

Technical Evaluation Report  
Naval Surface Warfare Center Dahlgren Division  
Department of the Navy  
Docket No. 030-29462/Master Materials License No. 45-23645-01NA

## INTRODUCTION

In a letter dated October 27, 2014 (ML14311A656), the U.S. Department of the Navy (Navy) submitted a request for a four-year extension to its alternate decommissioning schedule for the Naval Surface Warfare Center Dahlgren Division (Dahlgren) to the U.S. Nuclear Regulatory Commission (NRC) for review and approval pursuant to 10 CFR 30.36(i). The Navy's original request for an alternate decommissioning schedule was contained in a letter dated June 3, 2013 (ML13165A300). Additional information was provided by the Navy in letters dated August 9, 2013 (ML13266A234), October 7, 2013 (ML13303A965), and October 30, 2013 (ML13330B611). On March 24, 2014 (ML14084A250), the NRC approved the Navy's request for an alternate decommissioning schedule to complete decommissioning activities by October 31, 2014. The Navy submitted a Final Status Survey (FSS) Report for Dahlgren by letter dated May 12, 2014 (ML14140A589).

By letter dated October 21, 2014 (ML14311A740), the Navy retracted the FSS report due to inconsistencies found during ongoing Navy review of the FSS data. The Navy has now requested that the time for submitting the Final Status Survey (FSS) Report required by 10 CFR 30.36(j) to document the completion of decommissioning at Dahlgren be extended until July 30, 2018. This Technical Evaluation Report (TER) addresses the review and approval of the extension to the decommissioning schedule for Dahlgren. The NRC's review was conducted in accordance with NUREG-1757, Volume 3 (Revision 1), "Consolidated Decommissioning Guidance – Financial Assurance, Recordkeeping, and Timeliness."

## BACKGROUND

Test firing of depleted uranium (DU) rounds at Dahlgren began in 1972 under Materials License No. SMB-1145 issued on September 28, 1972, by the NRC's predecessor agency, the Atomic Energy Commission. In 1987, after the NRC issued a Master Materials License (MML) to the Navy dated March 23, 1987, the Navy issued Navy Radioactive Materials Permit (NRMP) No. 45-00178-S1NP authorizing the test firing of depleted uranium rounds at Dahlgren. In January 2002, the Navy converted the permit to a decommissioning permit, NRMP No. 45-00178-Y1NP.

The Navy submitted a Decommissioning Plan (DP) (ML080980355) dated January 10, 2008, for Building 200, Bay 4, Dahlgren Laboratory, Dahlgren, Virginia. A Safety Evaluation Report (SER) dated April 27, 2009 (ML14041A329), was prepared by the NRC staff supporting approval of the DP. The DP was incorporated into the MML License on April 27, 2009. The SER for the DP evaluated: (1) the radiological status of the facility; (2) the unrestricted release criteria; (3) the planned decommissioning activities; (4) project management and organization; (5) the radiation safety and health program; (6) the environmental monitoring and control program; (7) the radioactive waste management program; (8) the quality assurance program; (9) facility radiation surveys; and (10) financial assurance.

Decommissioning work at Dahlgren was initiated on June 2, 2010, and site work was completed on August 18, 2011. The contractor responsible for decommissioning work at Dahlgren experienced financial difficulties and was also in litigation with the employee that performed the FSS. As a result of these financial difficulties and the litigation, some of the FSS data was not available to the contractor; therefore, the contractor was not able to provide a complete FSS report to the Navy in the contractually agreed upon timeframe. Although several draft reports were provided, the Navy's review of the information determined that the FSS draft reports did not provide sufficient documentation of the FSS results to demonstrate compliance with the criteria and guidance set forth in the DP and NRC regulations. As a result, the Navy determined that it needed additional data that would then require further evaluation and review in order for the Navy to provide an accurate and complete report to the NRC. The Navy originally believed that they would acquire this additional data and would have sufficient time to submit a complete FSS Report to NRC by October 31, 2014.

During the period from February 4 through March 6, 2013, the NRC conducted a routine inspection of the activities authorized by the Navy MML. Based on the results of the inspection [documented in the Inspection report dated April 9, 2013 (ML13101A109)], the NRC determined that the Navy was not in compliance with the requirements of 10 CFR 30.36(h)(1) as it had not completed decommissioning at the Dahlgren site within the specified time limits. As part of the proposed corrective actions to address the violation (ML13135A063), the Navy requested an alternate decommissioning schedule extending the date to document the completion of decommissioning until October 31, 2014, to provide them time to evaluate and restructure the FSS Report before submitting it to the NRC. In addition, as part of the corrective actions, the Navy developed a Standard Operating Procedure to programmatically address decommissioning timeliness for Navy and Marine sites undergoing decommissioning.

