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

July 19, 2024

Jeffrey P. Dostal, Site Vice President
Oyster Creek Nuclear Generating Station
741 Route 9 South
Forked River, NJ 08731

SUBJECT: OYSTER CREEK NUCLEAR GENERATING STATION – PREAPPLICATION READINESS ASSESSMENT OF THE HOLTEC DECOMMISSIONING INTERNATIONAL LICENSE TERMINATION PLAN - JUNE 20, 2024, CLARIFICATION CALL

Dear Jeff Dostal:

On April 19, 2024, the U.S. Nuclear Regulatory Commission (NRC) issued a preapplication readiness assessment of certain areas of the Holtec Decommissioning International, LLC (HDI) Oyster Creek draft license termination plan license application request (Agencywide Documents Access and Management System (ADAMS) Accession No. ML24094A214). At the request of HDI, the NRC held a clarification call with HDI on staff observation COM-6 and Chapter 6 staff observations on use of distribution coefficients (K_ds) in modeling (enclosure to April 19, 2024, letter). A summary of the HDI's questions and the staff's clarification comments are documented in the enclosure 1. A list of attendees is documented in enclosure 2.

In accordance with 10 CFR 2.390 a copy of this letter will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records component of NRC's ADAMS. ADAMS is accessible from the NRC Website at http://www.nrc.gov/reading-rm/adams.html.

If you have any questions concerning this matter, please contact me at (301) 415-6822 or via e-mail at Amy.Snyder@nrc.gov.

Sincerely,

Signed by Snyder, Amy on 07/19/24

Amy M. Snyder, Senior Project Manager
Reactor Decommissioning Branch
Division of Decommissioning, Uranium Recovery and Waste Programs
Office of Nuclear Material Safety and Safeguards

Docket Nos.: 50-219 and 72-15
License No.: DPR-16

Enclosures:
1. Clarification Questions and Comments
2. List of Attendees

cc: S. Johnston, S.Johnston@holtec.com
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Oyster Creek ListServ

OYSTER CREEK NUCLEAR GENERATING STATION (OCNGS)
PREAPPLICATION READINESS ASSESSMENT OBSERVATIONS FOR
THE DRAFT LICENSE TERMINATION PLAN
CLARIFICATION QUESTIONS AND STAFF COMMENTS

OBSERVATIONS ON THE DESIGN AND PLANNING FOR THE FINAL STATUS SURVEY

Item No.	License Termination Plan (LTP) Section	LTP Page No.	Chapter 5, Final Status Survey Design and Planning
COM-6	Section 5.2.7.3, Deselection of Insignificant Radionuclides	5-14	The staff notes that in making the determination that a radionuclide or pathway is insignificant, uncertainty in parameters and exposure pathways should be considered. For example, if radionuclides present at the site could have a significant dose if certain plausible exposure pathways are considered, then the licensee should consider retaining the radionuclide for detailed analysis. Furthermore, the licensee should ensure that parameters are conservatively selected in determining the dose contributions of the radionuclide and pathway. **HDI question:** HDI asked for clarification regarding what the staff means by ensuring conservativeness for pathway analysis. **Staff's 6-20-24 Comments:** NRC staff clarified that Oyster Creek needs to consider both the compliance scenario, as well as less likely but plausible exposure scenarios. In other words, the radionuclide or pathway must be insignificant for all exposure scenarios considered (e.g., residential scenarios as well as the proposed industrial scenario). Licensees should conservatively select parameter values in determining whether a radionuclide is insignificant (e.g., the licensee should select parameters that tend to over-estimate dose).

