

U.S. NUCLEAR REGULATORY COMMISSION
DOCKET NUMBER 030-28641
August 5, 2005

Environmental Assessment related to an Amendment
of U.S. Nuclear Regulatory Commission Materials License No. 42-23539-01AF
Issued to U.S. Department of the Air Force

The U.S. Nuclear Regulatory Commission (NRC) is considering amendment Materials License Number 42-23539-01AF and approving, pursuant to 10 CFR 20.2002, procedures not otherwise authorized in the regulations of this chapter, for disposal of four M-47 tanks containing depleted uranium (DU) to a Subtitle C RCRA hazardous waste disposal facility and has prepared an Environmental Assessment (EA) in support of this action in accordance with the requirements of 10 CFR 51.21.

SUMMARY: The NRC reviewed the request dated June 23, 2004, by the U.S. Department of the Air Force (Air Force), for disposal of four M-47 tanks containing DU, from the 98th Range Wing at Nellis Air Force Base, Nevada, to a Subtitle C RCRA hazardous waste disposal facility. The request for approval is submitted pursuant to Section 20.2002 of Title 10 of the Code of Federal Regulations (10 CFR 20.2002), "Method of Obtaining Approval of Proposed Disposal Procedures." The licensee and the NRC performed dose assessments of the disposal of this material by this method and determined that such disposal would result in doses of less than 0.01 millisievert (1 millirem) per year. The NRC has determined that a Finding of No Significant Impact (FONSI) is appropriate for the proposed action.

Introduction

The Air Force used four U.S. Army M-47 tanks as target practice at Nellis Air Force Base, Nevada. The M-47 tanks were contaminated with DU from A-10 aircraft target penetrator rounds. Each tank contains less than forty GAU-8 30mm DU rounds; each round contains 300 grams of DU. As a result of the kinetic energy released when a tank is hit by a DU round, some of the DU from the round will bond with the metal surrounding the entry point and the interior of the chamber. The DU is a metal form with a minor contribution as an oxide. The mass of the DU per tank is approximately 12 kg, and when averaged over the mass of the tank (60 tons), the source material is less than one-twentieth of 1 percent (0.05 percent) of the mixture. The Air Force demonstrated by calculation that the potential dose consequence is less than 1 mrem per year, based on the proposed burial of the M-47 tanks in a RCRA facility.

Proposed Action

The proposed action is the disposal of four (4) M-47 tanks from Nellis Air Force Base, Nevada, to US Ecology facility in Grand View, Idaho. The Air Force has conservatively assumed the inventory of DU in each of the four M-47 tanks and calculated the potential dose as less than 1 mrem per year, if all four tanks were to be disposed of in such a facility. The proposed action is in accordance with the Air Force's application dated June 23, 2004, requesting approval. This proposed action would also exempt the low-contaminated material authorized for burial from further Atomic Energy Act (AEA) and NRC licensing requirements.

Need for Proposed Action

The Air Force has an ongoing effort to clean up and maintain the range in lieu of waiting until there are extensive objects which require disposition or decontamination. The Air Force needs this amendment to the license in order to have a cost-effective method of disposal for the four M-47 tanks. The most cost-effective method is disposal to a Subtitle C RCRA hazardous waste disposal facility.

Alternatives to the Proposed Action

The alternatives to the proposed action of amending the license to allow disposal of the four M-47 tanks to a Subtitle C RCRA hazardous waste disposal facility and exempting the material from further AEA and NRC regulation includes: (1) no action alternative, (2) decontamination of the M-47 tanks, or (3) handling the M-47 tanks as low-level radioactive waste and shipping them to a low-level waste facility. The Air Force performed an evaluation to determine if the costs to decontaminate the M-47 tanks would be comparable to or less than the costs for burial in a Subtitle C RCRA hazardous waste disposal facility. For the respective four M-47 tanks, the Air Force determined the costs for burial would be less than attempting to decontaminate the tanks. Disposal of the four M-47 tanks in the manner proposed is protective of the health and safety, is consistent with as low as reasonably achievable, and is the most cost-effective alternative.

Environmental Impacts of the Proposed Action

The four M-47 tanks were used as target practice in Range 63, Target Area 10, at Nellis Air Force Base. Nellis Air Force Base is located approximately 8 miles northeast of Las Vegas, Nevada. The base itself covers more than 14,000 acres, while the total land area occupied by Nellis and its restricted ranges is about 5,000 square miles. The 98th Range Wing is responsible for the 2.9 million acre Nevada Test and Training Range, located just north of Las Vegas. The distance between Las Vegas and US Ecology, Idaho, is approximately 800 miles. The driving time would be approximately 16 hours (assuming average speed of 50 miles per hour).

The NRC has completed its evaluation of the proposed action and concludes there are no significant radiological environmental impacts associated with the disposal of four M-47 tanks to US Ecology, Idaho, which is a Subtitle C RCRA hazardous waste disposal facility. The Air Force's analysis conservatively assumed the inventory of DU in each of the four M-47 tanks was the maximum number of penetrators (i.e., 40 rounds) that potentially hit each tank. The Air Force analyzed the dose to a transport driver, loader, burial worker, and long-term impacts to a residence. While the Air Force did not analyze the groundwater impacts from the disposal, staff reviewed previous analyses in support of NUREG-1640, "Radiological Assessment for Clearance of Materials from Nuclear Facilities," which indicated that the groundwater pathway is not a controlling factor for DU. Each of the analyses conservatively estimated the exposure to less than 1 mrem total dose per year.