After submitting the FSS Report on May 12, 2014, the Navy continued to review the data contained within the report. Subsequently the Navy determined that there were inconsistencies in the report requiring clarification before final review by the NRC in that the report did not comply with the criteria and guidance in the approved DP and NRC regulations and withdrew the FSS Report. The Navy is in the process of hiring a new contractor through their contracting process; and will have to re-perform the final status surveys and develop a new FSS report in order to demonstrate that the area has been remediated to acceptable levels as delineated in the DP. Under their process, the Navy's technical staff would then review the FSS report and submit it to the Naval Radiation Safety Committee (NRSC). The NRSC would then submit it to the NRC for review and approval.

## SITE DESCRIPTION

The decommissioned site is located at Dahlgren in King George County, Virginia, approximately 40 miles south of Washington, D.C. and 25 miles east of Fredericksburg, Virginia. The site includes Bay 4 in Building 200 which contained the target bay and gun bay. The target bay was 14.5 feet wide, 9 feet high, and 106 feet in length, and the gun bay was 14.5 feet wide, 9 feet high, and 138 feet in length. Building 200, Bay 4 was an indoor firing range where single shot tests on 20 - 40 millimeter DU and tungsten kinetic energy penetrators were fired. It is estimated that 2,000 to 3,000 DU rounds were fired in Bay 4.

## TECHNICAL EVALUATION FOR ALTERNATE DECOMMISSIONING SCHEDULE

NRC staff has reviewed the Navy's request to further extend the time period established in 10 CFR 30.36(i), using guidance contained in NUREG 1757, Volume 3 (Revision 1), "Consolidated NMSS Decommissioning Guidance: Financial Assurance, Recordkeeping, and Timeliness," Section 2.6.

The NRC staff concludes that a review of the radiation safety and health program, financial assurance, and environmental monitoring and control program was not required because they had been previously approved during review of Dahlgren's DP, and this extension request will not change those previous commitments. The Navy has requested an extension in its decommissioning completion due date from April 2011 to July 31, 2018, because its current contractor has continued to experience financial and legal difficulties resulting in continued delay in providing an accurate FSS Report to the Navy. The requested extension would provide the Navy with the time it needs to hire another contractor to repeat the FSS and write another FSS Report to demonstrate that the site was decommissioned in accordance with the DP.

10 CFR 30.36(i) states:

"The Commission may approve a request for an alternative schedule for completion of decommissioning of the site or separate building or outdoor area, and license termination if appropriate, if the Commission determines that the alternative is warranted by consideration of the following:

- (1) Whether it is technically feasible to complete decommissioning within the allotted 24-month period;
- (2) Whether sufficient waste disposal capacity is available to allow completion of decommissioning within the allotted 24-month period;
- (3) Whether a significant volume reduction in wastes requiring disposal will be achieved by allowing short-lived radionuclides to decay;
- (4) Whether a significant reduction in radiation exposure to workers can be achieved by allowing short-lived radionuclides to decay; and
- (5) Other site-specific factors which the Commission may consider appropriate on a case-by-case basis, such as the regulatory requirements of other government agencies, lawsuits, ground- water treatment activities, monitored natural ground-water restoration, actions that could result in more environmental harm than deferred cleanup, and other factors beyond the control of the licensee."

The NRC has considered the five factors identified above and determined the following:

- (1) It is not technically feasible to complete decommissioning within the allotted 24-month period. Although on site remediation and waste disposal activities have been completed, due to ongoing financial and legal issues experienced by the original contractor, the Navy has not been able to submit an FSS report to the NRC. As discussed in the Navy's October 27, 2014 letter, it is expected to take more than a year to procure the services of a new contractor and have them perform the final status surveys.

