

December 19, 2012

Ms. Rebecca Clark, Director  
Division of Assessment and Remediation  
Office of Superfund Remediation  
and Technology Innovation  
U.S. Environmental Protection Agency  
1200 Pennsylvania Avenue, NW  
Mail Code: 5204P  
Washington, DC 20460

SUBJECT: MEMORANDUM OF UNDERSTANDING CONSULTATION ON THE  
DECOMMISSIONING OF THE FORMER UNITED NUCLEAR CORPORATION  
NAVAL PRODUCTS SITE IN NEW HAVEN, CONNECTICUT

Dear Ms. Clark:

This letter is intended to inform you of the decommissioning oversight actions that the U.S. Nuclear Regulatory Commission (NRC) has taken, and intends to take, for the former United Nuclear Corporation Naval Products (UNC Naval) Site in New Haven, Connecticut.

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." Under the MOU, the EPA agreed to continue its Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) deferral policy of not listing sites on the 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, the EPA agrees to a policy of deferral to the NRC decision-making on decommissioning without the need for consultation.

For sites that trigger the criteria in the MOU, the NRC will consult with the EPA at two points in the decommissioning process: (1) prior to the NRC approval of the license termination plan or Decommissioning Plan (DP), 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 UNC Naval Site. In July 2012, UNC Naval submitted an Addendum to their DP that included Derived Concentration Guideline Levels (DCGLs) for areas beneath certain buildings (Agencywide Documents Access and Management System (ADAMS) Accession No. ML12194A664). The revised DCGL for one radionuclide, uranium-234, exceeds the soil concentration value of 401 picocuries per gram (pCi/g) in Table 1 of the MOU. The NRC staff has reviewed the proposed values and the UNC Naval DCGLs are included in the enclosure.

### The UNC Naval Site

The UNC Naval facility fabricated nuclear fuel components from enriched uranium for the naval reactor program from 1956-1974. In 1974, UNC Naval closed the New Haven site. In April 1976, the site was released for unrestricted use by the NRC. In 1989 the General Accounting Office (GAO) issued a report which raised concerns about NRC's criteria and procedures used for the decommissioning of formerly licensed sites. As a result, in 1990, the NRC decided to undertake a review of terminated materials licenses to assure that previously licensed facilities were properly decontaminated and posed no threat to public health and safety. Radiological surveys conducted under this program identified the presence of enriched uranium that exceeded the average soil concentration clean-up criteria at the UNC Naval site and additional characterization of specific areas of the site was required. In August 1998, UNC Naval agreed to further remediate the site and submitted a DP and Characterization Plan (ML010110248) to NRC. The DP incorporated the uranium cleanup value of 30 pCi/g specified in the Branch Technical Position for "Disposal or Onsite Storage of Thorium or Uranium Wastes from Past Operations," (ML030590501) for enriched uranium in soil. In April 1999, the NRC concluded that it was acceptable for UNC Naval to proceed with clean-up activities in accordance with their DP (ML12144A324). In a letter dated July 7, 2008 (ML081890407), the NRC confirmed that UNC Naval would conduct remediation activities as specified in their original DP, using the Branch Technical Position clean-up value.

In September 2011, UNC Naval began remediation activities and, as of September 2012, had remediated most of the areas that were described in the DP. During remedial activities, UNC Naval identified soil under certain building structures that exceeded the clean-up value established in the DP. UNC Naval also determined that further remediation in these areas to achieve the clean-up criteria could impact the structural integrity of the building. In July 2012, UNC Naval submitted an addendum to their DP that proposed revised DCGLs for U-234, U-235, U-238, and total uranium in these impacted areas (ML12194A664). The DCGLs were developed using the most recent version of the RESRAD computer code (Version 6.5) and incorporated a dose-based release criteria that is outlined in NUREG 1757, Volume 1, Rev. 2, "Consolidated Decommissioning Guidance, Decommissioning Process for Materials Licensees". The addendum also specified a final status survey plan consistent with NUREG 1575, Revision 1, "Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM)."

The NRC has determined that the revised DCGL values for U-234, U-235, U-238, and total uranium, are appropriate, and the use of these DCGL values is consistent with the NRC dose criteria for license termination in 10 CFR Part 20 subpart E. The regulations in 10 CFR Part 20, Subpart E allow a site to be released for unrestricted use if the maximum Total Effective Dose Equivalent to an average member of the critical group does not exceed 0.25 milliSieverts per year (mSv/yr) (25 mRem/yr) and that the residual radioactivity has been reduced to levels that are as low as is reasonably achievable (ALARA). The criteria in the NRC regulations are fully protective of the public health and safety and were the result of a comprehensive rulemaking, including an accompanying generic environmental impact statement. Furthermore, future residents at a decommissioned site may expect to receive doses substantially below the regulatory limit because conservative dose modeling assumptions, and the nature of the cleanup process itself, often reduces residual contamination levels significantly below site DCGLs.

The DCGL calculated by UNC Naval to meet the NRC dose criterion of 0.25 mSv/yr (25 mRem/yr) is 549 pCi/g for U-234. Because the State of Connecticut has a lower dose criterion of 0.19 mSv/yr (19 mRem/yr), UNC Naval has proportionally reduced the soil DCGL value to 417 pCi/g for U-234 to meet the lower dose value. Based on the information provided by UNC Naval, the DCGLs would only apply to the soil in areas that are not readily accessible, such as those beneath the structural supports, and trenches and tunnels beneath the concrete floor. The portion of the site for which final status surveys have been completed remain subject to the cleanup criteria established in UNC Naval's initial DP (ML010110248).

### Next Steps

In accordance with the MOU, the NRC is requesting the EPA's views on the former UNC Naval Site DP Addendum. To help expedite this Level 1 consultation, the NRC staff is available to meet with you and representatives of your staff to present our technical findings in greater detail. We believe such a meeting can provide you with additional details concerning the UNC Naval decommissioning and answer any questions you or your staff may have. It is the NRC's objective to complete its review of the addendum to the DP, including this consultation process, by March 2013, which would enable UNC Naval to continue decommissioning/cleanup of the New Haven, Connecticut site.

Following site remediation activities, UNC Naval will submit a Final Status Survey Report (FSSR). The NRC staff will review information in the FSSR and will compare the remaining residual radioactivity to the MOU trigger levels. If the measurements exceed the MOU values, in accordance with the MOU, a Level 2 consultation between the agencies will be initiated to identify and resolve any remaining issues.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice for Domestic Licensing Proceedings and Issuance of Orders," 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 Web site at <http://www.nrc.gov/reading-rm/adams.html>.

R. Clark

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If you have any questions concerning the above, please contact Andrew Persinko at (301) 415-7479 or via email at [Andrew.Persinko@nrc.gov](mailto:Andrew.Persinko@nrc.gov).

Sincerely,

**/RA/**

Larry W. Camper, Director  
Division of Waste Management  
and Environmental Protection  
Office of Federal and State Materials  
and Environmental Management Programs

Docket No.: 0700037 (Retired)

License No.: SNM-368 (Terminated)

Enclosure:  
Former UNC Naval Site – New Haven,  
Connecticut Revised Cleanup Values  
(DCGLs)

cc: Robert Bonito, General Manager UNC  
GE Engine Services/UNC  
20 Research Parkway Unit E  
Old Saybrook, CT 06475

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