



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

February 6, 2026

Kenneth A. Mack, Director  
Licensing and Regulatory Compliance  
Florida Power & Light Company  
15430 Endeavor Drive  
Jupiter, FL 33478

SUBJECT: ENVIRONMENTAL REGULATORY AUDIT REGARDING THE PROPOSED  
REAUTHORIZATION OF POWER OPERATIONS FOR DUANE ARNOLD  
ENERGY CENTER UNDER RENEWED FACILITY OPERATING LICENSE  
NUMBER DPR-49 (EPID NUMBER: L-2025-LNE-0009) (DOCKET NUMBER:  
50-331)

Dear Kenneth Mack:

NextEra Energy Duane Arnold, LLC (NEDA) submitted a series of licensing and regulatory requests that are necessary to reauthorize power operations at the Duane Arnold Energy Center (DAEC) through February 21, 2034, the end of the current operating license term under DAEC's Renewed Facility Operating License No. DPR-49. Specifically, by letters dated January 23, 2025, November 20, 2025, December 17, 2025, and January 30, 2026, NEDA submitted an exemption and three license amendment requests to support resumption of power operations at DAEC<sup>1</sup>. In addition, by letter dated November 10, 2025, NEDA submitted to the U.S. Nuclear Regulatory Commission (NRC) an environmental report (Agencywide Documents Access and Management System (ADAMS) Accession No. ML25315A003) to support the staff in performing its associated environmental review.

Collectively, these requests define the proposed NRC Federal actions, that is, for the NRC to determine whether to grant or deny the requests necessary to reauthorize power operations at DAEC.

The NRC staff has initiated its environmental review associated with the referenced requests and associated connected actions. An environmental audit will be conducted by NRC staff in March 2026: a virtual audit the week of March 2, 2026, and a site visit on March 18, 2026. The environmental audit activities will be conducted in accordance with the enclosed Environmental Audit Plan (Enclosure 1).

To the extent possible, the NRC staff requests the information identified in the Environmental Audit Needs List (Enclosure 2) be made available on the DAEC online reference portal prior to the audit. A draft schedule of tours and meetings is provided in Enclosure 3.

---

<sup>1</sup> ADAMS Accession Nos. ML25023A270, ML25324A300, ML25363A083, and ML26033A048, respectively.

If you have any questions, please contact me at 301-415-1335 or via email at [Kimberly.Conway@nrc.gov](mailto:Kimberly.Conway@nrc.gov).

Sincerely,



Signed by Conway, Kimberly  
on 02/06/26

Kim Conway  
Senior Environmental Project Manager  
Environmental Project Management Branch 1  
Division of Rulemaking, Environmental,  
and Financial Support  
Office of Nuclear Material Safety  
and Safeguards

Docket No. 50-331

Enclosures:

1. Environmental Audit Plan
2. Environmental Audit Needs List
3. Draft Schedule of Tours and Meetings
4. Staff Responses to U.S. Fish and  
Wildlife Service Qualification Interview  
Questions (non-public)

cc w/encls: GovDelivery

SUBJECT: ENVIRONMENTAL REGULATORY AUDIT REGARDING THE PROPOSED REAUTHORIZATION OF POWER OPERATIONS FOR DUANE ARNOLD ENERGY CENTER UNDER RENEWED FACILITY OPERATING LICENSE NUMBER DPR-49 (EPID NUMBER: L-2025-LNE-0009) (DOCKET NUMBER: 50-331)

DATED: February 6, 2026

**DISTRIBUTION:**

PUBLIC

RidsNrrDorl Resource

RidsNrrDorlLpl3 Resource

RidsNrrPMDuaneArnold Resource

RidsNMSSDuwpRdb Resource

RidsNMSSRefs Resource

RidsRgn3MailCenter Resource

**ADAMS Accession Number: ML26030A013**

OFFICE	PM:REFS/EPMB1	LA:REFS/EPMB2	BC:REFS/EPMB1	PM:REFS/EPMB1
NAME	KConway	AWalker-Smith	SKoenick	KConway
DATE	1/30/2026	2/4/2026	2/5/2026	2/6/2026

**OFFICIAL RECORD COPY**



## **Audit Plan**

# **Environmental Review of the Proposed Reauthorization of Power Operations for Duane Arnold Energy Center**

**February 2026**

**Division of Rulemaking, Environmental,  
and Financial Support  
Office of Nuclear Material Safety  
and Safeguards  
U.S. Nuclear Regulatory Commission**

# **Environmental Review of the Proposed Reauthorization of Power Operations Duane Arnold Energy Center**

## **1. Background**

NextEra Duane Arnold, LLC (NEDA) submitted a series of licensing and regulatory requests that are necessary to reauthorize power operations at the Duane Arnold Energy Center (DAEC) through February 21, 2034, the end of the current operating license term under DAEC's Renewed Facility Operating License No. DPR-49. Specifically, by letters dated January 23, 2025, November 20, 2025, December 17, 2025, and January 30, 2026, NEDA submitted an exemption and three license amendment requests to support resumption of power operations at DAEC (Agencywide Documents Access and Management System (ADAMS) Accession Nos. ML25023A270, ML25324A300, ML25363A083, and ML26033A048). In addition, by letter dated November 10, 2025, NEDA submitted to the NRC an environmental report (ER) (ML25315A003) to support the NRC staff in performing its associated environmental review.

