

REQUEST FOR ADDITIONAL INFORMATION
RELATED TO POST SHUTDOWN DECOMMISSIONING ACTIVITIES REPORT FOR
INDIAN POINT NUCLEAR GENERATING UNITS 1, 2, AND 3
HOLTEC DECOMMISSIONING INTERNATIONAL, LLC
DOCKET NOS. 50-003, 50-247, 50-286, AND 72-051

By letter dated December 19, 2019 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML19354A698), Holtec Decommissioning International, LLC (HDI), submitted a Post-Shutdown Decommissioning Activities Report (PSDAR) and associated Decommissioning Cost Estimate (DCE) for the Indian Point Energy Center (IPEC), which consists of Indian Point Nuclear Generating Units 1, 2, and 3, to the U.S. Nuclear Regulatory Commission (NRC). HDI submitted the PSDAR pursuant to Title 10 of the Code of Federal Regulations (10 CFR), Section 50.82(a)(4). HDI developed the IPEC PSDAR using the Regulatory Guide 1.185, Revision 1, "Standard Format and Content for Post-Shutdown Decommissioning Activities Report" (ADAMS Accession No. ML13140A038). The NRC staff is reviewing the PSDAR and has determined that the following additional information is required to complete its review.

Applicable Regulation and Guidance

The regulation 10 CFR 50.82(a)(4)(i) states that the licensee shall submit a PSDAR to the NRC that includes "a discussion that provides the reasons for concluding that the environmental impacts associated with site-specific decommissioning activities will be bounded by appropriate previously issued environmental impact statements, and a site-specific DCE, including the projected cost of managing irradiated fuel." The regulation 10 CFR 50.82(a)(6) states, in part, that "[l]icensees shall not perform any decommissioning activities ... that ... [r]esult in significant environmental impacts not previously reviewed; or result in there no longer being reasonable assurance that adequate funds will be available for decommissioning." In NUREG-0586, "Generic Environmental Impact Statement on Decommissioning of Nuclear Facilities: Supplement 1, Regarding the Decommissioning of Nuclear Power Reactors" (ADAMS Accession Nos. ML023470327 and ML023500228) (herein referred to as "Decommissioning GEIS"), the NRC evaluated the environmental impacts during the decommissioning of nuclear power reactors. The Decommissioning GEIS concludes that:

For those issues that have been determined to be generic, licensees may proceed with the decommissioning activity without further analysis provided that the impacts resulting from those activities fall within the range of impacts as described in Chapter 4. However, if the impacts of an activity fall outside the range predicted in Chapter 4, or if the activity results in impacts to environmental issues not considered in this Supplement, or if the impact involves an environmental issue determined to be conditionally site-specific as defined above, then the activity cannot be performed until a further site-specific analysis is completed along with a license-amendment request and NRC has approved the license amendment (the license amendment request will provide an opportunity for a public hearing).

Requests for Additional Information (RAIs)

RAI-PSDAR-1

Section 5.3 of the IPEC PSDAR states that for radiation dose, waste management, air quality, water quality, ecological resources, and socioeconomics:

The NRC staff did not identify any new and significant information during their independent review of the IPEC license renewal environmental report at that time, the site audit, or the scoping process for license renewal...[T]he NRC concluded that there are no impacts related to these issues beyond those discussed in the SEIS [Supplemental Environmental Impact Statement for license renewal of IPEC Units 2 and 3], Vol. 1, ([PSDAR] Reference 15)¹, SEIS, Vol. 5 ([PSDAR] Reference 16)² or the GEIS ([PSDAR] Reference 8³) for decommissioning...The NRC found no site-specific issues related to decommissioning and there are no decommissioning activities contemplated for IPEC that would alter that conclusion.

