



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

July 19, 2025

Jennifer Hovis, Acting Director
Division of Assessment and Remediation
Office of Superfund Remediation
and Technology Innovation
U.S. Environmental Protection Agency
1200 Pennsylvania Ave., NW
Mail Stop: 5201P
Washington, DC 20004

SUBJECT: CONSULTATION ON THE DECOMMISSIONING OF OYSTER CREEK
NUCLEAR GENERATING STATION IN OCEAN COUNTY, NEW JERSEY
(EPID L-2024-LLA-0107)

Dear Ms. Hovis:

This letter notifies you of the decommissioning oversight action that the U.S. Nuclear Regulatory Commission (NRC) has taken and intends to take for the Oyster Creek Nuclear Generating Station (OC) in the Forked River section of Lacey Township in Ocean County, New Jersey.

On October 9, 2002, the NRC and the U.S. Environmental Protection Agency (EPA) entered into a Memorandum of Understanding (MOU) on "Consultation and Finality on Decommissioning and Decontamination of Contaminated Sites" (Agencywide Documents Access and Management System (ADAMS) Accession Number ML022830208). Under the MOU, EPA agreed to continue its deferral policy of not listing sites on the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) National Priorities List that are subject to the NRC's licensing authority. The MOU provides that, unless an NRC-licensed site exceeds any of three trigger criteria contained in the MOU, EPA agrees to a policy of deferral to NRC decision-making on decommissioning without the need for consultation.

For sites that trigger the criteria in the MOU, the NRC will consult with EPA at two points in the decommissioning process: (1) prior to NRC approval of the license termination plan (LTP) or decommissioning plan, which the NRC terms Level 1 consultation; and (2) following completion of the final status survey (FSS), which the NRC terms Level 2 consultation.

We are sending this letter as our Level 1 consultation for the OC site because the licensee, Holtec Decommissioning International, LLC (HDI), has submitted an LTP that proposes derived concentration guideline levels (DCGLs) for certain radionuclides at this site that would exceed the soil concentration values in Table 1 of the MOU, "Consultation Triggers for Residential and Commercial/Industrial Soil Contamination."

Pursuant to 10 CFR 50.82(a)(9), HDI submitted the OC LTP to the NRC on August 1, 2024, (ML24214A037), as supplemented on March 26, 2025 (ML25086A156), April 29, 2025 (ML25119A267) and May 13, 2025 (ML25133A131). As described in the OC LTP, HDI is proposing to conduct remediation and survey operations at the OC site (other than the remaining licensed Independent Spent Fuel Storage Installation (ISFSI)) to meet the unrestricted release requirements of 10 CFR 20.1402, "Radiological Criteria for Unrestricted Use." As described in the OC LTP, the site is expected to be used for industrial use following license termination. HDI considers the industrial use scenario as the reasonably foreseeable future land use scenario.

The NRC has compared the licensee's proposed DCGLs to the MOU's soil concentration levels for the industrial use scenario for the purposes of evaluating the need for consultation. Reliance upon the industrial use scenario is consistent with the instructions for Table 1, "Consultation for Residential and Commercial/Industrial Soil Contamination," in the MOU, which state that the users of this table should select the appropriate column (i.e., land use scenario) based on the site's reasonably anticipated land use.

The proposed DCGLs for OC's initial suite of radionuclides of concern (ROC) are provided in the enclosure to this letter. HDI has identified 21 radionuclides in its "initial suite" of potential ROCs. The proposed DCGLs for 11 out of 21 (Am-241, Cm-243, Co-60, Cs-137, Eu-152, Eu-154, Fe-55, H-3, Nb-94, Ni-63, and Pu-241) of the proposed ROCs exceed the MOU soil concentration levels for the industrial use scenario, while six radionuclides are below MOU values (C-14, Mn-54, Pu-238, Pu-239, Pu-241, and Tc-99) and four radionuclides are not listed in the MOU table.¹ A sum-of-fractions of approximately 159 is calculated for all radionuclides with MOU values.² The proposed DCGL values along with their expected relative abundance in OC soil can also be considered to determine significant versus insignificant radionuclides (significant ROCs are highlighted in the enclosure to this letter). Insignificant radionuclides and pathways are defined in NRC guidance as those which are projected to cumulatively contribute no more than 10 percent of the dose standard (i.e., no more than 10 percent of the 0.25 mSv/yr [25 mrem/yr] unrestricted release dose standard, or 25 μ Sv/yr [2.5 mrem/yr]).³ Based on the licensee's analysis, only six radionuclides are considered significant dose contributors (C-14, Co-60, Cs-137, Pu-238, Pu-239, and Pu-240). For the six radionuclides considered "significant" by the licensee, the sum-of-fractions is approximately 6. In both cases, the sum-of-fractions exceeds the EPA consultation trigger levels. Therefore, the NRC is requesting a Level 1 consultation for the soil DCGLs.

