations safely and in conformance with NRC licensing requirements for operating reactors. NextEra is submitting this letter to inform NRC Staff of the intention to submit a series of licensing applications to support open communications and agency resource planning.

By letter dated August 27, 2020 (Reference 1), NextEra certified under 10 CFR § 50.82(a)(1)(i) that it had permanently ceased power operations at DAEC. By letter dated October 12, 2020 (Reference 2), NextEra certified under 10 CFR § 50.82(a)(1)(ii), that the fuel was permanently removed from the DAEC reactor vessel and placed in the spent fuel pool. In accordance with 10 CFR § 50.82(a)(2), "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". Also, Amendment 311 to the DAEC Renewed Facility License ("RFL") was issued on July 10, 2020, to reflect a permanently defueled status, where operation of the reactor is not permitted (Reference 3). Thus, the current DAEC licensing basis does not authorize operation of the reactor.

NextEra has been executing activities described in the Post Shutdown Decommissioning Activities Report, which was submitted to the NRC on April 2, 2020 (Reference 4).

While NRC regulations do not prescribe a specific regulatory path for reinstating operational authority following docketing of the 10 CFR § 50.82(a)(1) certifications, the NRC has issued guidance in the form of IMC 2562, which recognized that existing NRC regulatory framework—namely the process of reviewing and approving exemption and license amendment requests prescribed by 10 CFR §§ 50.12 and 50.90—provides adequate flexibility to accommodate reauthorization of operations. *See also Reference 5.* Enclosure 1 to this letter describes the regulatory path NextEra intends to follow to support the restoration of the previous DAEC licensing basis and reauthorization of power operations at DAEC. The NRC review of these submittals, along with reinstatement of the oversight process applicable to operating reactors, will ensure that DAEC will only be authorized to resume operations if the NRC has reasonable assurance that it can do so in a manner that protects public health and safety; in conformance with DAEC's operating licensing basis.

The first action in this regulatory path is a request for a one-time exemption from 10 CFR § 50.82(a)(2). With this exemption, the DAEC licensing basis in effect prior to the 10 § CFR 50.82 certifications can be restored through the 10 CFR § 50.90, "Application for amendment of license, construction permit, or early site permit", license amendment request process for the DAEC RFL, Technical Specifications, and other programmatic requirements.

Plant programs and regulatory requirements, conforming to DAEC's operating licensing basis will be reinstated. Actions under NRC Orders that were not completed due to DAEC decommissioning, will be evaluated for applicability, and docketed for completion as appropriate. DAEC commitments to the NRC closed due to 10 § CFR 50.82 certifications will be evaluated and reinstated as appropriate.

Exemptions specific to a plant undergoing decommissioning, granted for DAEC by the NRC and no longer applicable to an operating reactor will be rescinded. Finally, the Defueled Safety Analysis Report will be restored to the Updated Final Safety Analysis Report in effect prior to the 10 § CFR 50.82 certifications. This will include the safety reclassification of systems, structures, and components to support an operating reactor.

NextEra is undertaking this initiative because of demand for large-scale clean and reliable electricity.

Additionally, NextEra plans to submit an application for Subsequent License Renewal ("SLR"), as many of the activities planned for restart of DAEC will also support SLR. NextEra believes that performing both reviews in parallel will result in some efficiencies for NRC staff.

This letter contains no new and no revised regulatory commitments.

If you have any questions regarding this matter, please contact Robert Craven, Vice President Nuclear, at 561-805-2554.

Sincerely,

Robert Coffey
Executive Vice President, Nuclear Division and Chief Nuclear Officer

Enclosure: Duane Arnold Energy Center Regulatory Path to Reauthorization of Power Operations

Cc: NRC Region III Administrator
NRC Decommissioning Inspector
NRC NMSS Project Manager
Designated Iowa State Official

Enclosure to
L-2025-001
Duane Arnold Energy Center
Regulatory Path to Reauthorization of Power Operations

Duane Arnold Energy Center
Regulatory Path to Reauthorization of Power Operations

This enclosure provides a regulatory path to allow the reauthorization of power operations at Duane Arnold Energy Center ("DAEC") within current U.S. Nuclear Regulatory Commission ("NRC") regulations. Also included are NextEra Energy Duane Arnold, LLC ("NextEra") plans for personnel training, site staffing, supporting the restoration of the NRC reactor oversight process ("ROP"), returning systems, structures, and components ("SSCs") to operability/functionality, restoration of the DAEC power operations licensing basis, and other actions. In addition, the plan will provide a preliminary milestone schedule. Since this regulatory path relies upon current NRC regulations and guidance, and will require NRC review and approval, it provides reasonable assurance that NextEra can safely return DAEC to power operations in a manner that protects public health and safety in conformance with DAEC's operating licensing basis.

