UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
1600 EAST LAMAR BOULEVARD
ARLINGTON, TEXAS 76011-4511

January 24, 2020

MEMORANDUM TO: Docket File 030-06981

FROM: Heather J. Gepford, PhD, CHP Chief */RA/*
Materials Licensing and Decommissioning Branch
Division of Nuclear Materials Safety

SUBJECT: REVIEW OF LICENSE AMENDMENT REQUEST FROM U.S. ENVIRONMENTAL PROTECTION AGENCY

By application dated October 17, 2019 (Agencywide Documents Access and Management System [ADAMS] Accession No. ML19365A045), the U.S. Environmental Protection Agency (EPA, the licensee) requested U.S. Nuclear Regulatory Commission (NRC) approval of an amendment to Materials License No. 27-05861-02. The licensee requested removal of a warehouse located on Sunrise Avenue in Las Vegas, Nevada, from the license. The warehouse was previously used for receipt and shipment of radioactive materials.

The NRC staff recommends approval of the license amendment request which will release the warehouse for unrestricted use. As described in the enclosed technical evaluation, the licensee conducted a final status survey that was designed in accordance with NRC guidance. The results of the survey demonstrated that residual activity levels were less than the NRC's screening criteria. The NRC conducted a confirmatory survey to confirm the results of the licensee's final status survey. The NRC staff recommends that License Condition 10.C be deleted to remove EPA's Sunrise Avenue warehouse from the license.

Docket No.: 030-06981
License No.: 27-05861-02

Enclosure: Technical Evaluation

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817-200-1234

Technical Evaluation for License Amendment Request for the U.S. Environmental Protection Agency, Las Vegas, Nevada

The EPA possesses radioactive material under a Type A research and development broad scope license at its facilities in Las Vegas, Nevada. By letter dated January 11, 2018 (ADAMS Accession No. ML18031A982, not publicly available), the licensee notified the NRC that it planned to request the removal of a warehouse located at 3201Sunrise Avenue in Las Vegas from the license. The NRC acknowledged the licensee's notification by letter dated February 5, 2018 (ADAMS Accession No. ML18036A620).

By application dated October 17, 2019 (ADAMS Accession No. ML19365A045) and received by the NRC on November 13, 2019, the licensee requested the release of the Sunrise Avenue warehouse from the license. The warehouse was previously used for shipping and receiving of radioactive material; although, the warehouse had not been used for these activities in the last few years. At the time of the November 2019 NRC inspection, documented in Inspection Report 030-06981/2019-002, the warehouse was still in use as a storage facility, but the EPA was actively working to clear out the warehouse.

The licensee's October 2019 application included a summary investigation (characterization survey) report for the warehouse. The report provided the results of a radiological characterization survey that was conducted in June 2017. According to this report, the 300-square meter warehouse was classified as a Class 3 area using the guidance provided in NUREG-1575, Revision 1, "Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM)." The radionuclides of concern included various alpha and beta emitting radionuclides.

The licensee chose to use derived concentration guideline levels (DCGLs) based on the most limiting alpha and beta emitting radionuclides (americium-241 and lead-210, respectively) from the licensee's list of radionuclides of concern. The concentration limits for the two DCGLs were obtained from Table 5.19 of NUREG/CR-5512, Vol. 3, "Residual Radioactive Contamination From Decommissioning: Parameter Analysis." The DCGL for alpha emitters was 27 disintegrations per minute per 100 square centimeters (dpm/100 cm^2), the screening value for americium-241, while the DCGL for beta emitters was 550 dpm/100 cm^2, the screening value for lead-210. These DCGLs do not include background, meaning that the release limits are above background values.

The licensee's contractor conducted radiological scan surveys, direct measurements, swipe sampling, and media sampling. The Visual Sampling Plan computer code was used to calculate the number of direct measurement samples required to be collected. The licensee's contractor concentrated its surveys in areas where radioactive material may have been received, shipped, or stored with less emphasis on other areas of the warehouse. The contractor recorded direct measurements for total (fixed and removable) contamination and collected swipe samples for removable contamination at 14 random locations within the warehouse. The contractor also collected media (concrete) samples at each location.

The scan surveys were conducted, in part, to identify areas of elevated radioactivity for additional investigation. The scan survey coverage, estimated to be about 30 percent of the surface area, exceeded MARSSIM requirements for Class 3 areas. No areas were identified for additional investigation. In addition, no direct measurement result exceeded the associated alpha and beta DCGLs, and the results were comparable to background measurements. The

swipe sample results were at or less than 10 percent of the respective DCGLs and were comparable to background measurements. Although the licensee did not establish DCGLs for the media samples, these sample results were comparable to background sample results.

Since the characterization survey was designed using MARSSIM guidance, the characterization survey data was adopted by the licensee as final status survey data to demonstrate that the warehouse met the criteria for release from the license. The inspectors reviewed the characterization survey report and concluded that the survey design met MARSSIM guidance.

The NRC conducted a confirmatory survey of the warehouse in November 2019. Details about the confirmatory survey are provided in NRC Inspection Report 030-06981/2019-002. A confirmatory survey is a survey conducted to verify the results of the licensee's final status survey. The confirmatory survey included ambient gamma radiation measurements, limited surface scans, and static measurements of surfaces for total (fixed and removable) radioactivity. The inspectors did not collect samples outside of the warehouse, e.g. environmental samples, because there was no record of unsealed or unpackaged radioactive material being used within or outside of the warehouse.

The inspectors measured the ambient gamma radiation levels within the warehouse. These measurements were conducted primarily to locate areas of elevated radioactive contamination for fixed point surface measurements. The inspectors used the licensee's action level of three times background as the acceptance criteria. A background measurement was taken outside of the warehouse for comparison to measurements within the warehouse. No area within the warehouse exceeded three times background, and most areas were at or below background measurements.

The inspectors collected 40 fixed point surface measurements in various random locations within the warehouse. Four of the 40 measurements exceeded the respective DCGLs, although the average surface measurements for both alpha and beta activity were well below the respective DCGLs. The highest alpha measurement was 63 dpm/100 cm^2 with a DCGL of 27 dpm/100 cm^2. The highest beta measurement was 1279 dpm/100 cm^2 with a DCGL of 550 dpm/100 cm^2. These exceedances were attributed to naturally occurring radioactive material in the surface material and not licensed material.

In summary, the licensee's contractor designed and implemented a survey that met MARSSIM guidance. The final status survey results were below the release criteria. The NRC conducted a confirmatory survey which confirmed the results of the licensee's final status survey. Thus, the Sunrise Avenue warehouse meets the NRC's criteria for release for unrestricted use.

REVIEW OF LICENSE AMENDMENT REQUEST FROM U.S. ENVIRONMENTAL PROTECTION AGENCY, LAS VEGAS, NEVADA - DATED JANUARY 24, 2020

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ADAMS ACCESSION NUMBER: ML20023B267

■ SUNSI Review By: RJE | ADAMS: ■ Yes ☐ No | ☐ Non-Publicly Available ■ Publicly Available | ■ Non-Sensitive ☐ Sensitive | Keyword: NRC-002

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