Collectively, these requests define the proposed U.S. Nuclear Regulatory Commission (NRC) Federal actions, that is, for the NRC to determine whether to grant or deny the requests necessary to reauthorize power operations at DAEC.

The NRC staff is conducting an environmental audit of the DAEC site to improve understanding, to verify information, and to identify information for docketing to support the preparation of an environmental assessment (EA). Specifically, the NRC staff will be identifying pertinent environmental data, reviewing the facility, and seeking clarifications regarding information provided in the ER.

## **2. Environmental Audit Bases**

The NRC's implementing regulations (Title 10 of the Code of Federal Regulations (10 CFR) Part 51, "Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions.") define specific actions under the National Environmental Policy Act, as amended (NEPA), which require different levels of environmental analyses, including an environmental impact statement (EIS), EA, or categorical exclusion. The NRC does not have a prescribed regulatory framework to reauthorize power operations, and the proposed Federal actions are not identified as an action requiring an EIS under 10 CFR § 51.20, "Criteria for and identification of licensing and regulatory actions requiring environmental impact statements." The NRC staff has determined that the appropriate level of NEPA review is an EA. An EA is appropriate to determine if a Finding of No Significant Impact can be made or if, based on the EA, an EIS is appropriate. Given the NRC staff is preparing an EA, much of the regulatory basis is centered in 10 CFR 51.41 "Requirement to submit environmental information." Where applicable, the staff's associated environmental review will be performed in accordance with the Office of Nuclear Reactor Regulation Office Instruction LIC-203, Revision 4, "Procedural Guidance for Preparing Categorical Exclusions, Environmental Assessments, and Considering Environmental Issues" (ML20016A379).

## **3. Environmental Audit Scope**

The audit will focus on information provided in NEDA's ER and supporting documentation. The scope of this environmental audit is to ensure the NRC staff has the information necessary to complete an EA and to identify issues which are significant and those which can be eliminated

from detailed analysis. Audit team members will review the documents and other requested information made available on the DAEC online reference portal identified on the environmental audit needs list (Enclosure 2) and discuss any questions and additional information needs with the applicant's subject matter experts (SMEs).

**4. Information and Other Material Necessary for the Environmental Audit**

As identified on the environmental audit needs list (Enclosure 2).

**5. Environmental Audit Team Members and Resource Assignments**

The environmental audit team members and their assignments are shown in the table below.

<b>Discipline</b>	<b>NRC/PNNL Team Members</b>
Environmental Review Supervisor	Steve Koenick
Environmental Project Manager	Kim Conway
Environmental Project Manager	Kevin Folk
Air Quality	Nancy Martinez
Aquatic Resources	Shannon Healy; Caitlin Wessel, PNNL
Federally Protected Ecological Resources	Briana Arlene; Dana Vesty, PNNL
Geologic Environment	Gerry Stirewalt, Kevin Folk
Greenhouse Gases/Climate Change	Nancy Martinez
Groundwater (Hydrology and Hydrogeology)	Gerry Stirewalt, Kevin Folk
Historic and Cultural Resources	Jennifer Davis; Cyler Conrad, PNNL
Human Health	Rao Tammara
Land Use and Visual Resources	Jeffrey Rikhoff
Meteorology and Climatology	Nancy Martinez
Noise	Nancy Martinez
Postulated Accidents	William Rautzen, John Parillo
Reasonable Alternatives	Bradley Werling
Severe Accident Mitigation Alternatives	William Rautzen, John Parillo
Socioeconomics	Jeffrey Rikhoff
Spent Nuclear Fuel	Rao Tammara
Surface Water	Lloyd Desotell
Termination of Operations and Decommissioning	Rao Tammara
Terrestrial Resources	Briana Arlene; Dana Vesty, PNNL
Uranium Fuel Cycle	Rao Tammara
Waste Management (Rad and Non-Rad)	Rao Tammara

**6. Logistics**

An environmental audit will be conducted remotely during the week of March 2, 2026, followed by a site visit on March 18, 2026. An entrance meeting will be held at the beginning of the audit and an exit meeting will be held following the site visit.

## **7. Special Requests**

NEDA staff and contractors who are SMEs in the disciplines identified on the environmental audit needs list should be available for interviews and tours.

## **8. Deliverables**

An audit summary report will be issued by the NRC staff within 30 days from the end of the environmental audit.

## Duane Arnold Energy Center Restart Audit and Information Needs

Described below in three categories (i.e., tours, meetings, and information needs) are the information needs of the U.S. Nuclear Regulatory Commission (NRC) staff, supported by Pacific Northwest National Laboratory (PNNL), related to the submittals necessary to reauthorize power operations at Duane Arnold Energy Center (DAEC). Information needs are identified as either resource-specific questions or document requests. Please arrange for the tours and meetings to occur during either the virtual environmental audit or site visit, as specified below. Additionally, the staff requests responses to the information needs related to the November 2025 Environmental Report (ER) (Agencywide Documents Access and Management System (ADAMS) Accession No. ML25315A003) and related environmental matters be made available on the electronic portal at least one week prior to the start of the audit. The staff further requests that subject matter experts (SMEs) be available to discuss these items with the NRC staff.

### Virtual Tours

Please arrange for, and provide appropriate SMEs to contribute to, the following virtual tours.

