



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

September 20, 2024

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**SUBJECT: REQUESTS FOR ADDITIONAL INFORMATION REGARDING THE
PROPOSED REAUTHORIZATION OF POWER OPERATIONS OF PALISADES
NUCLEAR PLANT UNDER RENEWED FACILITY OPERATING LICENSE
NUMBER DPR-20 (DOCKET NUMBER: 50-0255)**

Dear Jean Fleming:

Holtec Decommissioning International, LLC (HDI), submitted a series of licensing and regulatory requests that are necessary to reauthorize power operations at the Palisades Nuclear Plant (PNP) through March 24, 2031, the end of the current operating license term under PNP's Renewed Facility Operating License No. DPR-20. 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 PNP. Enclosure 1 is a table which lists the submittals received, the NRC's acceptance letters, and the associated Agencywide Documents Access and Management System (ADAMS) accession numbers which are identified below starting with "ML".

In a letter dated June 18, 2024, the NRC stated it had accepted the last submittal in Enclosure 1 for review (ML24169A434), and on June 27, 2024, NRC published a Notice of Intent (ML24149A002) in the Federal Register (89 FR 53659) informing stakeholders, including the public, that the NRC intended to conduct a 30-day scoping period to gather the information necessary to prepare an environmental assessment (EA) related to the review of the licensing actions for the potential reauthorization of power operations at PNP, thereby initiating NRC's environmental review under the National Environmental Policy Act.

As part of the NRC's environmental review, the staff is conducting an environmental regulatory audit. The audit is conducted during the environmental review with the intent to gain understanding, verify information, and to identify information required to support the basis of the licensing or regulatory decisions necessary for reauthorization of power operations. On June 27, 2024, the NRC provided HDI a notice of the environmental regulatory audit along with the environmental regulatory audit plan and a list of draft Requests for Additional Information (RAI) (ML24248A056). The environmental regulatory audit is being conducted in accordance with the environmental regulatory audit plan, Enclosure 2 of the June 27, 2024, correspondence (ML24248A056).

During the environmental audit, the NRC reviewed documents that were made available on the applicant's electronic information portal in response to the NRC draft RAIs. The NRC also participated in site visits and breakout sessions for each resource area with applicant personnel to gather information that will likely be used in the EA. As described in the June 27, 2024, correspondence, this information assisted the NRC staff in identifying either subsequent Requests for Confirmatory Information (RCI), issued while the audit remains open or, finalizing the draft RAIs and any newly identified RAIs that might be needed to allow the staff to conduct a complete review and to prepare the EA. As such, a number of the draft RAIs were either (1) closed, primarily due to clarification from the audit or availability of public information, (2) addressed in an RCI (ML24248A261), or (3) became a final RAI identified in Enclosure 2.

To further the development of the EA, the NRC staff requests submission of the information described in the final RAIs, provided in Enclosure 2, along with identifying other new and significant information that would impact the environmental assessment. These RAIs were discussed with your staff during the environmental audit and on September 18, 2024. Please respond within 15 days of the date of this letter.

Please reference Docket No. 50-255 in future correspondence related to this request. The NRC staff is available to clarify these questions, if necessary, to meet and discuss your proposed responses. If you have any questions regarding this matter, please contact Mary Richmond via email at Mary.Richmond@nrc.gov or Laura Willingham via email at Laura.Willingham@nrc.gov.

Sincerely,



Signed by Barnhurst, Daniel
on 09/20/24

Daniel Barnhurst, Chief
Environmental Project Management Branch 3
Division of Rulemaking, Environmental,
and Financial Support
Office of Nuclear Material Safety
and Safeguards

Docket No. 50-0255

Enclosures:
As stated

cc w/encls: GovDelivery

SUBJECT: REQUESTS FOR ADDITIONAL INFORMATION REGARDING THE PROPOSED REAUTHORIZATION OF POWER OPERATIONS OF PALISADES NUCLEAR PLANT UNDER RENEWED FACILITY OPERATING LICENSE NUMBER DPR-20 (DOCKET NUMBER: 50-0255)

DATED: September 20, 2024

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ADAMS Accession No: ML24263A171 (Letter)

OFFICE	PM:REFS	LA:REFS/EPM3	PM:REFS/EPMB3	OGC	PM:REFS/EPMB3	BC:EPMB3
NAME	MRichmond	MCampestrin	LWillingham	MASpencer -	LWillingham	DBarnhurst
DATE	9/19/2024	9/19/2024	9/19/2024	9/12/2024	9/20/2024	9/20/2024

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**Licensing and Regulatory Requests for the Reauthorization of Power Operations at
Palisades Nuclear Plant**