OYSTER CREEK NUCLEAR GENERATING STATION (OCNGS)
PREAPPLICATION READINESS ASSESSMENT OBSERVATIONS FOR
THE DRAFT LICENSE TERMINATION PLAN
CLARIFICATION QUESTIONS AND STAFF COMMENTS (CONTINUED)

OBSERVATIONS ON THE APPROACH FOR ADDRESSING COMPLIANCE WITH THE RADIOLOGICAL CRITERIA FOR LICENSE TERMINATION

Comment 3 on Chapter 6 of the Draft OCNGS LTP

3. Chapter 6 of the LTP cites RESRAD documentation for parameter support in multiple instances without additional support. As stated in NUREG-1757, Volume 2, Revision 2, Appendix I, the RESRAD deterministic defaults are not acceptable for use without further justification. Instead, a graded approach should be used with more support provided for parameters important to dose.

While the RESRAD default parameter distributions can be used for parameter assignment to perform probabilistic sensitivity analysis, as documented in sources such as NUREG/CR-7267, NUREG-1757, Volume 2, Revision 2, guidance indicates that for risk-significant parameters such as distribution coefficients or K_ds that additional support may be needed (i.e., that the 25^{th} or the 75^{th} percentile values from the parameter distributions may not be demonstrably conservative). A good understanding of the factors influencing any risk-significant K_ds identified in probabilistic sensitivity analysis is needed along with a review of the literature supporting the site-specific values to ensure that a deterministic value is conservatively selected.

For example, even if site-specific soil types are used to define the parameter distributions, other factors such as geochemical conditions (e.g., pH, Eh, presence of complexing agents or competing ions) may be important to selection of the K_d for a particular site as evidenced by the fact that K_ds for a particular radionuclide can vary orders of magnitude for the same soil type. In some cases, the pedigree of the data used to define the parameter distributions may be poor and some minimal level of effort is needed by the licensee to justify the selection of risk-significant parameters in their dose modeling calculations to derive DCGLs.

HDI Question: HDI asked for clarification on a related comment about selection and support for distribution coefficients (K_ds). The NRC's stated that the uncertainty in exposure pathways needs to be considered in selecting the distribution coefficient as well as the level of detail needed in selection of a K_d value for risk-significant parameters at the site.

Staff 6-20-24 comments on use of K_d: The NRC staff clarified that Oyster Creek should perform a probabilistic sensitivity analysis for each exposure scenario, including less likely but plausible exposure scenarios, to provide a basis for selection of

deterministic parameters. For example, if the groundwater pathway is turned on in some scenarios such as the residential scenario, then there may be a negative correlation between K_d and dose for that scenario (and a positive correlation between K_d and dose for the industrial scenario). Therefore, the selection of deterministic parameter values for risk-significant parameters may vary based on the exposure scenario selected.

LIST OF ATTENDEES AT THE JUNE 20, 2024, CLARIFICATION CALL ON THE OYSTER CREEK NUCLEAR GENERATING STATION (OCNGS) PREAPPLICATION READINESS ASSESSMENT OBSERVATIONS FOR THE DRAFT LICENSE TERMINATION PLAN

Nuclear Regulatory Commission (NRC)
Amy Snyder
Cynthia Barr

Holtec Decomissioning Internatlonal, Oyster Creek and its Contractors
Steven Johnston, S.Johnston@holtec.com
Tom Williamson, t.williamson@holtec.com
Kevin Wolf, kg.wolf@holtec.com
Edwin O'Brien, e.obrien@holtec.com
Christopher Messier, ccmessier@radsafety.com
Martin Erickson, mcerickson@radsafety.com

ENCLOSURE 2

OYSTER CREEK NUCLEAR GENERATING STATION – PREAPPLICATION READINESS ASSESSMENT OF THE HOLTEC DECOMMISSIONING INTERNATIONAL LICENSE TERMINATION PLAN - JUNE 20, 2024, CLARIFICATION CALL DATE July 19, 2024

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OFFICE	NMSS/DUWP/RDB	R-I/EAGLT	NMSS/DUWP/RDB	
NAME	ASnyder *AS*	NWarnek *NW*	ASnyder *AS*	
DATE	Jul 18, 2024	Jul 19, 2024	Jul 19, 2024	

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