[7590-01-P]

U.S. NUCLEAR REGULATORY COMMISSION

DOCKET NO. 40-09022

ENVIRONMENTAL ASSESSMENT AND FINDING OF NO SIGNIFICANT IMPACT RELATED TO ISSUANCE OF AMENDMENT NO. 4 TO MATERIALS LICENSE NO. SUC-1565, THE SC HOLDINGS, INC., BAY CITY, MI SITE (TAC #L60510)

AGENCY: U.S. Nuclear Regulatory Commission.

ACTION: Environmental Assessment and Finding of No Significant Impact.

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SUPPLEMENTARY INFORMATION:

I. Introduction

NRC is considering the issuance of a license amendment to the S.C. Holdings, Inc. Material License, No. SUC-1565. The amendment would incorporate the Decommissioning Plan (DP), the Quality Assurance Project Plan for Decommissioning Activities, and the Health and Safety Plan for Site Decommissioning Activities into Materials License SUC-1565.

NRC has prepared an Environmental Assessment (EA) in support of this amendment request in accordance with the requirements of 10 CFR Part 51. Based on the EA, NRC concluded that a Finding of No Significant Impact (FONSI) is appropriate.

II. Environmental Assessment

Background

The S.C. Holdings site is a part of the former (now closed) industrial waste disposal area locally known as the Hartley & Hartley Landfill. The landfill is a former waste disposal facility that accepted municipal and industrial waste from the 1950s until 1978. The facility is estimated to have received 18,000 barrels of spent solvents, oils, and other liquid and solid wastes for disposal during the 1960's and early 1970's. During the period from 1970 to 1972, foundry slag containing radioactive thorium (Th) and progeny was disposed of in the Northwest Landfill, and in two small slag piles outside of the Northwest Landfill (Slag Piles A and B). There are no records of Th-bearing slag outside the Northwest Landfill and the two slag piles. In 1995, the NRC issued Source Materials License No. SUC-1565 to SCA Services, Inc., for storage of radioactive Th and uranium (U) in slag/waste at the Hartley & Hartley Landfill site. The current owner of the property is S.C. Holdings, Inc., successor by merger to SCA Services, Inc.

The Hartley & Hartley Landfill industrial disposal site has been subdivided into two separate sites: the Michigan Department of Natural Resources (MDNR) site and the S.C. Holdings, Inc. site. In a formal land exchange concluded in 1973, the Hartleys conveyed land to the State of Michigan that included approximately three acres where waste disposal had previously occurred in return for lands bordering their industrial waste disposal area. The 3-acre portion, now known as the MDNR site, is part of the State of Michigan's Tobico Marsh State Game Area. The remaining property comprises what is known as the S. C. Holdings, Inc. site.

Post-closure activities at the site included construction of slurry walls, subsurface clay dikes, and compacted clay covers over the Northwest and East Landfills to contain the chemical

wastes and preclude the potential migration of chemical (non-radioactive) contaminants beyond those areas already impacted by the disposal.

Wells and piping for a leachate collection and treatment system (LCTS) will be installed within the Northwest Landfill. Wells and piping have already been installed in the East Landfill and in the adjacent MDNR waste cell. After piping is installed in the Northwest Landfill, the LCTS will collect liquid (leachate) from the MDNR cell, and the Northwest and East Landfills and pump the leachate to a single collection tank located adjacent to the East Landfill. The LCTS was designed to withdraw liquid contaminants (leachate) from the waste cell and landfills to prevent hydrostatic pressure in the cell from building to a point that chemical contaminants would leak out.

On November 26, 2003, S.C. Holdings, Inc. submitted a Decommissioning Plan (DP) for the site. The DP outlined decommissioning activities including excavating and relocating of Slag Piles A and B to the Northwest Landfill, installing LCTS wells and piping in the Northwest Landfill, and upgrading the existing cover over the Northwest Landfill. Following these activities, the site would be released for unrestricted use, as specified in 10 CFR 20.1402, and the radioactive materials license would be terminated. On October 14, 2004, and October 28, 2005, the NRC staff transmitted letters to S.C. Holdings, Inc. requesting additional information (RAI) related to the DP. In letters dated May 9, 2005, and December 8, 2005, S.C. Holdings, Inc. responded to the RAIs.

The Proposed Action

The proposed action is to amend Source Materials License No. SUC-1565 to incorporate the DP, the Quality Assurance Plan, and the Health and Safety Plan into the license. The DP

proposes excavating and relocating Slag Piles A and B to the Northwest Landfill, installing LCTS wells and piping in the Northwest Landfill, and upgrading the existing cover over Northwest Landfill. With regard to the radiological materials, the site will be released for unrestricted use in accordance with 10 CFR 20.1402.