DOCUMENT DESCRIPTION	ADAMS Accession No. (Submittal)	ADAMS Accession No. (Acceptance Review)
Request for Exemption from Certain Termination of License Requirements of 10 CFR 50.82, dated September 28, 2023.	ML23271A140	ML23291A440
Application for Order Consenting to Transfer of Control of License and Conforming License Amendments, dated December 6, 2023.	ML23340A161	ML24012A242
Request to Revise Operating License and Technical Specifications to Support Resumption of Power Operations, dated December 14, 2023.	ML23348A148	ML24022A117
Request to Revise the Administrative Technical Specifications to Support Resumption of Power Operations, dated February 9, 2024.	ML24040A089	ML24060A221
Request to Reinstate the Palisades Emergency Plan to Support Resumption of Power Operations, dated May 1, 2024.	ML24122C666	ML24141A119
Request to Update the Main Steam Line Break Analysis Methodology, dated May 24, 2024.	ML21145A143	ML24169A434

REQUESTS FOR ADDITIONAL INFORMATION

The following requests for additional information (RAIs) identify information needed by the U.S. Nuclear Regulatory Commission (NRC) staff to complete its environmental review of the submittals necessary to reauthorize power operations at the Palisades Nuclear Plant (PNP). Given that the NRC staff is preparing an environmental assessment (EA), the regulatory basis for each RAI is the following requirement in Title 10 of the *Code of Federal Regulations* (10 CFR) Part 51.41 "Requirement to submit environmental information":

The Commission may require an applicant for a permit, license, or other form of permission, or amendment to or renewal of a permit, license or other form of permission, or a petitioner for rulemaking to submit such information to the Commission as may be useful in aiding the Commission in complying with section 102(2) of NEPA. The Commission will independently evaluate and be responsible for the reliability of any information which it uses.

This regulatory basis is not repeated for each RAI. Where additional regulatory basis beyond 10 CFR 51.41 exists, it is provided below.

Generic:

RAI-GEN-1

Provide a detailed list of activities—all activities related to the Federal actions—planned for the PNP to support resumption of power operations (planned restart-related activities). Including:

- For any ground disturbing activities, or any refurbishment activities, (e.g., building or demolition, etc.) provide:
 - Location and scheduled start of activity.
 - Number of acres disturbed and depth of disturbance.
 - Whether the disturbance is temporary or permanent.
- Provide any historical construction disturbance photographs and maps detailing the extent of previously disturbed areas or earth disposal areas.
- A figure or drawing indicating location of all planned restart-related activities, including, laydown areas, and extent of ground disturbance on an updated site map.
- Publication-quality files of figures are needed for reproduction in the EA (sized for 8.5 x 11 in. page, resolution at least 300 dpi, in .png or .tif format). The geographic information system or GIS shapefiles that are generated are also needed.

This request for additional information intersects multiple resource areas and Federal regulations as the details of any activities may influence environmental evaluations of a variety of processes and functions. Enclosure 2, *"Environmental New and Significant Review Proposed Resumption of Power Operations Palisades Nuclear Plant"*, of Holtec Decommissioning International's, LLC (HDI's) exemption request did not provide a detailed list of activities planned to support the resumption of power operations.

RAI-GEN-2

Provide a properly-supported purpose and need statement for the proposed Federal actions. Include any applicable related analyses and studies informed by HDI's purpose and need statement, e.g., alternatives.

The purpose and need statement is the foundation of the environmental analysis on which the rest of the environmental assessment is built. Enclosure 2, *“Environmental New and Significant Review Proposed Resumption of Power Operations Palisades Nuclear Plant”*, did not provide a National Environmental Policy Act (NEPA)-based purpose and need statement – while the submittals describe the project and purposes, an overall purpose and need statement as it relates to the NEPA analysis is needed for the lead agency to respond to the proposed Federal actions before them. That is, a purpose and need statement should be provided that briefly specifies the underlying purpose and need to which the agency is responding as it provides the foundation for determining which alternatives will be considered. A properly-supported purpose and need statement, which should incorporate the applicant’s objectives and not be too narrowly defined, provides a focused limit on the range of alternatives to be considered and allows an agency to dismiss without detailed study any alternative that fails to meet the proposed purpose and need.

In requesting this information, the NRC is guided by the following Council on Environmental Quality (CEQ) regulations¹:

- Title of 40 of the *Code of Federal Regulations* (40 CFR) Part 1501.5 requires EAs to briefly describe the purpose and need for the proposed agency action.

