

U.S. NUCLEAR REGULATORY COMMISSION
**OFFICE OF FEDERAL AND STATE MATERIALS AND ENVIRONMENTAL
MANAGEMENT PROGRAMS**
DIVISION OF WASTE MANAGEMENT AND ENVIRONMENTAL PROTECTION
**ENVIRONMENTAL ASSESSMENT FOR
EXEMPTION FROM LICENSING FOR DISPOSAL OF
LOW-ACTIVITY RADIOACTIVE WASTE
FROM THE SAFETY LIGHT CORPORATION SITE IN BLOOMSBURG, PENNSYLVANIA,
AT THE US ECOLOGY IDAHO RESOURCE CONSERVATION AND RECOVERY ACT
SUBTITLE C DISPOSAL FACILITY NEAR GRAND VIEW, IDAHO**

OCTOBER 2013

Introduction

The U.S. Nuclear Regulatory Commission (NRC) staff is considering a request from US Ecology, Inc. (US Ecology), dated July 7, 2013 (US Ecology, 2013), for exemption from licensing to receive and dispose of approximately 7,640 cubic meters (270,000 cubic feet) of low-activity radioactive wastes at the US Ecology Idaho (USEI) Resource Conservation and Recovery Act (RCRA) Subtitle C hazardous and low-activity radioactive waste facility located near Grand View, Idaho. The wastes would consist of bulk debris and materials from the demolition of structures on the Safety Light Corporation (SLC) site in Bloomsburg, Pennsylvania. This proposed NRC action would exempt the US Ecology site from Atomic Energy Act and NRC licensing requirements.

The term “low-activity waste” does not have a statutory or regulatory definition, but generally means wastes that contain some residual radioactivity, including naturally occurring radionuclides, which can be safely and economically disposed of in hazardous or municipal solid waste landfills rather than in low-level radioactive waste (LLRW) disposal facilities. Such waste is invariably a fraction of the limits for Class A LLRW contained in Part 61 of Title 10 of the *Code of Federal Regulations* (10 CFR), and is often below concentrations that are considered safe for unrestricted release under international standards.

The SLC site (also known as the SLC Superfund Site) was listed on the U.S. Environmental Protection Agency's (USEPA's) National Priorities List on April 27, 2005, and is presently the subject of a remedial action under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (USEPA, 2010). The USEPA is the lead agency for the remedial action and the Pennsylvania Department of Environmental Protection (PADEP) is the support agency. The U.S. Army Corps of Engineers (USACE) is supporting the USEPA in the management and cleanup of the site under an interagency agreement.

Section 121(d)(3) of CERCLA applies in any CERCLA response action involving off-site transfer of any hazardous substance, or pollutant or contaminant (CERCLA wastes). This section of the statute is interpreted in the USEPA's Offsite Rule (OSR) (40 CFR 300.440), which requires that CERCLA wastes may only be placed in a facility operating in compliance with RCRA or other applicable Federal or State requirements. The purpose of the OSR is to avoid having CERCLA wastes from response actions authorized or funded under CERCLA contribute to present or future environmental problems by directing these wastes to management units determined to be environmentally sound (USEPA, 2013). Thus, the subject waste from the SLC Superfund Site must be disposed at an appropriate offsite disposal facility pursuant to the OSR.

Pennsylvania, where the SLC site is located, is an NRC Agreement State, while Idaho, where the USEI RCRA disposal facility is located, is not an Agreement State. In a letter dated June 11, 2013 (US Ecology, 2013, Enclosure 2), the PADEP informed the USEPA that it had authorized offsite disposal of the subject material from the SLC site in a controlled environment, such as that provided by a RCRA Subtitle C hazardous waste disposal facility. As a RCRA facility, USEI is permitted and regulated by the Idaho Department of Environmental Quality (IDEQ), not the NRC. Idaho regulations and USEI's RCRA permit provide for the acceptance and disposal of the low-activity waste material with appropriate NRC exemptions and approval.

This Environmental Assessment (EA) has been developed by the NRC staff in accordance with the requirements of 10 CFR 51.21 and 51.30(a).