Need for the Proposed Action

The proposed action is to amend Source Materials License No. SUC-1565 to authorize activities on-site that would lead to the release of the S.C. Holdings, Inc. site located at 2370 South Two Mile Road, Bay City, Michigan, for unrestricted use. The licensee's proposed action of relocating the Th-bearing slag from Slag Piles A and B into the Northwest Landfill and leaving all of the radioactive material in place within the Landfill is one option that would conform with the NRC regulation that the dose to the average member of the critical group is below the requirements in 10 CFR Part 20 Subpart E for license termination and unrestricted release. The licensee needs the license amendment incorporating the DP, the Quality Assurance Project Plan, and the Health and Safety Plan into the license, to be able to decommission the site. The NRC is fulfilling its responsibilities under the Atomic Energy Act, as amended, to make a decision on a proposed license amendment for incorporation of a DP into the license and to ensure adequate protection of public health and safety and the environment.

Alternatives to the Proposed Action

S.C. Holdings, Inc. considered four alternatives to the proposed decommissioning plan: 1) completely removing Slag Piles A and B and the contents of the East and Northwest Landfills (both radiological and chemical materials); 2) removing only the radiological material from the Piles and the Northwest Landfill; 3) relocating Slag Piles A and B into the Northwest Landfill, installing a LCTS in the Northwest and East Landfills, and enhancing the Northwest Landfill

Cap; and 4) taking no remedial action and retaining the site license (“No Action Alternative”). The licensee’s preferred alternative is Alternative No. 3, which is described, in detail, in the DP.

The S.C. Holdings, Inc. site contains both radiological and chemical materials. The chemical materials are regulated by the State of Michigan Department of Environmental Quality (MDEQ) under Part 201 of Michigan regulations. The chemical materials are contained within the East and Northwest Landfills both of which have slurry walls and caps. The radiological materials are confined to the Northwest Landfill and Slag Piles A and B. The Slag Piles are covered with clay fill.

Alternatives 1 and 2 would cause the contents of the waste cell to be open to the environment and disturbed, potentially leading to release of those contents into the surrounding environment. Specifically, excavation of the landfills would expose workers and visitors to hazardous materials within the cell. Hazardous materials could be released into the surrounding environment via effluents, airborne particles and/or gases. Shipping the materials off-site for disposal could also expose workers and others to the materials before, during, and after shipment to a waste disposal site. The environmental impact presented by these two alternatives could potentially put workers and the surrounding environment at risk, and therefore, are not environmentally sound options.

Alternative 3 is the preferred alternative, because the alternative has little, if any, impact on the environment. Once Piles A and B have been relocated, all radiological materials will be confined to the Northwest Landfill. Based on an independent dose assessment, the NRC staff concluded that, if the radiological material is consolidated into the Northwest Landfill and the

LCTS is left in place, as described in the DP, then no additional actions would be needed at the S.C. Holdings site for it to be released for unrestricted use per 10 CFR 20.1402.

The impacts from the “No Action Alternative” (Alternative 4) are similar to the preferred alternative, in that, they would present little if any risk to workers and/or the surrounding environment. However, Alternative 4 is not acceptable, because retaining a license would impose an unnecessary regulatory burden on S.C. Holding, Inc. Since no additional actions would be needed at the site following the proposed actions, described in the DP (Alternative 3), for it to be released for unrestricted use per 10 CFR 20.1402, there would no longer be any need for requiring that the licensee maintain site security and/or maintain the site’s materials license.

Environmental Impacts of the Proposed Action

The affected environment at the Site includes the Northwest Landfill bounded by a slurry wall covered with a cap, and two piles of slag (Slag Piles A and B) located adjacent to the Northwest Landfill. The slag in Slag Piles A and B will be excavated and relocated into the Northwest Landfill through a small hole that will be cut into the cap. The volume of material in Piles A and B is small in comparison to the volume of the Landfill, therefore the physical placement of the material into the Landfill will have no significant adverse effect on the materials already located in the Northwest Landfill.

The residual radioactivity at the site consists of foundry waste containing U/Th slag in the Northwest Landfill and two small areas of U/Th slag (Slag Piles A and B) located just outside the slurry wall surrounding the Northwest Landfill.

Additional radiological contamination could result from the primary source term at the site through the operation of the existing Leachate Collection and Treatment System (LCTS). The LCTS could result in the leakage of thorium and its daughter products on the cap surface. Also, the storage of thorium and its daughter products in an above ground leachate tank associated with the LCTS could result in gamma radiation exposure to site workers. Radioactivity associated with the LCTS and the leachate tank would originate from groundwater in contact with the thorium-bearing slag in the waste cell.

The non-radiological contamination at this site is contained within both the Northwest and East Landfills. The non-radiological contamination includes organic chemicals which are regulated by the MDEQ, not by the NRC. The non-radiological contamination will be present after NRC terminates the license. Approval of the proposed action does not absolve the licensee of any other responsibilities it may have under Federal, State, or local statutes or regulations regarding the non-radiological contamination.