Note that the licensee calculated DCGLs for basement substructures, embedded piping, and buried piping that are proposed to remain behind in the subsurface following decommissioning. Because the DCGLs for these materials are provided in pCi/m², assumptions would have to be made to convert these DCGLs to volumetric concentrations. No attempt was made to convert the DCGLs to concentrations that could be compared to the MOU values.

Prior to the NRC's termination of the license, the licensee must show that the OC site will meet the NRC's criteria in 10 CFR 20.1402. The criteria in 10 CFR 20.1402 provide that the licensee must demonstrate, through its FSS and in accordance with 10 CFR 50.82(a)(11)(ii), that the

¹ Cm-244, Pu-240, Np-237, and Sb-125 are ROCs but no MOU trigger value is available.

² Note that while Pu-240 is not listed in the MOU table, Pu-239 and Pu-240 may be reported together and therefore the Pu-239 MOU value is used to calculate the Pu-240 fraction. However, the sum-of-fractions is similar whether or not Pu-240 is considered.

³ Section 3.3 of NUREG-1757, Volume 2, Rev. 2, discusses "Insignificant Radionuclides and Exposure Pathways."

residual radioactivity that is distinguishable from background radiation results in an all-pathways total effective dose equivalent to an average member of the critical group that does not exceed 0.25 millisieverts per year (25 millirem per year). The criteria in 10 CFR 20.1402 also require that the residual radioactivity has been reduced to levels that are as low as reasonably achievable (ALARA). The dose criteria in 10 CFR 20.1402 are fully protective of the public health and safety and were the result of a comprehensive rulemaking (62 FR 39058; July 21, 1997), including an accompanying generic environmental impact statement.

Individuals at a decommissioned site are expected to receive doses substantially below the criteria because of the application of the ALARA principle, conservative dose modeling assumptions, and the nature of the cleanup process itself, which often reduces residual contamination levels significantly below site DCGLs. Additionally, the residual radioactivity at the site is expected to be much lower than the proposed DCGL values because meeting the “not to exceed 25 millirem per year” criteria must be demonstrated using an all pathways, sum-of-fractions approach. Each individual DCGL represents a concentration level corresponding to 25 millirem per year. Thus, in applying the sum-of-fractions requirement, the actual cleanup values will be reduced to ensure that the potential dose from all residual radioactivity at the site from all media is less than 25 millirem per year.

On-site monitoring wells have been sampled as part of an ongoing groundwater monitoring program for selected gamma emitters, tritium, and gross alpha and beta, and triggers for gross measurements would lead to analyses of hard-to-detects and transuranics. In addition, starting in 2024, groundwater samples were analyzed for all 21 site-specific ROCs identified in the LTP. The NRC has determined that the radionuclide levels at the site are well below EPA’s derived concentrations for the beta + photon maximum concentration limit (MCL), including a consideration of a sum-of-fractions approach that would account for the presence of multiple plant-related radionuclides. Therefore, the NRC is not requesting a Level 1 consultation for groundwater.

A tritium leak to the groundwater system in 2009 was remediated until 2019. In 2024, post-remediation tritium exceeded 250 pCi/L in only one of 21 site monitoring wells with a value of 694 pCi/L. No other site-specific ROCs were detected in 2024. Based on the results of recent groundwater monitoring performed at the site, the NRC does not expect the groundwater concentrations measured during the FSS to exceed the EPA MCLs. If the groundwater concentrations measured during the FSS do exceed the EPA MCLs, that outcome would trigger a Level 2 consultation. The NRC will confirm its expectation at the time of FSS, and if necessary, request a Level 2 consultation.

Following your staff’s review of the enclosure and other relevant information, as specified in Section V.D.1 of the MOU, please send us your views on the OC site within 90 days of receiving this notification.