Title or Number	Features Observed	Participants
General site	Virtual walk-through of the following via photographs and/or diagrams: <ul style="list-style-type: none"> <li>• Exterior grounds of the DAEC site and vicinity</li> <li>• In-scope transmission lines</li> <li>• Historic and cultural sites</li> <li>• Independent Spent Fuel Storage Installation</li> <li>• Plant views from publicly accessible areas</li> <li>• Location of major facilities and structures that have been or will be refurbished or replaced as part of preparations for the resumption of operations</li> <li>• Locations of new cooling towers, buildings, or other structures that will be constructed and locations of any other ground-disturbing activities associated with the restart</li> </ul>	All NRC and PNNL staff
Plant intake and discharge	Virtual walk-through of the following via photographs and/or diagrams: <ul style="list-style-type: none"> <li>• Intake and views of surrounding area</li> <li>• Intake bays</li> <li>• Intake traveling screens and trash baskets</li> <li>• Cooling Water Intake System pathway from intake to discharge</li> <li>• Discharge pathway during heavy precipitation</li> </ul>	All NRC and PNNL staff

	(weir and open canal flow path) <ul style="list-style-type: none"> <li>• Supplemental water pathway from Pleasant Creek Reservoir to Cedar River and replenishment pathway from river to reservoir</li> <li>• Discharge and views of surrounding area</li> </ul>	
--	--	--

**In-person Tours**

Please arrange for, and provide appropriate SMEs to contribute to, the following in-person tours as part of the NRC’s site visit.

<b>Title or Number</b>	<b>Features Observed</b>	<b>Participants (Tentative)</b>
General site and features	Driving or walking survey of the following: <ul style="list-style-type: none"> <li>• Plant views from publicly accessible areas</li> <li>• Exterior grounds of the DAEC site and vicinity, including major plant structures</li> <li>• Location of major facilities and structures that have been or will be refurbished or replaced as part of preparations for the resumption of operations, particularly those with ground disturbance</li> <li>• Locations of new cooling towers, buildings, or other structures that will be constructed and locations of any other ground-disturbing activities associated with the restart</li> <li>• Cooling water intake system pathway from intake to main discharge structure</li> <li>• Historic and cultural sites</li> </ul>	Steve Koenick, Kim Conway, Kevin Folk, Jennifer Davis (NRC); Cyler Conrad (PNNL)

**Meetings**

Please be prepared to support the specified breakout meetings with the appropriate SME(s) and/or contractor(s) concerning the following topics. Those in attendance should be prepared to discuss the corresponding questions as described in the “Information Needs and Document Requests” section below. The staff intends to use these breakout meetings, as needed, to resolve or clarify any outstanding data needs or questions arising from the environmental audit. The NRC intends to leverage virtual breakouts to the extent possible. As necessary, the NRC will request any in-person breakouts following the virtual audit.

- General Topics (virtual)
- Air Quality and Noise (virtual)
- Geologic Environment (virtual)
- Water Resources (Surface and Groundwater) (virtual with any necessary follow-up on site)

- Ecological Resources (Terrestrial, Aquatic, and Federally Protected Ecological Resources) (virtual)
- Historic and Cultural Resources (virtual and in-person)
- Human Health (virtual)
- Waste Management (virtual)
- Spent Nuclear Fuel (virtual)
- Greenhouse Gas Emissions and Climate Change (virtual)
- Postulated Accidents/Severe Accident Mitigation Alternatives (SAMA) (virtual)

### **Information Needs and Document Requests**

Information needs and document requests are identified below by environmental resource area. Issues applicable to these questions are provided along with the responsible NRC staff, and any supporting PNNL staff, as appropriate.

### **General Information Requests (All)**

The following requests are generic to more than one environmental resource area.

#### *Audit Needs*

**GEN-1** Section 2.2.4 of the ER (Tables 2.2-1 and 2.2-2) summarizes the permits and approvals DAEC currently possesses or those that NextEra Energy Duane Arnold, LLC (NEDA) has plans to modify, or request reinstatement of, to support the resumption of DAEC operations. Provide any status updates to the listed information including schedule(s) for completing application submittals. Note: the NRC staff may request copies of major new or modified permits and/or applications for review.

**GEN-2** Section 2.2.1 of the ER states that activities for the resumption of power operations are expected to include construction of several new buildings, restoration, upgrades, and maintenance occurring within already disturbed areas. Section 2.2.1 of the ER states “[a]s shown in Figure 2.1-1, the locations of potential construction at DAEC are mostly limited to previously disturbed land within the operational area. Also shown in Figure 2.1-1, DAEC has sufficient area onsite that has been previously disturbed (due to construction or operations activities) upon which to conduct restart activities.” However, Figure 2.1-1 does not identify the locations of potential construction at DAEC.

Provide a listing and brief description of the site structures and facilities that will need to be, or have already been, refurbished and/or modified or replaced as referenced in the ER and summarize the nature of the restoration activities including the area affected (i.e., size, location, and if any area is previously undisturbed land), and timeframe of preparation activities for the resumption of power operations. Characterize the ground disturbing impacts by temporary and permanent impacts. Illustrate the project locations on a suitable map of the DAEC site, if possible.