Much of the immediate area, except for the adjacent Bangor Township Landfill, is marsh land of the Tobico Marsh State Game Area. Also adjacent to the site is a separate facility known as MDNR Tobico Marsh State Game Area Site, previously licensed by the NRC. There are several ponds located on the site that had been excavated for sand as part of a quarry operation prior to landfilling or had been excavated during site activities for cell construction or cover material. The shallow groundwater on-site is non-potable.

The environmental impacts of the licensee's requested action were evaluated by reviewing the results of S.C. Holdings, Inc. dose assessments for the Northwest Landfill and the slag piles. The licensee's assessments assume that the radiological contaminants remain within the

Northwest Landfill, and surface soil of the excavated slag piles does not exceed the derived concentration guideline levels (DCGLs) of the DP. The licensee used the computer code, RESRAD Version 6.2, to demonstrate that doses from residual radioactivity do not exceed the regulatory limit (25 millirem (mrem)/yr). The licensee used the model to calculate the radiation dose expected to be received by a hypothetical industrial worker beginning at the time of site closure and extending into the future (i.e., 1000 years). The NRC staff performed independent analyses of the licensee's dose assessments and NRC's results were in agreement with S.C. Holdings, Inc. methods and procedures.

For the residual radioactivity in the Northwest Landfill, the licensee assumed U and Th concentrations as measured by Oak Ridge Associated University (ORAU) in 1985. ORAU determined that the concentrations of the individual radionuclides present in the Northwest Landfill were: (1) Lead-210 - 0.61pCi/g, (2) Radium (Ra)-226 - 0.61pCi/g, (3) Ra-228 - 18.67pCi/g, (4) Th-228 - 17.96pCi/g, (5) Th-230 - 2.54pCi/g, (6) Th-232 - 18.67pCi/g, and (7) U-234 - 2.54pCi/g. The licensee's expected dose from to the material in the Northwest Landfill was 5 mrem/yr and no DCGLs were reported for the Landfill.

For the residual soil surface radioactivity of the excavated slag piles, the licensee derived DCGLs. The licensee did not take into account exposure from material in the Northwest Landfill in deriving the DCGLs for the remediated slag piles, because the dose contribution from the Northwest Landfill at the slag piles locations would not be distinquishable from background. These DCGLs reflect the concentration of radionuclides that may be present outside of the Northwest Landfill and result in a maximum dose of less than 25 mrem per year over background. The presence of these isotopes will be verified after the remediation is completed and the final status survey is implemented.

Micro Shield, Version 5.01, was used to determine the dose from exposure to the leachate tank. S.C. Holdings assumed that the 15,000-gallon leachate storage tank that is located on the site is used to collect leachate for the Northwest Landfill. The modeled scenario assumed that tank is always completely full and the presence of thorium radioactivity in slag at the specific activity limit. The exposure scenario involves a worker who hypothetically stands 1 meter from the leachate storage tank. For leachate leakage from the LCTS, the licensee used an analysis performed by MDNR. The annual dose for the potential leaking of the LCTS determined by MDNR was less than 1 mrem/yr. S.C. Holding's analysis for the gamma radiation exposure for a worker within close proximity to the leachate tank was less than 2 mrem/yr.

The NRC staff evaluated the potential radiological exposure to offsite receptors resulting from groundwater seepage through the slurry walls. This potential radiological exposure is very low due to the following reasons:

1. Any seepage of radiological contaminated groundwater through the slurry walls will be dispersed and diluted as the groundwater slowly travels to Saginaw Bay of Lake Huron.
2. The travel time for groundwater to reach Saginaw Bay from the site is long (several thousand years) because of the distance (2.24 kilometers) between the two locations and because of the low hydraulic gradient (0.0002 ft/ft) of the water table.
3. The solubility of Th in groundwater is very low.
4. The concentration of the radiological contaminated groundwater will become highly diluted if it is discharged into the much larger surface water volume of Saginaw Bay.
5. There are no receptors along the groundwater pathway between the site and Saginaw Bay, and none are anticipated, in the future.

The NRC staff reviewed the potential Environmental Impacts of the licensee's requested action to relocate the Slag Piles into the Northwest Landfill and leave the Northwest Landfill "as is" and release it for unrestricted use. Based on the staff's review of the DP, the staff determined that the radiological environmental impacts associated with the licensee's proposed action are bounded by the impacts evaluated in NUREG-1496, "Generic Environmental Impact Statement of Rulemaking on Radiological Criteria for License Termination of NRC-Licensed Nuclear Facilities."