RAI-GEN-3

Provide a status for all necessary environmental permits, licenses, approvals, and other entitlements required for the proposed actions to resume and continue operations of the PNP (e.g., permits issued under the Clean Water Act, Clean Air Act, Coastal Zone Management Act, etc.). Include any permits required for any planned restart-related activities in support of the proposed Federal actions. Describe the status of compliance with these requirements and any consultations with state or local agencies.

The NRC staff is preparing an EA and will assess whether there have been any changes to operating permits or other requirements. Enclosure 2, *“Environmental New and Significant Review Proposed Resumption of Power Operations Palisades Nuclear Plant”*, table 1.3-1, did not provide a complete listing and status, e.g., the Low-Level Radioactive Waste permit expires August 2024, the Maintenance Dredging permit expires April 2025, the Scientific Collector’s Permit expired December 2023, and consistency with the Coastal Zone Management Act was not included.

This information is necessary for the NRC staff to assess the status of permits and the environmental impacts of the proposed Federal actions. In requesting this information, the NRC is guided by the following CEQ regulations:

- 40 CFR 1501.5, “Environmental assessments”: “(k) As appropriate to improve efficiency and effectiveness of environmental assessments, agencies may apply the other provisions of part 1502 and 1503 of this subchapter, including §§ ... 1502.24 ... to environmental assessments.”
- 40 CFR 1502.24 “Environmental review and consultation requirements”: “(b) The draft environmental impact statement shall list all Federal permits, licenses, and other authorizations that must be obtained in implementing the proposal. If it is uncertain

¹ The NRC is generally not required to follow CEQ regulations (at least to the extent they have not been incorporated into 10 CFR 51), but CEQ regulations can serve as guidance for carrying out the NRC’s NEPA responsibilities.

whether a Federal permit, license, or other authorization is necessary, the draft environmental impact statement shall so indicate.”

RAI-GEN-4

Provide a detailed list of past, present, and reasonably foreseeable future projects that would affect the same resources affected by the proposed Federal actions, e.g., subsequent license renewal; HOLTEC SMR; or any refurbishment or replacement activities that would impact environmental resources.

CEQ defines cumulative impacts (also known as cumulative effects) in 40 CFR 1508.1(i) as “effects on the environment that result from the incremental effects of the action when added to the effects of other past, present, and reasonably foreseeable actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative effects can result from actions with individually minor but collectively significant effects taking place over a period of time.” The goal of the analysis is to introduce environmental considerations into the planning process as early as needed to improve decision-making. While Section 4.12 of Enclosure 2, *“Environmental New and Significant Review Proposed Resumption of Power Operations Palisades Nuclear Plant”*, provided a brief description of building activities, there was not a detailed list of past, present, and reasonably foreseeable projects or enough information to make a determination, e.g., are structures such as the day care center to be constructed in an already disturbed area.

Alternatives:

RAI-ALT-1

HDI has included the no-action alternative in Enclosure 2, *“Environmental New and Significant Review Proposed Resumption of Power Operations Palisades Nuclear Plant”*:

“The no-action alternative is that PNP would not receive authorization to resume power operations, and the plant would continue decommissioning in accordance with NRC regulations. PNP’s Post Shutdown Decommissioning Activities Report (PSDAR) provides the environmental impact assessment for this no-action alternative (HDI 2020).”

However, an analysis of other alternative categories was not provided. Provide an analysis of the following alternative categories, as they relate to HDI’s purpose and need statement; if HDI believes alternatives in these categories should be dismissed from further consideration, please provide the bases:

- Energy Alternatives
- System Alternatives

Water Resources (Surface Water and Groundwater):

RAI-SW-4

Provide the location, on an appropriate map, where any dredged materials are permitted to be placed during planned restart-related activities and operations should dredging be necessary. Enclosure 2, *“Environmental New and Significant Review Proposed Resumption of Power Operations Palisades Nuclear Plant,”* Section 4.2.2.6 mentions both unvegetated and vegetated beach areas and the lake where dredged materials were placed.

Surface water quality can be adversely affected by dredging activities performed to maintain the performance of nuclear power plant water intakes and discharges.

RAI-SW-11

Holtec is planning to replace both component cooling water (CCW) heat exchangers before restarting Palisades. Provide the following information related to the CCW heat exchangers:

- A description of the CCW system heat exchangers and all its interfaces with the surface water environment.
- Changes in the maximum and typical heat loads compared to the old CCW heat exchangers.
- Changes in the flow rate and consumptive use compared to the old CCW heat exchangers

RAI-GW-2

Provide an updated geologic cross-section of the site that includes current building foundations and site infrastructure elevations.