Background

By letter dated August 27, 2020, NextEra certified under 10 CFR § 50.82(a)(1)(i) that it had permanently ceased power operations at DAEC. By letter dated October 12, 2020, NextEra certified under 10 CFR § 50.82(a)(1)(ii), that the fuel was permanently removed from the DAEC reactor vessel and placed in the spent fuel pool. In accordance with 10 CFR § 50.82(a)(2), "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". Also, Amendment 311 to the DAEC Renewed Facility License ("RFL") was issued on July 10, 2020, to reflect a permanently defueled status, where operation of the reactor is not permitted. Thus, the current DAEC licensing basis does not authorize operation of the reactor. No major decommissioning activities, as defined by 10 CFR § 50.2, have been initiated at DAEC since the 10 CFR § 50.82 certifications were submitted.

Regulatory Path

The planned regulatory path to the reauthorization of power operations is consistent with NRC Inspection Manual Chapter ("IMC") 2562, "Light Water Reactor Inspection Program for Restart of Reactor Facilities Following Permanent Cessation of Power Operations." This approach includes a one-time exemption from 10 CFR § 50.82(a)(2), "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," for DAEC. With this supporting exemption, the pre-decommissioning DAEC licensing basis can be restored through the 10 CFR § 50.90, "Application for amendment of license, construction permit, or early site permit", license amendment request ("LAR") process for the DAEC RFL, Technical Specifications ("TS"), and other regulatory programs. These submittals include:

- An exemption request from 10 CFR § 50.82(a)(2), per 10 CFR § 50.12, "Specific exemptions," to allow fuel to be loaded into the reactor vessel and to reauthorize reactor operation;
- A LAR, per 10 CFR § 50.90, to update the Renewed Facility License to a Renewed Operating License and TS (including Administrative Controls such as Licensed Operator Requirements) to

the previously-approved state at the time of shutdown, thereby allowing the resumption of power operations;
- The Final Safety Analysis Report that NextEra projects it will use for DAEC restart will be submitted;
- LARs per 10 CFR 50.90, to reinstate the DAEC Emergency Plan and Emergency Action Levels, Physical Security Plan and Cyber Security Plan for an operating reactor.

Additionally, plant regulatory programs and TS programs for an operating reactor (i.e., the licensing basis for an operating reactor) will be revised/reinstated as appropriate. Examples of these programs are:

- NFPA-805 Fire Protection Program;
- Containment Isolation Program – Per reinstated DAEC TS, including consideration to conduct an integrated leakage rate test;
- Emergency Operating Procedures – Per reinstated DAEC TS;
- Quality Assurance Program – Revise scope applicable to an operating reactor per 10 CFR § 50.54(a)[1];
- Inservice Inspection Program – Revise scope applicable to an operating reactor per 10 CFR § 50.55a, "Codes and standards," and submit supporting Relief Requests;
- Maintenance Rule Program – Revise scope applicable to an operating reactor per 10 CFR 50.65, "Requirements for monitoring the effectiveness of maintenance at nuclear power plants;"
- Aging Management Program – Revise scope applicable to an operating reactor per NUREG-1995, "Safety Evaluation Report Related to the License Renewal of Duane Arnold Energy Center."

Due to DAEC entering decommissioning, some actions associated with NRC Orders and industry initiatives were not applicable. NextEra will review these Orders and initiatives for applicability to resumed operations, with docketing of plans to complete the actions, as appropriate.

DAEC commitments to the NRC applicable to power operations were closed based on the 10 CFR § 50.82 certifications. NextEra will evaluate prior commitments that used cessation of operations as a basis for closure to determine what commitments need to be reinstated. This will be completed per the guidance in NEI 99-04, "Guidelines for Managing NRC Commitment Changes."