The Proposed Action

The proposed federal action is for the NRC to grant an exemption from licensing to US Ecology for the USEI RCRA Subtitle C hazardous and low-activity radioactive waste facility, located near Grand View, Idaho, to receive and dispose of approximately 7,640 cubic meters (270,000 cubic feet) of low-activity radioactive wastes, consisting of bulk debris and materials from the demolition of buildings on the SLC site in Bloomsburg, Pennsylvania. If the NRC exemption is granted, the waste could be transported from the SLC site for disposal at the USEI facility. The US Ecology submittal package contains a letter report prepared by the USACE (USACE Letter Report, US Ecology, 2013, Enclosure 1), that presents information on the SLC site history and cleanup, the materials for disposal, and the USEI facility. The USACE Letter Report also includes a dose assessment for the proposed waste transport and disposal operations, which is discussed in the environmental impacts section later in this EA. Information on the SLC site and the remedial action is also included in the USEPA's Record of Decision (ROD) for the SLC Superfund Site (USEPA, 2010). The NRC staff reviewed and evaluated the USACE Letter Report and the ROD, and descriptive material presented below relevant to the proposed action is based largely on information from those documents.

Cleanup of the SLC Superfund Site is being addressed in three separate operable units (OUs)--buildings and debris (OU1), groundwater (OU2), and soils, sediments and surface waters (OU3). The exemption being considered in this EA relates to waste material for disposal associated with OU1. This waste includes building materials from the planned demolition of 13 structures (10 buildings, two water tanks, and an aboveground silo) at the site. Radionuclides present in this material originated from the production of luminous materials and other

commercial products and are expected to be primarily surface and volumetric contaminants on walls, ceilings, floors, and other equipment. The waste will also include debris and materials associated with or contained within the buildings, such as furniture, ductwork, lighting, wiring, process equipment, metal sheet, and some asbestos-containing material in the form of roofing, floor tile and siding. Specific radionuclides expected in the waste include Actinium-227, Americium-241, Cesium-137, Cobalt-60, Lead-210, Neptunium-237, Nickel-63, Radium-226, Strontium-90, and Tritium. The USACE Letter Report stated that radionuclide concentrations are not expected to exceed any USEI waste acceptance criteria (WAC), and any material identified that could cause a shipment to exceed the USEI WAC will be segregated and disposed at an appropriately licensed LLRW disposal facility.

According to the USACE Letter Report, the OU1 remedial action is not expected to generate RCRA hazardous wastes. In the unlikely event that small quantities of hazardous wastes could be generated, the USACE Letter Report states they will be segregated and initially separated from the main building debris for classification and radiological assessment. The USACE Letter Report also states that hazardous waste materials found to contain radiological contaminants will be treated (by micro- and/or macro-encapsulation) and disposed at USEI in accordance with the RCRA permit and WAC. If organic compounds are found to be present that require treatment, the USACE Letter Report states that appropriate methods will be used to treat the organics prior to any stabilization for disposal.

The USACE Letter Report discusses two methods for transporting the waste material from the SLC site to USEI, as a means of providing flexibility during the implementation of the transportation plan. Under Method 1, the material would be transported from the SLC site in intermodal containers via trucks to a facility licensed to transfer radioactive materials from trucks to rail gondola cars for transport to USEI. Under Method 2, the material would be packaged in super sacs (large debris bags) within roll-off containers for transport via trucks to a rail siding

where the super sacs would be loaded into rail gondola cars. Upon arrival at USEI, facility workers would unload and take possession of the material for transport to and disposal in the operating waste disposal cell.

The USEI site comprises an approximately 65-hectare (160-acre) hazardous waste treatment, storage and disposal facility. The facility is permitted under Subtitle C of RCRA and under the Toxic Substances Control Act (TSCA) to treat and dispose of RCRA and TSCA wastes, as well as a wide range of low-activity radioactive wastes and other wastes. The operating disposal area includes two active landfill disposal cells and four surface impoundment disposal units. The site is located in the semiarid Owyhee Desert where there is limited precipitation. The site's arid climate, deep groundwater, and favorable soil and geologic conditions serve to promote waste isolation. The USEI RCRA disposal facility is required by permit to perform routine environmental monitoring and training of personnel, and implement and maintain RCRA design, engineering and administrative controls to ensure the protection of workers, members of the public, and the environment. Radiological protection at USEI is controlled through the implementation of USEI's *Radiological Health and Safety Manual*.