**GEN-3** DAEC previously operated mechanical draft cooling towers, which were removed in the fall of 2020. As noted in Section 2.2.3 of the ER, these systems are expected to be replaced prior to the restart of DAEC with new towers that are anticipated to perform similarly to the original systems. Specify the anticipated location of the new

cooling towers and any potential changes to existing or planned permits (e.g., National Pollutant Discharge Elimination System [NPDES] permit) that may result from this replacement.

- GEN-4** Section 2.2.1 of the ER states that NEDA expects the number of employees required at DAEC for resumed power operations and outages to be similar to the operations and outage workforces in 2019. Additionally, the ER states that the restart and construction workforce are expected to be similar to the typical, previous outage workforce but for a longer duration. Provide the 2019 operations and outage workforce.

#### *Document Needs*

None identified at present.

### **Environmental Review Topic-Specific Requests**

The following requests are specific to a single environmental review area. If a topic is not provided below, the discussions held in response to the generic requests above are expected to fully cover that topic.

#### **Air Quality, Meteorology, Climatology** (Nancy Martinez, NRC)

##### *Audit Needs*

- AQN-1** Clarify whether the on-site meteorological tower/monitoring system has remained in operation. If available, also provide the following on-site meteorological data for the last five years to assist the NRC staff with describing meteorological characteristics of the site and vicinity:

- Average monthly and annual temperature
- Average monthly and annual precipitation
- Average annual wind speed
- Prevailing wind direction

- AQN-2** Section 4.7.1 of the ER states that emissions during preparations for resumption of power operation are expected to be similar to the 2020 through 2022 levels shown in Table 3.7-1 of the ER. Section 4.7.1 of the ER further states emissions expected during preparation activities include those from mobile equipment required for the completion of emission unit maintenance and required endurance testing prior to restart. Emissions due to the preparations for the resumption of power operations are expected to be less than the emissions due to operation, and the environmental impacts of air emissions are expected to be not significant. Table 3.7-1 of the ER, however, includes emissions from permitted equipment between 2020 and 2022 and does not account for other activities identified in Section 2.2.1 of the ER. Provide estimated criteria air pollutant emissions associated with preparations for resumption of power operations to account for the activities identified in Section 2.2.1 of the ER including but not limited to construction equipment for the construction of several new buildings and transmission lines, fugitive emissions from ground disturbance, delivery vehicles, worker vehicles, and mobile equipment required for the completion

of emission unit maintenance and testing. As part of the response, provide all assumptions and calculations supporting estimated criteria air pollutant emissions.

- AQN-3** Section 2.2.4 of the ER states that the new cooling towers are exempt from major Title V permitting and NEDA is evaluating whether a local Linn County permit is needed for the cooling towers. Section 3.7 of the ER states that the new cooling towers are exempt from major Title V permitting but require a local Linn County permit. Clarify if the new cooling towers will require a local Linn County permit.
- AQN-4** Section 4.7.2 of the ER states that new air permits are anticipated for resumption of power operations and will include emission units listed in Table 2.2-2 of the ER, which include an auxiliary boiler, standby diesel generators, and a diesel pump. The ER further states that these emission units are the same units listed in the previous air permit and therefore emissions are expected to be similar to emissions for year 2015-2019 presented in Table 4.7-1 of the ER. Table 4.7-1, however, does not appear to account for air emissions from the cooling towers. Provide estimated annual air particulate matter emissions from the cooling towers that will be in operation. As part of the response, provide assumptions and calculations supporting estimated particulate matter.
- AQN-5** Table 2.2-2 of the ER lists new permits NEDA intends to apply for or reinstate. Table 2.2-2 of the ER identifies an air quality construction permit from the Linn County Health Department to authorize installation and operation of air pollutant emission sources, including an auxiliary boiler, emergency diesel generators, fire pump, and minor support sources. Clarify whether NEDA plans to replace the existing auxiliary boiler (Permit No. 4863), emergency diesel generators (Permit Nos. 4864 and 4865), and fire pump (Permit No. 4866) and install new equipment or apply for new operation permits for the existing equipment.
- AQN-6** Section 2.2.3 of the ER states that prior to restart, new cooling towers will be replaced and are anticipated to perform similarly to the original systems. Cooling tower consumption volumes and operational parameters are expected to remain within historical bounds. Confirm and/or provide the following information regarding the new cooling towers:
- a) will consist of two mechanical forced draft cooling towers
  - b) monthly and/or seasonal and annual plume lengths
  - c) monthly and/or seasonal and annual additional hours of fogging and icing
  - d) monthly and/or seasonal and annual amounts and locations of salt deposition
  - e) monthly and/or seasonal and annual increases in humidity and precipitation
  - f) potential local weather modification from cloud formation/shadowing

*Document Needs*

None identified at present.