Section 5.5 of the PSDAR further concludes that the NUREG-1437, Supplement 48, Volume 1 concerning license renewal of IPEC Units 2 and 3 (PSDAR Reference 15 and referred to in the PSDAR and herein as “SEIS, Vol. 1”) found no impacts associated with radiation dose, waste management, air quality, water quality, ecological resources, and socioeconomic impacts associated with IPEC decommissioning beyond those discussed in the Decommissioning GEIS⁴ and, therefore, HDI concludes that the impacts of IPEC decommissioning are bounded by the Decommissioning GEIS.

Section 7.1 of SEIS, Vol. 1 states that, as part of its environmental review for the license renewal of IPEC Units 2 and 3, the NRC staff did not identify any information that is both new and significant and concludes that there are no impacts related to the Category 1 (generic) issues (listed in Table 7-1 of SEIS, Vol. 1) applicable to the decommissioning of IPEC Units 2 and 3 beyond those discussed in the 1996 license renewal GEIS (i.e., NUREG-1437, Rev 0).⁵ However, in SEIS, Vol. 1, the NRC staff did not consider the environmental impacts associated with IPEC Unit 1, nor did the staff reach conclusions related to Category 1 decommissioning issues with respect to the Decommissioning GEIS. Rather, the staff applied the 1996 license renewal GEIS to these issues (see Section 7.1 of SEIS, Vol. 1).

A) Given that SEIS, Vol. 1 did not consider the environmental impacts associated with IPEC Unit 1 and reached conclusions related to applicable Category 1 decommissioning issues for IPEC Units 2 and 3 under the 1996 license renewal GEIS, provide a basis and supporting

¹ U.S. Nuclear Regulatory Commission. 2010. Generic Environmental Impact Statement for License Renewal of Nuclear Plants Regarding Indian Point Nuclear Generating Unit Nos. 2 and 3. NUREG-1437, Supplement 38, Volume 1. Final Report. December 2010. ADAMS Accession No. ML103350405.

² U.S. Nuclear Regulatory Commission. 2018. Generic Environmental Impact Statement for License Renewal of Nuclear Plants Regarding Indian Point Nuclear Generating Unit Nos. 2 and 3. NUREG-1437, Supplement 38, Volume 5. Final Report. April 2018. ADAMS Accession No. ML18107A759.

³ U.S. Nuclear Regulatory Commission. 2002. Final Generic Environmental Impact Statement on Decommissioning of Nuclear Facilities Regarding the Decommissioning of Nuclear Power Reactors. NUREG-0586, Supplement 1. November 2002. ADAMS Accession Nos. ML023470304 (Vol. 1) and ML023470323 (Vol. 2).

⁴ The PSDAR refers to the Decommissioning GEIS as simply “the GEIS.”

⁵ U.S. Nuclear Regulatory Commission. 1996. Generic Environmental Impact Statement for License Renewal of Nuclear Power Plants. NUREG-1437, Revision 0. May 1996. ADAMS Accession Nos. ML040690705 (Vol. 1) and ML040690738 (Vol. 2).

analysis, as appropriate, for concluding that the environmental impacts associated with site-specific decommissioning activities for IPEC Units 1, 2, and 3 will be bounded by appropriate previously issued environmental impact statements for the following environmental resources: radiation dose, waste management, air quality, water quality, ecological resources, and socioeconomic impacts.

B) The IPEC PSDAR discusses the use of the DECON decommissioning method for IPEC. However, for IPEC Unit 1, the SAFSTOR decommissioning method was selected when it was initially shutdown in October 1974. Some decommissioning work associated with spent fuel storage was performed from 1974 through 1978, and the NRC issued an order approving the SAFSTOR method in January 1996. However, the IPEC PSDAR does not address the environmental impacts of IPEC Unit 1 for the approximately 20 years it was in SAFSTOR.

Provide a discussion and evaluation that addresses the potential environmental impacts of IPEC Unit 1 for the approximately 20 years under the SAFSTOR decommissioning method for decommissioning activities associated with SAFSTOR vs. DECON and provide an envelope of the impacts that the staff can compare to prior to undertaking decommissioning activities.