An updated geologic cross-section depicting pertinent water-bearing units that can transport potential releases of radioactive and nonradioactive material offsite was not provided. The NRC staff assesses the modified environment around the plant to determine the potential for offsite transportation of contaminants.

RAI-GW-3

Figure 3.2-1 of Enclosure 2, “*Environmental New and Significant Review Proposed Resumption of Power Operations Palisades Nuclear Plant*,” of HDI’s exemption request depicts groundwater contours. Provide the year and month that the elevation data were collected that were used to generate the contours. Provide recent contour maps or groundwater elevation data that capture seasonal variation (if any) of site groundwater levels.

The present-day hydraulic characterization of the site is needed to inform baseline conditions that may be impacted by the proposed actions. Recent groundwater elevation data and seasonal variability inform groundwater flow patterns at the site that may impact offsite groundwater users and groundwater quality.

RAI-GW-5

Section 3.2.1.2 of Enclosure 2, “*Environmental New and Significant Review Proposed Resumption of Power Operations Palisades Nuclear Plant*,” of HDI’s exemption request states HDI’s plans to undertake remediation and repairs as part of the resumption of power operations efforts in response to inadvertent releases of tritium to groundwater. Describe updates (if any) to these plans beyond what is described in the exemption request, including any potential ground disturbance.

Air Resources (Climate, Air Quality, and Meteorology):**RAI-MET-1**

Provide recent climatological data, synoptic meteorology and extreme weather events. A climate summary has been provided in the License Renewal Environmental Impact Statement (EIS) Supplement based on 2005 data. More recent data should be analyzed and provided and was not included in the Enclosure 2, “*Environmental New and Significant Review Proposed Resumption of Power Operations Palisades Nuclear Plant*” submittal.

RAI-MET-5

If there are any restart-related activities that would produce pollutant emissions (e.g., from construction equipment), then provide information on these emissions, including emissions estimates of fugitive dust and best management practices.

This information was not included in the Enclosure 2, *"Environmental New and Significant Review Proposed Resumption of Power Operations Palisades Nuclear Plant"* submittal.

RAI-MET-6

Provide annual pollutant emissions (including criteria pollutants) since 2022, if any. The U.S. Environmental Protection Agency (EPA) has set National Ambient Air Quality Standards for criteria pollutants. Air quality emissions for a plant are regulated through permits. NRC staff review air emissions to verify compliance with permitting to support the NRC staff making environmental impact determinations under NEPA. Permitted annual emissions (including criteria pollutants) have been documented in the Enclosure 2, table 3.7-2 from year 2018-2022. There is no information past 2022 included in the Enclosure 2, *"Environmental New and Significant Review Proposed Resumption of Power Operations Palisades Nuclear Plant"* submittal.

Ecological Resources (Aquatic Ecology and Terrestrial Ecology):**Aquatic-****RAI-AE-4**

Is there any past or current monitoring (or planned monitoring after a return to operations) of the intake and traveling screens for fish or other aquatic organisms? If so, please provide information, if available, on numbers and species entrained. Have there been any fish kills since the PNP entered into decommissioning?

Enclosure 2, *"Environmental New and Significant Review Proposed Resumption of Power Operations Palisades Nuclear Plant,"* did not provide a description of any monitoring plans to assess the numbers of fish or other aquatic organisms found on the intake or traveling screens and impacts were provided for license renewal (the license renewal impact determinations assumed a baseline of continued operations).

Terrestrial Ecology-**RAI-TE-1**

The 2013 License Renewal (LR) Generic Environmental Impact Statement, NUREG-1437 Rev. 1, stated that cooling system changes were made at PNP to address sulfate deposition and temporary excessive icing conditions that resulted in the conversion of about 5 acres of dune forest near the mechanical draft cooling tower to dense scrub-shrub. a) Summarize the changes made to mechanical cooling towers (operational, infrastructure) to address the vegetation impacts from drift. Include whether the cooling towers have drift eliminators. b) Provide a map showing location of drift impacted vegetation from previous operations. c) If operational changes have occurred to the cooling towers that resulted in dune forest establishment, provide a description. d) Summarize any differences in predicted drift from cooling tower operations. (See also MET-2).

Enclosure 2, *"Environmental New and Significant Review Proposed Resumption of Power Operations Palisades Nuclear Plant,"* did not provide an updated analysis of drift impacts from resumed operations.

Socioeconomics:

RAI-SE-1

As briefly indicated in Section 3.4, the planned restart-related activities will likely require a significant number of temporary workers. Provide more information about the temporary workforce, including the number and residence of the temporary workers, work schedule/duration, etc.?