## **Noise** (Nancy Martinez)

### *Audit Needs*

- NOI-1** The ER mentions noise impacts within the context of various resource area discussions, but noise impacts from restart activities and operation of the facility are not fully considered. The NRC's 2010 license renewal final supplemental environmental impact statement (FSEIS) (NUREG-1437, Supplement 42; ML102790308) identified that the most significant noise sources associated with the plant are cooling towers, transformers, and circuit breakers. Provide the following information:
- a) Primary noise sources during preparation activities for resuming power operations.
  - b) Distance between the nearest noise sensitive receptor(s) and primary noise sources during preparation activities for resuming power operations.
  - c) Whether there are any additional primary noise sources from operations of DAEC other than those identified in the NRC's 2010 FSEIS.
  - d) Distance between the nearest noise sensitive receptor(s) and primary noise sources during operations of DAEC.
- NOI-2** Discuss whether there are anticipated noticeable increases in noise levels at noise sensitive receptors from preparation activities for resuming power operations and from operations of DAEC. Provide a basis for why they would or would not be noticeable.
- NOI-3** Did NEDA receive any noise complaints during the 5-year period prior to plant shutdown in 2020? If so, provide a discussion regarding the noise complaints and any actions taken by NEDA with respect to the noise complaints.
- NOI-4** Has NEDA conducted any on-site or off-site noise surveys during previous facility operations? If so, provide a copy of the survey(s) for review.

### *Document Needs*

None identified at present.

## **Geologic Environment** (Gerry Stirewalt, NRC; Kevin Folk, NRC)

### *Audit Needs*

None identified at present.

### *Document Needs*

- GE-1** Section 3.2.1 of the ER provides a general description of site hydrogeology and water-bearing units beneath the DAEC site. Section 4.2.1.2 of the ER states that characterization of site geology and hydrology is performed and that the site conceptual model is updated as necessary, including the establishment of new [groundwater] sampling locations. Provide for review the site conceptual model report including the most current geologic/hydrogeologic cross-section and/or geologic/hydrogeologic column.

## **Water Resources - Surface Water** (Lloyd Desotell, NRC)

### *Audit Needs*

- SW-1** Section 2.2.1 of the ER states that DAEC has started comprehensive evaluations to assess the status of plant systems and equipment in support of resumption of power operations. Confirm that inspections of the intake, discharge and stormwater systems will occur to ensure their operability to support resumption of power operations. Provide a brief description of the inspection protocols with reference to the relevant procedures.
- SW-2** Describe any hydrologic alterations, and the effects of these alterations, from activities conducted to resume operations.
- SW-3** Section 3.1 of the ER states that the expansion of the existing switchyard may extend south of the previously disturbed area while Section 4.2.2.1 of the ER states, “Planned activities are expected to occur in previously disturbed areas, reducing potential impact to surface water quality.” Please resolve this apparent discrepancy.
- SW-4** Section 3.2.2.2 of the ER states that no formal enforcement actions were issued regarding DAEC’s NPDES permit in the last 5 years (2020 through 2024). The U.S. Environmental Protection Agency (EPA) Enforcement and Compliance History Online (ECHO) website ([Detailed Facility Report | ECHO | US EPA](#)) does however indicate multiple reportable non-compliances over this timeframe. Provide a brief description of these non-compliances and any actions taken to address them.
- SW-5** What is the status of the Clean Water Act Section 401 water quality certification for resumption of DAEC power operations? Provide a copy of correspondence with the State.
- SW-6** Section 4.2.2.1 of the ER states that NEDA would apply for a sewage treatment construction permit if ultraviolet light treatment is added to the existing domestic wastewater treatment plant. Provide any updates regarding this potential action (see also GEN-1).

### *Document Needs*

- SW-7** Provide a copy of the site Stormwater Pollution Prevention Plan for review.

## **Water Resources - Groundwater Resources** (Gerry Stirewalt, NRC; Kevin Folk, NRC)

### *Audit Needs*

- GW-1** Section 4.2.1.1 and Table 2.2-2 of the ER mention installation of a temporary potable water system and its operation to serve individual buildings until the former potable water system is restored. Provide a brief description of the system (capacity, treatment, etc.) and clarify how much groundwater withdrawal is anticipated during operations of the systems throughout preparations for and resumption of DAEC operations, as compared to the potable water projection presented in Section 4.2.1.2 of the ER. In addition, clarify whether groundwater supplied by the plant’s four-well system requires treatment for potability.
- GW-2** Section 3.2.1.1 of the ER references a water supply well (Permit No. 58665) installed in February 2022. Clarify whether this well will continue to be used subsequent to the resumption of power operations once the four-well potable water system is restored.

**GW-3** Sections 3.2.1.2 and 4.2.1.2 of the ER suggest that the groundwater protection monitoring well network was reduced from 56 to 31 wells. Clarify whether NEDA plans to restore any or all of the unmonitored wells prior to or following the resumption of power operations. If not, briefly describe the reasons for maintaining the reduced well network.

*Document Needs*

**GW-4** As referenced in Sections 3.2, 4.2.1, and Table 2.2-1 of the ER, provide a copy of Water Use Permit 3046-R7 for review.

**GW-5** Table 3.2-1 of the ER summarizes groundwater and surface water withdrawal volumes for the period 2020–December 2024. Provide updated information for 2025.

**Terrestrial Resources** (Briana Arlene, NRC; Dana Vesty, PNNL)

*Audit Needs*

**TER-1** Table 2.1-2 of the ER states that the essential service water system is deactivated and site water needs are supported by onsite wells. Confirm whether NEDA plans to activate this system again and whether construction on the utility corridor will be required.

**TER-2** Section 2.2.3 of the ER mentions the two potential transmission line configurations, which are currently under evaluation. For areas that are currently non-developed, what is the bounding permanent impact for the potential transmission line configurations?

**TER-3** Section 3.1 of the ER states that Pleasant Creek Solar now occupies 40 acres of DAEC's site and adjacent area and since 2019, the general character of the surrounding area has largely remained the same. If available, provide an updated land cover breakdown of the site.