C) Section 5.1.14 of the PSDAR indicates that HDI anticipates decommissioning activities at IPEC will be confined to the operational area and previously disturbed areas, and in the event that ground disturbance is proposed in areas outside operational and previously disturbed areas (or historical or archeological resources are encountered during excavation), assessments and consultation with New York State Historic Preservation Officer (NYSHPO) will be conducted, as appropriate. The PSDAR concludes that the “potential for impacts to cultural, historical, or archeological resources is bounded by the [Decommissioning] GEIS.” The PSDAR also references SEIS, Vol. 1 and NUREG-1437, Supplement 48, Volume 5 concerning license renewal of IPEC Units 2 and 3 (PSDAR Reference 16 and referred to in the PSDAR and herein as “SEIS, Vol. 5”) to support this conclusion.

However, the analyses included in the referenced documents do not appear to bound potential impacts of DECON to IPEC Unit 1. Specifically, Section 4.4.5.1 of SEIS, Vol 1. states:

[T]he IP1 [IPEC Unit 1] reactor was one of three “demonstration plants” that began operation in the early 1960s. It is representative of the earliest era of commercial reactors to operate in the United States. To date, no formal significance or eligibility evaluation has been conducted for IP1; however, the plant could become eligible for inclusion on the National Register of Historic Places. As mandated by Section 106 of the NHPA, an evaluation would be conducted if it was determined that a project could affect IP1.

The PSDAR identifies that HDI plans to dismantle and demolish IPEC Units 1, 2, and 3. In addition, HDI did not indicate in the PSDAR whether they considered the IPEC nuclear facility itself eligible for inclusion on the National Register of Historic Places or Historic American Engineering Record. Section 4.3.14.2 of the Decommissioning GEIS states:

In a few situations, the nuclear facility itself could be potentially eligible for inclusion in the National Register of Historic Places, especially if it is older than 50 years and represents a significant historic or engineering achievement. In this case, appropriate mitigation would be developed in consultation with the SHPO [State Historic Preservation Officer]. Even for buildings that are less than 50 years old, the processes

and engineering that were employed may be of interest and may be eligible for the Historic American Engineering Record.

Clarify whether HDI plans to determine, in consultation with the NYSHPO prior to dismantlement and demolition, the current eligibility status of IPEC Unit 1 and the balance of the IPEC facility itself for inclusion in the National Register of Historic Places or Historic American Engineering Record, and, if required, identify appropriate mitigation measures (e.g., preservation of historic information and data) potentially resulting from this consultation.

D) Section 5.1.14 of the PSDAR cites SEIS, Vol. 5 as the basis for the following statement:

The NRC concluded that the power block area and other areas south and east of the power block have been disturbed during site preparation and construction and have little to no potential for archeological resources. The NRC also found a potential for portions of the property not disturbed by construction activities south of the power block area and in the northeast portion of the IPEC property to contain intact subsurface archeological deposits.

The NRC staff could not confirm this information in the cited reference. Clarify where in the cited reference this information is presented.

RAI-PSDAR-2

Section 2.5 of the PSDAR states, "The HDI decommissioning plan includes the expansion of the existing ISFSI [independent spent fuel storage installation] pad on the IPEC site to provide the dry cask storage capacity needed for the spent nuclear fuel currently in the IP2 and IP3 [IPEC Unit 2 and IPEC Unit 3] reactors and spent fuel pools. The expanded ISFSI will also include storage capacity for the GTCC [Greater than Class C] waste." The PSDAR estimates approximately 13 GTCC canisters will be needed for decommissioning activities. Section 3.2 of the PSDAR states that the ISFSI pad currently has a 75-cask capacity with a planned expansion for 65 additional casks.

Section 5.1.1.1 of the PSDAR states, "IPEC has sufficient previously disturbed area onsite (due to construction or operations activities) for use during decommissioning." However, this section does not contain any description or evaluation of the ISFSI pad expansion that is part of the decommissioning plan.