Agencies and Persons Consulted

This EA was prepared entirely by the NRC staff. The Michigan State Historic Preservation Office and the U.S. Fish and Wildlife Service were contacted regarding this action and neither organization had concerns regarding this licensing action. No remedial actions are planned for the site. Therefore, the release of the S.C. Holdings, Inc. site for unrestricted use would not affect historical or cultural resources, nor will it affect threatened or endangered species. No other sources of information were used beyond those referenced in this EA.

The NRC provided a draft of this EA to the MDEQ for its review (ADAMS Accession No. ML052910524). The MDEQ agreed with the conclusions in the EA.

Conclusions and Finding of No Significant Impact

Based on its review, the NRC staff concludes that the proposed action complies with 10 CFR 20, Subpart E. NRC has prepared this EA in support of the proposed license amendment to approve the DP. On the basis of the EA, NRC has concluded that the environmental impacts from the proposed action are expected to be insignificant and has determined that preparation of an Environmental Impact Statement (EIS) is not needed for the proposed action.

Sources Used

1. NRC License No. SUC-1565.
2. S.C. Holdings, Inc., Letter dated November 26, 2003, "Submittal of the Decommissioning Plan SCA Hartley & Hartley Landfill Site, Kawkawlin Township, Michigan NRC Materials License No. SUC-1565, Docket No. 40-9022." [ADAMS Accession No. ML033450337555]
3. NRC, Letter dated October 27, 2005, "Draft Environmental assessment Related to the Amending of S.C. Holdings, Inc., Bay City, Michigan, Site License." [ADAMS Accession No. ML052910524]
4. NRC, Letter dated October 14, 2004, "The Nuclear Regulatory Commission's Request for Additional Information (RAI) with Regard to the Decommissioning Plan 1, for the S.C. Holdings, Inc. Hartley and Hartley Landfill Site, Kawkawlin, Michigan." [ADAMS Accession No. ML042670354]
5. S.C. Holdings, Inc., Letter dated May 9, 2005, "Response to RAI SCA Hartley & Hartley Landfill Site, Kawkawlin Township, Michigan NRC Source License SUC-1565." [ADAMS Accession No. ML051380221]
6. S.C. Holdings, Inc., Letter dated December 8, 2005, "Response to Second Request for Additional Information SCA Hartley & Hartley Landfill Site, Kawkawlin Township, Michigan NRC Source License SUC-1565." [ADAMS Accession No. ML053480161]
7. S.C. Holdings, Inc., Letter dated September 15, 2005, "Submittal of the Quality Assurance Project Plan and the Health and Safety Plan for Site Decommissioning SCA Hartley & Hartley Landfill Site, Kawkawlin Township, Michigan NRC Source License SUC-1565." [ADAMS Accession No. ML052640183]
8. NUREG-1748, Environmental Review Guidance for Licensing Actions Associated with NMSS Programs, August 2003.

9. NUREG-1757, Volume 1, Rev 1, Consolidated NMSS Decommissioning Guidance, Decommissioning Process for Materials Licensees, Final Report, September 2003.

10 Title 10 Code of Federal Regulations, Part 20, Subpart E, “Radiological Criteria for License Termination.”

11. Title 10, Code of Federal Regulations, Part 51, “Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions.”

12. NUREG-1496, Generic Environmental Impact Statement of Rulemaking on Radiological Criteria for License Termination of NRC-Licensed Nuclear Facilities, July 1997.

13. MDNR, Response to RAI - Tobico Marsh State Game Area Site and Submission of Additional Information Relative to the Decommissioning Plan, August 27, 2004.

III. Finding of No Significant Impact

Based upon the analysis in this EA, NRC staff has concluded that there will be no significant environmental impacts from the proposed action and has determined not to prepare an Environmental Impact Statement for the proposed action.

IV. Further Information

Documents related to this action, including the application for amendment and supporting documentation, are available electronically at NRC's Electronic Reading Room at http://www.nrc.gov/reading-rm/adams.html. From this site, you can access NRC's ADAMS, which provides text and image files of NRC's public documents. The ADAMS accession numbers for the documents related to this notice are: ML033430555 for the November 26, 2003, letter submitting the Decommissioning Project Plan; ML052640183 for the September 15, 2005, letter submitting the Quality Assurance Plan and the Health and Safety

Plan, and ML051380221 and ML1053480161 for the May 9, 2005, and December 8, 2005, letters responding to NRC requests for additional information. If you do not have access to ADAMS or if there are problems accessing the documents located in ADAMS, contact NRC's Public Document Room (PDR) Reference staff at 1-800-397-4209, 301-415-4737, or by email to pdr@nrc.gov.

These documents may also be viewed electronically on the public computers located at NRC's PDR, O-1F21, One White Flint North, 11555 Rockville Pike, Rockville, MD 20852. The PDR reproduction contractor will copy documents for a fee.

Dated at Rockville, Maryland this 20th day of February 2006.

For The Nuclear Regulatory Commission,

/RA/

Daniel M. Gillen, Deputy Director
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Division of Waste Management
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