As part of the OC LTP review, the NRC staff will prepare an Environmental Assessment, which will be published in the *Federal Register*. The staff anticipates approving the OC LTP, should all requirements be met, after the conclusion of its review and the consultation process. Following site remediation activities, the licensee will submit an FSS Report. The NRC staff will review the information contained in this survey report and will compare the remaining levels of residual radioactivity to the MOU trigger levels. If the FSS measurements show that the remaining radionuclide concentrations are below the values set forth in Table 1 of the MOU as well as the final approved DCGL values, and if all criteria for license termination are met, then the NRC will proceed to terminate the OC license (except for the ISFSI) and the site will be released for

unrestricted use. The NRC will inform EPA of such findings. If the FSS measurements show that the remaining radionuclide concentrations are above the values set forth in Table 1 of the MOU, then the NRC will engage in Level 2 consultation with EPA to identify and resolve any remaining issues before proceeding to license termination.

In the meantime, if you have any questions regarding this letter or the remediation activities at the OC site please contact Mr. Shaun Anderson, Chief of the NRC's Reactor Decommissioning Branch, at (301) 415-2039.

Sincerely,



Signed by Marshall, Jane
on 07/19/25

Jane E. Marshall, Director
Division of Decommissioning, Uranium Recovery,
and Waste Programs
Office of Nuclear Material Safety
and Safeguards

Docket No. 05000219
License No. DPR-16

Enclosure:
OC Proposed Cleanup Values

cc: Oyster Creek Service List
Stuart Walker, U.S. EPA
Conrad Sherman, U.S. EPA, Region 2

SUBJECT: CONSULTATION ON THE DECOMMISSIONING OF THE OYSTER CREEK
 NUCLEAR GENERATING STATION IN OCEAN COUNTY, NEW JERSEY
 (EPID L-2024-LLA-0107) DATED: July 19, 2025

DISTRIBUTION:

PUBLIC

ADimitriadis, RI/DRSS

EEve, RI/DRSS

ATaverna, RI/DRSS

RidsRgn1MailCenter Resource

ADAMS Accession No.: ML25176A052

*via e-mail

OFFICE	NMSS/RDB	NMSS/RDB	NMSS/RTAB	NMSS/RDB	NMSS/RDB
NAME	ASnyder	RFedors	CBarr	GChapman	CHenderickson
DATE	06/25/2025	06/25/2025	07/01/2025	07/08/2025	07/09/2025
OFFICE	NMSS/RDB	NMSS/RTAB	NMSS/DUWP	OGC/NLO	
NAME	SAnderson	CRidge	JMarshall	*BRatichek	
DATE	07/09/2025	07/10/2025	07/19/2025	07/28/2025	

Proposed Soil Cleanup Values (DCGLs)
(picrocuries per gram (pCi/g)) For Proposed
Radionuclides of Concern (ROC)

Proposed Radionuclide of Concern (ROC)	Proposed Soil DCGL (pCi/g)	EPA MOU Industrial Use Soil Concentration (pCi/g)
Am-241	7.3E+02	5.68E+02
C-14	2.1E+03	1.23 E+05
Cm-243	1.8E+02	6.7E+01
Cm-244	1.8E+03	
Co-60	7.9E+00	6.0E+00
Cs-137	3.6E+01	1.1E+01
Eu-152	1.8E+01	7.0E+00
Eu-154	1.6E+01	8.0E+00
Fe-55	8.4E+06	2.21E+06
H-3	5.0E+04	4.23E+00
Mn-54	3.4E+01	1.12E+02
Nb-94	1.3E+01	3.0E+00
Ni-63	7.8E+06	5.55E+05
Np-237	5.8E+01	
Pu-238	1.1E+03	1.64E+03
Pu-239	2.4E+02	1.43E+03
Pu-240	1.1E+03	
Pu-241	2.5E+04	1.72E+05
Sb-125	5.6E+01	
Sr-90	4.2E+03	1.070E+03
Tc-99	1.4E+04	8.94E+04

NOTES: Proposed DCGLs in **bold** are those that exceed the consultation trigger limits from the EPA MOU Table 1 soil concentrations for the industrial use scenario.

Highlighted rows indicate radionuclides that the licensee expects to be significant contributors to residual radioactivity exposure. This determination is made after identifying other radionuclides in the table as likely insignificant in terms of potential dose contribution to future site users. This assessment is subject to change as decommissioning progresses.