Exemptions specific to a plant undergoing decommissioning, that were granted for DAEC by the NRC, and that are no longer applicable to an operating reactor, will need to be rescinded. Examples of exemptions that do not apply to an operating reactor are:

- Certified Fuel Handlers Severe Weather Authority
- Record Keeping
- Use of Decommissioning Funds for Spent Fuel Management

Finally, the Defueled Safety Analysis Report will be restored to the Updated Final Safety Analysis Report that was effective prior to the 10 CFR § 50.82 certifications, with the addition of the reauthorization of power operations actions and any other required changes, as appropriate. This will include the safety

[1] NextEra is developing a transitional Quality Assurance Program for the work associated with Duane Arnold restoration efforts, which will be implemented under 10 CFR § 50.54(a)(3).

reclassification of SSCs to support an operating reactor. This restoration is expected to be accomplished under the 10 CFR § 50.59, "Changes, tests, and experiments," process.

Environmental

IMC 2562 provides: "It is anticipated that the NRC's review of licensing actions to restore the operating basis of the facility will occur concurrently with the implementation of the Restart of Reactor Facilities Inspection Process." Along with the licensing actions to restore the operating basis of the facility, NextEra will submit an Environmental Report to the NRC that provides the necessary information for NRC to conduct an Environmental Assessment pursuant to the National Environmental Policy Act. NextEra will also work with other state and federal agencies to obtain any other environmental permits and reviews required to restore the reactor operations.

Personnel Training

Regulatory-required training programs scope will be reinstated/revised to ensure qualified personnel are available to support reactor operations.

- Senior Reactor Operator and Reactor Operator License training, which will include NRC support for examination and license issuance;
- Emergency Planning response personnel training and drill performance, which will include NRC support for graded exercises;
- Radiation Protection and Chemistry Technician training;
- Maintenance personnel training;
- Security personnel training.

Site Staffing

NextEra recognizes that additional site staffing will be required to support an operating reactor. NextEra has developed a staffing plan that will gradually increase site and fleet staff to support initial inspections, facility renovations, and finally startup and operations. The schedule recognizes the need to develop training infrastructure, which will be in place to meet personnel qualifications necessary to perform the designated work.

NRC Oversight

In addition to licensee actions, NextEra understands that the NRC will establish a restart panel that helps coordinate oversight and addresses other matters related to restart, such as NRC review of requested licensing actions to authorize restart, as discussed in IMC 2562.

SSC Operability/Functionality

SSCs will be tested and maintained to support TS operability and licensing basis functionality. Each required SSC (e.g., large motors, transformers, turbines, fuel handling equipment, main generator and generator controls, emergency diesel generators, etc.) where configuration control was not maintained due to decommissioning, will be included in a return-to-service plan. These plans will use risk insights to prioritize inspections, testing and corrective and preventative maintenance. System configuration

control will be verified through the performance of system checklists. Surveillance testing will be performed as required by TS before entering the TS mode of applicability. Outstanding procedure changes will be prioritized using risk insights to support required SSC inspections, maintenance, operation, and testing.

Administrative Programs

Since shutdown and transition to decommissioning NextEra has continued to maintain regulatory administrative requirements for a facility in decommissioning. For example:

- Record Retention Program
- Corrective Action Program
- Nuclear Safety Culture Program

NextEra plans to revise these programs to support the DAEC transition back to an operating reactor, as required.

Conclusion

Since this regulatory path is in accordance with current NRC regulations and guidance, and submittals will require NRC review and approval, the regulatory path provides NRC with reasonable assurance that it can protect public health and safety during the transition to DAEC restart and restoring DAEC's operating licensing basis.

Indicative Schedule	**Target Date**
Submit Request for Exemption from 10 CFR 50.82	First Quarter 2025
Submit LARs to update the Facility License and TS (including Administrative Controls such as Licensed Operator Requirements) to the previously-approved state at the time of shutdown, thereby allowing the resumption of power operations.	Third Quarter 2025
Submit LARs to reinstate the DAEC: Physical Security Plan; Cyber Security Plan; and Emergency Plan and Emergency Action Levels for an Operating Reactor	Fourth Quarter 2025
Submit Application for Subsequent License Renewal	Fourth Quarter 2025
Submit Operational Readiness Letter to verify and document the completion of plant restoration activities and serve as notice that the facility is ready to load fuel and to recommence commercial operations.	First Quarter 2028
NRC Authorization to support initial reactor fuel loading	Second Quarter 2028
Indicative Duane Arnold Restart Commercial Operations Date	Fourth Quarter 2028

Communications Plan

NextEra intends to communicate progress towards finalizing plans to pursue reauthorization of power operations at DAEC through a series of meetings with the NRC Office of Nuclear Reactor Regulation, NRC Region III, licensing action pre-submittal meetings, and periodic DAEC NRC Project Manager status meetings.