With regard to potential non-radiological impacts, the proposed action does not involve any historic sites nor does it affect non-radiological plant effluents. There may be a slight increase in air quality and noise impacts during the loading and transportation of each tank. However, there are no expected adverse impacts to air quality as a result of the loading and transportation of the four M-47 tanks. These activities will be short in duration and minimal as

compared to other activities at the base. Therefore, there are no significant non-radiological environmental impacts associated with the proposed action.

The proposed action and attendant exemption of the material from further AEA and NRC licensing requirements will not significantly increase the probability or consequence of accidents, no changes are being made in the types of any effluents that may be released off site, and there is no significant increase in occupational or public radiation exposure. Accordingly, the NRC concludes there are no significant environmental impacts associated with the proposed action.

Environmental Impacts of the Alternatives to the Proposed Action

As an alternative to the proposed action, the staff considered denial of the proposed action (i.e., the “no-action” alternative). The implications from the no-action alternative is that the tanks would remain on the range until disposition sometime in the future. The impacts would therefore be limited to the site, and there would be no transportation impacts and no disposal considerations or impacts until sometime in the future.

Another alternative to the proposed action, is that the Air Force may consider decontamination of the four M-47 tanks. The environmental impacts would increase as a result of this alternative from the air quality, noise and water usage during the decontamination process. Additionally, there would be an increase in occupational exposure as a result of the decontamination process.

Disposing of the four M-47 tanks in a low-level waste disposal facility is another alternative to the proposed action. This alternative has similar environmental impacts as the proposed action.

Agencies and Persons Consulted

The NRC staff has determined that the proposed action is not a major decommissioning activity and will not affect listed or proposed endangered species, nor critical habitat. Therefore, no further consultation is required under Section 7 of the Endangered Species Act. Likewise, NRC staff determined that the proposed action is not the type of activity that has the potential to cause effects on historic properties, as the M-47 tanks are currently residing in Range 63, Target Area 10, at Nellis Air Force Base. Therefore, no consultation is required under Section 106 of the National Historic Preservation Act.

On September 23, 2004, the staff consulted with two Nevada State officials, Mr. Stan Marshall of the Radiological Health Section of the Nevada State Health Division, Bureau of Health Protection Services and Ms. Jolene Johnson of the Nevada Division of Environmental Protection, regarding the environmental impact of the proposed action. Neither State Official had any comments. Additionally, the staff consulted with the Idaho State official, Mr. Doug Walker of the Idaho Department of Environmental Quality. On November 2, 2004, the State of Idaho, Department of Environmental Quality, provided comments which have been incorporated in this final EA.

Conclusion

Based on its review, the NRC staff concluded that the proposed action complies with the criteria in 10 CFR 20.2002 for alternate disposal method to a Subtitle C RCRA hazardous waste disposal facility; and as such, the NRC licensed DU is exempt from further AEA and NRC regulation. The NRC staff has prepared this EA in support of the proposed action to amend License No. 42-23539-01AF. On the basis of the EA, NRC has concluded there are no significant environmental impacts and the license amendment does not warrant the preparation of an Environmental Impact Statement. Accordingly, it has been determined that a Finding of No Significant Impact is appropriate.

List of Preparers

Rachel S. Browder, M.S., Health Physicist, Nuclear Materials Licensing Branch, Division of Nuclear Materials Safety, Region IV

List of References

1. US NRC Radioactive Materials License: Department of the Air Force, Docket Number 030-28641, License Number 42-23539-01AF
2. Letter dated June 23, 2004, U.S. Department of the Air Force (ML041810555)
3. NRC Technical Review of Code of Federal Regulation (10 CFR) Part 20.2002 Request by U.S. Department of the Air Force. (ML042120512)
4. Title 10 Code of Federal Regulations, 20.2002, "Method of Obtaining Approval of Proposed Disposal Procedures"
5. Title 10 Code of Federal Regulations, Part 51, "Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions"

The application for the license amendment and supporting documentation are available for inspection at NRC's Public Electronic Reading Room at <http://www.nrc.gov/reading-rm/adams.html>. Any questions with respect to this action should be referred to Rachel Browder, Nuclear Materials Licensing Branch, Division of Nuclear Materials Safety, Region IV, 611 Ryan Plaza Drive, Suite 400, Arlington, Texas 76011, telephone (817) 276-6552, fax (817) 860-8263.

Dated at Arlington, Texas this 5th day of August, 2005

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Jack E. Whitten, Chief
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Region IV

EA for USAF DU Tanks

cc: (via ADAMS distrib):

LDWert

CLCain

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DBSpitzberg

RSBrowder

RJEvans

FCDB File

Material Docket Files

SISP Review Completed: RSB ADAMS: ☒ Yes ☐ No Initials: RSB
☒ Publicly Available ☐ Non-Publicly Available ☐ Sensitive ☒ Non-Sensitive

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