Further, the OSR (40 CFR 300.440), discussed earlier, establishes criteria and procedures for determining whether facilities are acceptable for the receipt of CERCLA wastes from response actions authorized or funded under CERCLA. The OSR establishes compliance and release criteria, and a process for determining whether facilities are acceptable based on those criteria. The OSR also establishes procedures for notification of unacceptability, reconsideration of unacceptability determinations, and re-evaluation of unacceptability determinations (USEPA, 2013). According to the USACE Letter Report, the USEI disposal facility routinely receives hazardous and radioactive wastes from CERCLA facilities; USEPA Region 10 routinely performs determinations of USEI's compliance with the OSR; and USEI was in compliance with the OSR as of the writing of the USACE Letter Report. The USACE Letter

Report also stated that prior to shipping any SLC waste to USEI, USEPA Region 10 will be contacted to ensure USEI is in compliance with the OSR; and USEI's continued compliance will be confirmed every 60 days thereafter if shipping activities are planned or in progress.

The Need for the Proposed Action

The granting of the exemption from licensing by the NRC is needed to allow the transport of the SLC waste for disposal at the USEI facility. The subject waste is from a Superfund site undergoing cleanup under a CERCLA response action, and consists of building debris and materials containing radionuclides present at low activity levels. The receipt and disposition of these materials at an appropriate offsite disposal facility is required pursuant to the OSR (40 CFR 300.440). Disposal of the waste at a RCRA hazardous waste landfill permitted to accept low-activity radioactive wastes, such as the USEI facility, would be in compliance with the OSR. However, as a RCRA facility, USEI is permitted and regulated by the IDEQ, not the NRC; and Idaho regulations and USEI's RCRA permit require appropriate NRC exemptions and approval for the acceptance and disposal of the low-activity waste material.

Environmental Impacts of the Proposed Action

The information on environmental impacts presented below is focused on those environmental resource areas for which the NRC staff understands that potential impacts of the proposed action could occur. Both potential radiological and non-radiological impacts were considered. If the NRC grants the exemption, the low-activity SLC waste would be disposed of at the USEI site. The USEI site includes an existing, operating disposal facility, and disposition of the low-activity SLC waste would occur in an existing waste disposal cell. The NRC staff concludes that USEI facility's RCRA permit requirements, site and facility design features, and

engineering and administrative controls ensure the protection of workers, members of the public, and the environment.

The USACE Letter Report in the USEI submittal package includes a radiological dose assessment for the transport and disposal of the SLC waste materials. The analysis must show that the radiological doses arising from the proposed action will be as low as reasonably achievable (ALARA) and within the 10 CFR Part 20 dose limits. The dose assessment evaluates worker doses associated with the two methods discussed earlier for transporting the material to USEI. The USACE Letter Report also considered doses for the onsite workers at the USEI facility, and landfill post closure doses were evaluated for members of the general public. The analysis in the USACE Letter Report used Microshield and RESRAD Version 6.5, as appropriate, to calculate the doses for each of the scenarios.

NRC staff reviewed and evaluated the USACE dose assessment and performed independent dose calculations, and found the dose assessment to be acceptable under 10 CFR Part 20. The USACE Letter Report dose assessment uses a conservative source term and site-specific parameter values, and assessed a range of possible exposure scenarios. Estimated doses to workers associated with both the transport and disposal processes were all below 0.01 millisievert/year (mSv/yr) (1 millirem/year (mrem/yr)). Regardless of the radionuclide concentrations used, the post-closure dose to a member of the public was also below 0.01 mSv/yr (1 mrem/yr). By comparison, the 10 CFR Part 20 dose limits, as total effective dose equivalents, are 50 mSv/yr (5000 mrem/yr) to workers (10 CFR 20.1201(a)(1)(i)) and 1 mSv/yr (100 mrem/yr) to individual members of the public (10 CFR 20.1301(a)(1)). Also, based on the results of these analyses, the staff concludes that the proposed disposal action will not significantly add to the annual cumulative dose from all exempted and naturally occurring radioactive material received at the USEI disposal facility.

As a result of the dose assessment and other considerations, the staff concludes that the exemption of the USEI site from NRC licensing requirements will not significantly increase the probability or consequences 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.