Section 4.3.1.4 of the Decommissioning GEIS states that "[f]or facilities having only onsite land-use changes as a result of large component removal, structure dismantlement, and LLW [low-level waste] packaging and storage, the impacts on land use are not detectable or destabilizing." In making this land use conclusion, the Decommissioning GEIS does not explicitly consider ISFSI pad expansion.

Provide a discussion and evaluation of the potential environmental land use impacts of the construction and operation of the ISFSI pad expansion for storing IPEC spent nuclear fuel and 13 GTCC canisters. Identify the area of land required for construction (including staging and laydown) and operation of the ISFSI pad. Identify the current land use categories of affected land and state whether any wetlands will be affected. In addition, describe plans for obtaining NRC approval for the ISFSI pad and fuel storage capacity expansion.

RAI-PSDAR-3

Section 5.1.7.2 of the PSDAR addresses impacts on protected aquatic species, including the Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*) and shortnose sturgeon (*A. brevirostrum*). In this section, HDI mentions “barging large plant components from IPEC on the Hudson River and beyond.” The only potential impact on sturgeon addressed in connection with such transport is dredging. The National Marine Fisheries Service (NMFS) broadly identifies vessel strikes to be a major threat to both sturgeon species in its various listing documents and species assessments.

Evaluate the potential for barge vessel traffic associated with IPEC decommissioning activities to adversely affect Atlantic and shortnose sturgeon. For an example of the types of factors that should be addressed in this request, refer to the NMFS’s 2020 evaluation of vessel traffic impacts associated with Oyster Creek Nuclear Generating Station decommissioning activities.⁶

RAI-PSDAR-4

PSDAR Section 2.4.10, Site Restoration, does not discuss the existing groundwater contamination. In Section 5.1.8.2, Public Dose, HDI briefly discusses the presence of radiologically contaminated groundwater at IPEC and states that monitored natural attenuation (MNA) has been the selected remedial action implemented as part of the long-term monitoring program (LTMP). The PSDAR uses analysis from the 2018 Supplement to the Environmental Impact Statement (SEIS) that may not be appropriate considering the accelerated decommissioning schedule for partial site release by 2033, and the calculation of DCGLs for the groundwater pathway prior to that time.

The IPEC 2020 Annual Radioactive Effluent Release Report (ADAMS Accession No. ML21168A062) shows groundwater in several monitoring wells with elevated levels of tritium, cesium-137, strontium-90, and nickel-63. The PSDAR assumes that natural attenuation will reduce the groundwater radiological concentrations to sufficiently low levels within 12 years, which is the timeframe for accelerated decommissioning of the IPEC site with the goal of unrestricted release of all areas except the ISFSI. With that assumption, active remediation and possible expansion of characterization are not included as possible activities in the PSDAR, nor do the associated costs appear to be included in the cost estimate for site restoration.

Provide a qualitative assessment that addresses the uncertainty of when the objectives of the MNA remedy for groundwater contamination will likely be achieved compared to the accelerated decommissioning timeline for meeting the NRC’s unrestricted release criteria.

RAI-PSDAR-5

Per 10 CFR 50.82(a)(4)(i), HDI was required to submit to the NRC a PSDAR for IPEC, including a site-specific DCE. HDI complied with this requirement based on its earlier submission of a PSDAR followed by the completion of the IPEC license transfer transaction with Entergy Nuclear Operations, Inc. on May 28, 2021. As part of that transaction, the agreements

⁶ See Section 7.4 of: National Marine Fisheries Service. 2020. Endangered Species Act Section 7 Consultation Biological Opinion for Continued Operation of Oyster Creek Nuclear Generating Station Pursuant to a License Issued by the NRC in April 2009, Shutdown, and Ongoing Decommissioning. GAR-2019-01287. May 29, 2020. ADAMS Accession No. ML20153A228.

governing the IPEC decommissioning trust funds were amended. In order to fully understand the IPEC DCE, the staff requires copies of the current trust agreements. Provide copies of the current IPEC trust agreements.