**TER-4** Section 3.3.1.4.2 of the ER describes the solar project vegetation management plan for managing and sustaining vegetation throughout the solar facility. Will NEDA conduct vegetation management around DAEC in a similar manner to what is described in this vegetation plan? As applicable, provide a brief description of any anticipated changes in vegetation management around DAEC.

**TER-5** Section 3.3.1.5 of the ER states that DAEC does not currently maintain site-specific permits related to terrestrial ecology. Section 2.2.6 of the NRC's 2010 FSEIS states that DAEC held a U.S. Fish and Wildlife Service (FWS) permit for depredation of turkey vultures. Will DAEC reapply for this permit or any other take permits following the restart?

**TER-6** Section 2.2.6 of the NRC's 2010 FSEIS mentioned that ospreys were nesting on the 280-foot meteorological tower in 2007 and that the pair returned in 2008. DAEC staff were consulting with Iowa Department of Natural Resources (Iowa DNR) for the potential construction of artificial nesting platforms. Has the osprey pair continued to nest onsite? Did DAEC build an artificial nesting platform?

**TER-7** Section 2.2.7.2 of the NRC's 2010 FSEIS mentioned that eight peregrine falcons were released at a hacking station on the off-gas stack on the DAEC site and did not return to nest in 2002. Have the falcons returned to the site since?

**TER-8** Section 2.2.3 of the ER states that prior to restart, new cooling towers will be replaced and are anticipated to perform similarly to the original systems. However, because nearby vegetation has not experienced cooling tower-related impacts since DAEC shutdown, the NRC staff would anticipate that there could be some observable or measurable impacts to vegetation associated with the initial restart, such as fogging or salt deposition impacts, until vegetation acclimates to cooling tower operation. Describe whether DAEC anticipates such impacts and the nature and extent (spatial, duration, etc.) of these impacts.

#### *Document Needs*

**TER-9** Section 3.3.1.3.2 of the ER states that a field survey was completed in January 2021 to investigate areas within the solar project area that could potentially serve as suitable habitat for listed species. Based on the results of the desktop analysis and a review of species' habitat preferences, the following land cover types within the project study area were determined to be the most likely to support listed species: riverine, herbaceous, hay/pasture, wetland, and forest. Provide a copy of the survey results and desktop analysis for review.

**TER-10** Section 3.3.1.4.2 of the ER describes the solar project vegetation management plan for managing and sustaining vegetation throughout the solar facility. Provide a copy for review.

**TER-11** Section 4.3.1 of the ER states that administrative procedures and protocols and best management practices (BMPs) are anticipated to minimize impacts to terrestrial resources. Provide copies of these administrative procedures and protocols related to terrestrial ecology for review.

#### **Aquatic Resources** (Shannon Healy, NRC; Caitlin Wessel, PNNL)

##### *Audit Needs*

**AQU-1** Section 3.3.3.1.1 of the ER mentions the thermal mixing zone. Provide a map of the current mixing zone with temperatures and any supporting documents.

**AQU-2** Section 4.2.2.1 of the ER states that approximately 2,400,000 gallons of Cedar River water will be required to fill the cooling tower basins in preparation for restart. Provide additional information regarding impacts associated with filling the basins on aquatic resources, including impingement mortality, entrainment, and water use conflicts. Include timing and duration of activities, as well as approximations of the flow rate or consumption of water per minute or day.

**AQU-3** Section 4.2.2.2 of the ER states that during resumption of power operations, impacts to surface water quality from plant discharges are anticipated to be regulated under a modified NPDES permit and stormwater discharges are expected to be regulated under the state general permit. Describe what modifications will need to be made and provide a copy of the applications, if available (see also GEN-1).

**AQU-4** Section 2.2.4 of the NRC's 2010 FSEIS referenced the use of molluscicide treatment for zebra mussels as part of the NPDES permit. Confirm whether molluscicide treatment is anticipated to be utilized during operations and summarize the anticipated frequency, duration, and concentration of treatments.

**AQU-5** In Section 4.2.2.2 of the ER, the Pleasant Creek Reservoir is discussed and it states the Iowa DNR issued Water Use Permit 3533-R4 authorizing release of water from

the reservoir for low-flow augmentation purposes at a rate equal to the consumptive use at DAEC was allowed to expire. Will this permit be renewed as part of the restart? If yes, provide a copy of the expired permit and describe NEDA's plan to acquire the renewed permit (see also GEN-1).

- AQU-6** Does DAEC have a best technology available (BTA) determination for impingement and/or entrainment? If not, provide information about the intake design including any measures to keep aquatic organisms out and the flow rate at each exclusion device (e.g., skimmer wall, trash racks, traveling screens, etc.).
- AQU-7** Describe the potential impacts that the aquatic environment would experience upon initial restart, including impacts related to the resumption of water withdrawals and discharges, related flow regime changes, and potential water use conflicts.
- AQU-8** Please confirm that USGS-05464315 at Cedar River at Vinton, IA is the closest water gauge upstream of DAEC and that USGS-05464420 at Cedar River at Blairs Ferry Road at Palo, IA is the closest downstream gauge.
- AQU-9** Section 3.2.2.2 states that Outfall 003 can be utilized to de-ice the intake structure during the winter and that there are no permit limits associated with discharges from this outfall. Specify how often Outfall 003 has been utilized in the past and whether there are any procedural documents related to its use. If so, provide a copy of the procedures for review.
- AQU-10** Section 3.3.2.3 of the ER states that no aquatic studies have been conducted at DAEC since shutdown. Confirm whether any aquatic studies have been conducted at DAEC since the NRC license renewal review in 2010. If studies have been conducted, provide copies of the reports.