- (2) As part of the decommissioning activities that the Navy has undertaken, waste has already been shipped from the site and disposed of in accordance with the DP and there is no waste remaining at the site. Therefore, there are no waste disposal issues that would impact the Navy's ability to complete decommissioning.
- (3) The decommissioning wastes generated for disposal from the remediation activities at the Dahlgren site do not contain short-lived radionuclides. Therefore, there are no volume reduction benefits that would be achieved by allowing short-lived radionuclides to decay.
- (4) The decommissioning wastes generated for disposal from the remediation activities at the Dahlgren site do not contain short-lived radionuclides. Therefore, there is no significant reduction in radiation exposure to workers that would be achieved by allowing short-lived radionuclides to decay. Waste has already been removed from the site.
- (5) One of the site specific factors that the NRC considered at Dahlgren is the ongoing financial difficulties and litigation involving the Navy's original decommissioning contractor. The contractor responsible for decommissioning work at Dahlgren, due to financial difficulty, litigation, and lack of complete FSS data, was not able to provide the FSS report to the Navy in the contractually agreed upon time. Although several draft FSS reports were provided, the Navy determined that the draft reports did not comply with the criteria and guidance set forth in the DP and NRC regulations. The Navy is now working to hire another contractor to perform a new FSS and write another FSS Report. The NRC staff considers the performance issues of the Navy's contractor that led to the unavailability of the FSS data to not be reasonably foreseeable and, as such, to be beyond the Navy's control. As previously indicated, the Navy has developed a programmatic solution that should address future decommissioning timeliness.

## CONCLUSION

Based on the considerations discussed above, the NRC staff concludes that there is reasonable assurance that the health and safety of the public will not be endangered by the alternate schedule for completion of decommissioning activities regarding the submittal of the FSS Report, as the removal and disposal of the radiologically contaminated material has already occurred. The staff further concludes that it is in the public interest to grant the extension of time to allow the Navy to hire another contractor to perform an additional FSS and to develop an accurate and complete FSS Report that is acceptable to the NRC in order to demonstrate that decommissioning activities were satisfactorily completed in accordance with the approved DP. The NRC will amend the Navy's MML extending the decommissioning completion due date for the Dahlgren site to July 30, 2018.

## PRINCIPAL CONTRIBUTOR

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December 31, 2014

## REFERENCES

- A. NUREG-1757, Volume 3, (Revision 1), "Consolidated Decommissioning Guidance – Financial Assurance, Recordkeeping, and Timeliness" (ML12048A683)
- B. Title 10 of the *Code of Federal Regulations*, Section 30.36(i)
- C. Final Decommissioning Plan, S Building 200, Bay 4, Dahlgren Laboratory, Dahlgren, Virginia, dated January 10, 2008 (ML080980355)
- D. Safety Evaluation Report, Approval Of Department of The Navy Decommissioning Plan, Dahlgren Laboratory, Docket 03029462 (ML14041A329)
- E. "Notice of Availability of Environmental Assessment and Finding of No Significant Impact for License Amendment to Materials License No. 45-23645-01NA, to Incorporate the Decommissioning Plan for the Naval Surface Warfare Center at Dahlgren, Virginia," *Federal Register* notice dated December 18, 2008 (73 FR 77078)
- F. NRC Inspection Report No. 03029462/2013001, Department Of The Navy Biennial Inspection and Notice Of Violation, dated April 9, 2013 (ML13101A109)
- G. Navy letter dated June 3, 2013, "Alternate Schedule Request for Submission of Final Status Survey Reports" (ML13165A300)
- H. Navy letter dated August 9, 2013, "Response to NRC Request for Additional Information (Docket No. 03029462) Concerning Navy's Alternate Schedule Request for Submission of Final Status Survey Reports of 03 June 2013" (ML13266A234)
- I. Navy letter dated October 7, 2013 "Update Concerning Navy's Alternate Schedule Request for Submission of Final Status Survey Reports" on 03 June 2013 (ML13303A965)
- J. Navy letter dated October 30, 2013, "November Update Concerning Navy's Alternate Schedule Request for Submission of Final Status Survey Reports on 03 June 2013" (ML13330B611)
- K. Navy e-mail dated February 25, 2014, "RE: New Final Status Survey" (ML14064A064)
- L. Navy letter dated May 12, 2014, "Decommissioning Report For Building 200, Bay 4, Outside Areas, Naval Surface Warfare Center, Dahlgren Division" (ML14140A589)
- M. Navy Letter dated October 21, 2014, "Request Retraction of Final Status Survey Report for Naval Surface Warfare Center, Dahlgren Division" (ML14311A740)
- N. Navy Letter dated October 27, 2014, "Request Alternate Schedule for Completion of Decommissioning at Naval Surface Warfare Center, Dahlgren Division" (ML14311A656)