Enclosure 2, "*Environmental New and Significant Review Proposed Resumption of Power Operations Palisades Nuclear Plant*", did not completely address this aspect of Socioeconomics.

RAI-SE-2

Provide a description and breakdown of projected plant employment during operations (similar to Palisades' Permanent Employee Residence Information from the 2006 LR EIS Supplement table 2-3).

Enclosure 2, "*Environmental New and Significant Review Proposed Resumption of Power Operations Palisades Nuclear Plant*", did not completely address this aspect of Socioeconomics.

Environmental Justice (EJ):

RAI-EJ-1

Has HDI engaged with any local communities or groups with EJ concerns? If so, provide summaries of any engagements to help inform the NRC staff's EJ review.

Enclosure 2, "*Environmental New and Significant Review Proposed Resumption of Power Operations Palisades Nuclear Plant*," did not provide this information.

Historic and Cultural Resources:

RAI-HCR-5

Provide all records of engagement and communication with the Michigan State Historic Preservation Office, Tribal Historic Preservation Office (or Native American Tribes) and/or other parties as they relate to Section 106 of the National Historic Preservation Act or cultural resources considered under NEPA.

Enclosure 2, "*Environmental New and Significant Review Proposed Resumption of Power Operations Palisades Nuclear Plant*," did not provide a description of communications or engagement with the State, Tribes, or other interested parties as it relates to cultural resources, only reference to a Michigan State Historic Preservation Office literature review conducted on September 11-13, 2023.

RAI-HCR-6

Provide details and results of identification efforts for historic properties of traditional religious and cultural importance (Traditional Cultural Properties and/or Traditional Cultural Landscapes) at PNP.

Enclosure 2, "*Environmental New and Significant Review Proposed Resumption of Power Operations Palisades Nuclear Plant*," did not provide reference to the identification or evaluation of historic properties of traditional religious and cultural importance (Traditional Cultural Properties or Traditional Cultural Landscapes) at PNP.

Identification of historic properties must take into account historic properties of traditional religious and cultural importance as part of 36 CFR 800.2(c)(2)(ii).

RAI-HCR-8

Provide an updated, cultural history of the PNP area (including the Area of Potential Effects) since the 2006 LR EIS Supplement.

Enclosure 2, "*Environmental New and Significant Review Proposed Resumption of Power Operations Palisades Nuclear Plant*," did not provide an updated cultural history of PNP.

Radiological Health:

RAI-RH-1

Provide a description of the current radiological conditions (Baseline Affected Environment). Please include descriptions of known radiological hazards and workflow for mitigating identified unknown radiological hazards, a process for estimating dose in varied radiological conditions, an expected cumulative dose to workers during the refurbishment process, and a determination on if decommissioning-related activities have changed the potential emissions and exposure pathways for workers.

Radiological and Non-radiological Waste Management:

RAI-WM-1

To adequately characterize the baseline affected environment, describe the current waste management strategy, including disposal plans, and quantity of wastes (radioactive, non-radioactive, and mixed). Also describe expected waste to be generated at PNP during restart-related activities and operation.

Enclosure 2, "*Environmental New and Significant Review Proposed Resumption of Power Operations Palisades Nuclear Plant*," did not provide a description of the expected wastes generated to make a determination of the waste management impacts related to the proposed actions. For example, it is expected that HDI will be performing chemical cleaning of various reactor systems during restart-related activities, such as the primary system loops and reactor vessel. Such activities, including refurbishment activities, may generate mixed wastes in greater quantities than during prior operational years.

Fuel Cycle, Transportation, and Decommissioning:

RAI-FC-1

Provide a status and intention of use of the fuel currently stored at PNP along with initial re-loading strategy. This information should include fuel enrichment level, re-loading plans for fuel onsite, additional fresh fuel to be shipped to the site for the first re-loading, and the expected burnup level(s).

Enclosure 2, "*Environmental New and Significant Review Proposed Resumption of Power Operations Palisades Nuclear Plant*," did not provide a description of intended fuel characteristics to be used to make a determination of the uranium fuel cycle impacts related to the proposed actions. Part of the information being requested is in connection to RAI TR-2.

RAI-TR-2

Describe the baseline affected environment and impacts of transportation of fresh fuel and spent fuel as they relate to restart-related activities and return to power operations. Please provide expected type and quantity of material that will be transported.

A description of the baseline affected environment and related transportation of fresh fuel is needed to determine impacts of the proposed actions. Enclosure 2, “*Environmental New and Significant Review Proposed Resumption of Power Operations Palisades Nuclear Plant*” did not provide this information.