#### *Document Needs*

- AQU-11** Section 3.3.3.4 of the ER states that Iowa DNR's environmental review for this project determined that state threatened, endangered, or special concern species are absent from the project area. Provide a copy of this review.
- AQU-12** Provide copies of any studies or monitoring completed to support a Clean Water Act 316(b) BTA determination for impingement or entrainment and a copy of the 316(b) application submittal.
- AQU-13** Provide a copy of current NPDES Permit No. 5700104, EPA Permit No. IA0003727 and fact sheet, if available.

#### **Federally Protected Ecological Resources** (Briana Arlene, NRC; Dana Vesty, PNNL)

#### *Audit Needs*

- FPE-1** The NRC staff used the FWS's Information for Planning and Conservation system to determine that the proposed action may affect but is not likely to adversely affect the rusty patched bumblebee (*Bombus affinis*). Review the staff's responses to the qualification interview questions in the FWS's January 21, 2026, concurrence letter (Enclosure 4) and confirm that the responses accurately reflect the proposed action.
- FPE-2** Based on the FWS's Northern Long-eared Bat and Tricolored Bat Range-wide Determination Key (Dkey), the NRC staff obtained a determination of "may affect" for the northern long-eared bat (*Myotis septentrionalis*). Review the staff's responses to the qualification interview questions in the FWS's January 21, 2026, technical

assistance letter (Enclosure 4) and confirm that the responses accurately reflect the proposed action.

- FPE-3** In the section of the ER discussing potential impacts to the monarch butterfly (*Danaus plexippus*) and western regal fritillary (*Argynnis idalia occidentalis*), page 4-11 states, “An activity associated with general operations and maintenance is anticipated to undergo environmental compliance reviews that include an evaluation of potential impacts on protected species prior to the start of the activity.” Provide a more detailed description of the evaluation that would occur or provide copies of site procedures that lay out this evaluation.
- FPE-4** Section 4.3.3.1 of the ER states that administrative procedures and protocols and BMPs are anticipated to minimize impacts to terrestrial resources. Provide copies of these administrative procedures and protocols, specifically as they relate to the protection of Federally protected ecological resources.

#### *Document Needs*

None identified at present.

#### **Historic and Cultural Resources** (Jennifer Davis, NRC; Cyler Conrad, PNNL)

##### *Audit Needs*

- HCR-1** Is there new or additional information regarding the planned design option for either the 161 kV or 345 kV electrical transmission lines within the DAEC plant site boundary?
- HCR-2** Is there new or additional information regarding the planned design and potential ground disturbance for the expansion of the existing switchyard onto previously undisturbed areas to the south?
- HCR-3** Has the cultural resources protection plan (CRPP) been updated, or is a revision anticipated as part of the restart project?
- HCR-4** Have the control procedures for excavating, trenching, ground disturbance, and inadvertent discovery of archaeological resources or human remains been updated, or is a revision anticipated as part of the restart project?
- HCR-5** Provide a knowledgeable person to discuss NEDA’s communication or engagement with the Iowa State Historic Preservation Office (SHPO) and/or any Indian Tribes.

##### *Document Needs*

- HCR-6** Provide a copy of the Iowa SHPO letter received on June 30, 2025, as referenced in Section 3.1 of the ER.
- HCR-7** Provide a copy of the reference: Andrew Martin. 2022. Phase I Archaeological Reconnaissance and Architectural History Survey, Duane Arnold Solar Project - Phase I, Linn County, Iowa, as referenced in Section 3.6 of the ER.
- HCR-8** Provide a copy of the reference: Greg Rainka and Shelley Rettig. 2022. Linn – Energy Center NRHP evaluation – NRHP recommendation for the Duane Arnold Energy Center, as referenced in ER Section 3.6.

- HCR-9** Provide a copy of the reference: Andrew V. Martin and Paul Bundy. 2022. Phase I Archaeological Survey of a Proposed Jurisdictional Crossing for the Duane Arnold Solar Project – Phase 1, as referenced in ER Section 3.6.
- HCR-10** Provide for review a copy of the 2009 CRPP as referenced in Section 4.6 of the ER.
- HCR-11** Provide for review a copy of the control procedures for excavating, trenching, ground disturbance, and inadvertent discovery, which supplement the CRPP, as referenced in Section 4.6 of the ER.
- HCR-12** Provide access to DAEC restart communication records with the SHPO and/or Indian Tribes referenced in the ER, along with any other correspondence since submittal of the license application.

### **Human Health (Rao Tammara, NRC)**

#### *Audit Needs*

- HH-1** Please provide the calculated dose to public for the last five full years of plant operation prior to shutdown (2015-2019) to establish the baseline for the plant restart and resumption of operations.

#### *Document Needs*

None identified at present.