Environmental Impacts of the Alternative to the Proposed Action

The staff considered the no-action alternative as an alternative to the proposed action. Under the no-action alternative, the NRC would deny the present US Ecology exemption request and the SLC waste could not be received and disposed at the USEI RCRA disposal facility. However, the staff assumes that the subject SLC waste would still be generated under the USEPA's CERCLA response action; and in order for the OU1 portion of the CERCLA response action to be in compliance with the OSR, the SLC waste would still need to be transported and disposed at another acceptable offsite facility. This facility could be another appropriately permitted disposal site, such as another RCRA hazardous disposal facility, a municipal landfill, or a licensed LLRW disposal site. Under these circumstances, the potential environmental impacts of the proposed action and the no-action alternative at the disposal facilities would be similar, although denial of the US Ecology request by the NRC may result in delayed demolition of the structures at the SLC site or delayed offsite shipment of the demolition wastes, potentially resulting in increased exposure of site workers and members of the public to the low-activity materials. Also, disposal of the material at a LLRW disposal facility would be at higher cost than at a RCRA hazardous waste landfill or municipal landfill permitted to accept low-activity radioactive wastes but with little or no commensurate reduction of risk, and disposal in a RCRA hazardous waste or municipal landfill would conserve LLRW disposal capacity for higher activity wastes.

Agencies and Persons Consulted

The NRC provided a draft of this EA to the IDEQ for review on October 9, 2013. The IDEQ had no comments, but stated that waste shipments to the USEI site must comply with the Waste Acceptance Criteria defined by USEI permit (Meier, 2013). The proposed action to grant the exemption from licensing would result in disposal of low-activity radioactive waste in an existing disposal cell at an operating RCRA landfill permitted to accept and dispose of such waste. Thus, prior major earth disturbances to create the waste disposal cell and other site facilities, and ongoing site operations associated with waste handling and disposal would preclude the existence of listed threatened or endangered species or critical habitat and of historic properties. As such, the NRC staff has determined that the proposed action is of a procedural nature, and no consultations are required under Section 7 of the Endangered Species Act and Section 106 of the National Historic Preservation Act.

Conclusion

The NRC staff has concluded that the proposed Federal action, for the NRC to grant an exemption from licensing for the USEI RCRA Subtitle C hazardous and low-activity radioactive waste facility to receive and dispose of specified low-activity radioactive wastes from the SLC Superfund Site, will not significantly impact the quality of the human environment, and that the proposed action is the preferred alternative. The USEI site includes an existing, operating disposal facility, where the low-activity SLC waste would be disposed of pursuant to a RCRA permit in an existing waste disposal cell. USEI permit requirements, site and facility design features, and engineering and administrative controls ensure the protection of workers, members of the public, and the environment. Further, estimated radiological doses associated with transport and disposal to workers and members of the public of the waste would be below 0.01 mSv/yr (1 mrem/yr), which is orders of magnitude below the 10 CFR Part 20 dose limits of

50 mSv/yr (5000 mrem/yr) to workers and 1 mSv/yr (100 mrem/yr) to individual members of the public. Also, the staff concludes that the proposed disposal action will not significantly add to the annual cumulative dose from all exempted and naturally occurring radioactive material received at the USEI disposal facility.

Sources Used

(Meier, 2013) Meier, D., Idaho Department of Environmental Quality. Email to Stephen Lemont and Maurice Heath: "RE: Request for Comment: Draft Environmental Assessment for Authorization of Disposal of Low-Activity Radioactive Waste at US Ecology Idaho RCRA Disposal Facility." Boise, ID. October 16. ADAMS Accession Number ML13294A455.

(US Ecology, 2013) US Ecology, Inc. "Request for Exemption under 10CFR 30.11 for Alternate Disposal of Wastes from the Safety Light Corporation Site, Bloomsburg, PA under 10CFR20.2002." Lakepointe Centre I, 300 East Mallard Dr. Suite 300, Boise, ID. July 9. ADAMS Accession Number ML13198A017.

(USEPA, 2010) U.S. Environmental Protection Agency Region III. "EPA Superfund Program Record of Decision, Safety Light Corporation Superfund Site, Bloomsburg, Pennsylvania." Philadelphia, PA. August.

(http://www.epa.gov/reg3hwmd/npl/PAD987295276/rod/SLC_OU1_ROD_090210.pdf)

Accessed October 4, 2013.

(USEPA, 2013) U.S. Environmental Protection Agency. "Off-Site Rule." Washington, DC. March 15. (<http://www.epa.gov/epawaste/hazard/wastetypes/wasteid/offsite/index.htm>)

Accessed October 4, 2013.