### **Waste Management (Rao Tammara, NRC)**

#### *Audit Needs*

- WM-1** Non-radiological waste would be generated during the preparation of resumption of power operations. In Section 4.9.1 of the ER, there is no discussion of a potential increase in non-radiological waste generation and resulting impacts. Clarify or provide a brief discussion to confirm its significance.
- WM-2** Will any processes associated with facility preparation and resumption of DAEC operations require modification to waste management practices? If so, describe and quantify the changes that will occur.

#### *Document Needs*

None identified at present.

### **Spent Nuclear Fuel (Rao Tammara, NRC)**

#### *Audit Needs*

- SNF-1** Provide a status and inventory of the fuel regarding the use of the fuel currently stored with initial re-loading strategy. This information should include re-loading plans for fuel on-site and fraction of core loading that would be additional fresh fuel to be shipped to the site for the first re-loading.

#### *Document Needs*

None identified at present.

## **Greenhouse Gas Emissions and Climate Change** (Nancy Martinez, NRC)

### *Audit Needs*

- GHG-CC-1** Section 3.7 of the ER states no hydrofluorocarbon/perfluorocarbon (HFC/PFC), refrigerant, or sulfur hexafluoride (SF6) information is available. Clarify whether any such sources are used onsite. If so, please identify the equipment that uses these gases.
- GHG-CC-2** Section 4.7.1 of the ER states that greenhouse gas (GHG) emissions for resumption of power operation “are expected to be similar to the 2020 through 2022 levels shown in Tables 3.7-1 and 3.7-2 because those years accounted for post-shutdown activities.” However, Table 3.7-2 of the ER does not account for GHG emissions associated with construction equipment for the construction of several new buildings and transmission lines, mobile equipment required for the completion of emission unit maintenance and testing, and other activities identified in Section 2.2.1 of the ER. Provide estimated GHG emissions associated with preparations for resumption of power operations to account for the activities identified in Section 2.2.1 of the ER including but not limited to construction equipment, truck deliveries, and mobile equipment required for the completion of emission unit maintenance and testing. As part of the response, provide all assumptions and calculations supporting estimated GHG emissions.
- GHG-CC-3** Section 4.7.2 of the ER identifies that two environmental resources (air quality and surface water resources) may experience incremental impacts of climate change and the continued operation of the plant beyond the baseline conditions. Clarify to what extent climate change could affect the baseline conditions of the affected environment for air quality and surface water resources.

### *Document Needs*

None identified at present.

## **Postulated Accidents/SAMA** (William Rautzen, NRC)

### *Audit Needs*

- SAMA-1** Section 4.8.3.2 of the ER contains the Postulated Accidents discussion. Please confirm, regarding external events and internal events, that the NRC’s 2010 FSEIS value of  $1.08 \times 10^{-5}$  for internal events is the current model of record for Core Damage Frequency (CDF) for DAEC. For external events, while not explicitly included in the SAMA evaluation for risk estimates, are accounted for in the potential risk reduction benefits associated with external events by multiplying the estimated benefits for internal events by a factor of 1.57. If these are not the current models of record and assumptions made for DAEC, please provide those numbers and any information regarding the change(s).
- SAMA-2** Confirm, regarding seismic CDF, that the 2010 FSEIS value of  $7.0 \times 10^{-7}$  is the current model of record for DAEC. If it is not the current model of record, please provide the updated model and any information regarding the change.
- SAMA-3** Confirm, regarding fire CDF, that the 2010 FSEIS value of  $3.0 \times 10^{-6}$  is the current model of record for DAEC. If it is not the current model of record, please provide the updated model and any information regarding the change.

- SAMA-4** Confirm, regarding flooding CDF, that the 2010 FSEIS value of  $1 \times 10^{-6}$  is the current model of record for DAEC. If it is not the current model of record, please provide the updated model and any information regarding the change.
- SAMA-5** Confirm, regarding high wind and tornado CDF, that the 2010 FSEIS value of  $1.4 \times 10^{-7}$  is the current model of record for DAEC. If it is not the current model of record, please provide the updated model and any information regarding the change.
- SAMA-6** Confirm that DAEC will not be significantly different from the pre-decommissioning plant, except for things like age-related replacements, etc., and that any changes or plant improvements are/would be aimed at operational reliability safety, which would support a lower CDF than used in the license renewal SAMA analysis.

*Document Needs*

None identified at present.

## Duane Arnold Energy Center Restart – Environmental Audit Schedule

### **Tuesday, March 3, 2026**

START	END	ACTIVITY
10:00 am ET	10:30 am ET	Entrance meeting between U.S. Nuclear Regulatory Commission (NRC), NextEra Energy Duane Arnold (NEDA), and contractors
10:30 am ET	4:00 pm ET	Virtual tours/virtual meetings between NRC, NEDA, and contractor subject matter experts (SMEs)

### **Wednesday, March 4, 2026**

START	END	ACTIVITY
10:00 am ET	2:00 pm ET	Virtual meetings between NRC, NEDA, and contractor SMEs

### **Thursday, March 5, 2026**

START	END	ACTIVITY
10:00 am ET	2:00 pm ET	Virtual meetings between NRC, NEDA, and contractor SMEs (if needed)

### **Wednesday, March 18, 2026**

START	END	ACTIVITY
9:00 am CT	4:00 pm CT	NRC site visit

### **To Be Determined (TBD)**

START	END	ACTIVITY
TBD	TBD	Exit meeting between NRC, NEDA, and contractors