SECY-99-213

August 23, 1999

FOR: The Commissioners

FROM: William D. Travers /s/
Executive Director for Operations

SUBJECT: REMOVAL OF ELKEM METALS COMPANY'S SITE FROM THE SITE DECOMMISSIONING MANAGEMENT PLAN

PURPOSE:

To inform the Commission that the decommissioning process has been completed at the Elkem Metals Company's (EMC) site located near Marietta, Ohio. The staff plans to release the site for unrestricted use and remove the site from the Site Decommissioning Management Plan (SDMP).

BACKGROUND:

For about 15 years, Union Carbide (UC) attempted to extract tantalum and columbium, which are exotic metals, at the Marietta facility. The raw material for the process was tin slag, imported from Thailand. The radioactive elements thorium and uranium also were contained in the tin slag. UC obtained a license (Former License No. SMB-933) from the Atomic Energy Commission (AEC) to manage these radioactive materials. The process was not commercially successful, and efforts ceased in early 1970.

The facility was sold to EMC in 1981. EMC continues to own and operate part of the facility for the production of chromium and manganese alloys. Adjacent to the former tantalum/columbium operating area is a separate facility that produces manganese electrodes for dry cell batteries. UC sold the battery electrode facility to Ralston Purina in 1986.

During the early 1980s, UC conducted a remedial action, at the facility, for the radioactive constituents. About 9,000 cubic meters (11,800 cubic yards) of soil were transported to Uravan, Colorado, for processing and disposal at a UC-owned facility. After a site review by its representatives, U.S. Nuclear Regulatory Commission (NRC) declared the decontamination complete and, on July 3, 1985, terminated the license. It was later determined that the NRC review overlooked Building 78 and the adjacent areas.

Some time later, an EMC employee found additional radioactive materials (equipment and soil areas) in and around Building 78, the building used for the crushing and grinding of tin slag in the licensed process. A January 1992 NRC survey of the site determined that radioactivity from the materials remaining on site exceeded Site Decommissioning Management Plan (SDMP) Cleanup Criteria, and additional clean-up would be necessary. In 1992 the site became part of the SDMP. NRC did not require licensing of the remedial activities conducted at the site.

EMC is located approximately 16 kilometers (10 miles) west of Marietta, Ohio, near the intersection of County Road 10 and State Highway 7. The site comprises a land area of approximately 1.2 hectares (3 acres) which is located in the northern portion of the facility. The area is bordered by undeveloped land to the north, the EMC Simplex Briquetting facility to the west, Baltimore and Ohio Railroad to the south, and the Eveready Battery Company to the east.

UC submitted "Project Plans for Remedial Action at Elkem Metals Company Marietta, Ohio" on December 11, 1992, and it was approved by the NRC on May 27, 1993. In the approved plan, UC committed to use the SDMP Cleanup Criteria (57 FR 13389, April 16, 1992) for release of the site. UC initiated remedial actions, on behalf of EMC, in March 1993, following the NRC approval of the UC remediation plan. Umetco Minerals Corporation, a subsidiary of UC, managed the remedial actions. In addition to the contaminated equipment and two soil areas, contamination was also identified on Building 78's roof and interior surfaces, on a large ore pad and a small pad located to the east and southeast of Building 78, in the soils in the vicinity of these pads, and in the Quonset huts adjacent to Building 78.

Building 78 is a one-story steel and concrete structure containing approximately 560 m^2 (610 yd^2) of floor space. The process equipment formerly housed in the building was dismantled during remediation. Two areas of residual soil contamination were identified, one immediately adjacent to the north side and extending to the east along a railroad spur, and the other approximately 80 meters (88 yds) northwest of Building 78. Several areas around the two concrete pads also had residual contamination. The concrete pads have areas of approximately 1,400 m^2 (1,675 yd^2) and 140 m^2 (167 yd^2) for the large ore pad and small pad, respectively. The purpose of the ore pad was to store ores to be processed at the site. The surface of the pad was surveyed for thorium and uranium. Samples of materials were collected from cracks and joints of the slab and the soil beneath the pad. The Eveready property boundary extends to the west and encompasses approximately two-thirds of the large ore pad. Two Quonset huts at the site are located between and just south of the large ore pad and Building 78, with both containing approximately 360 m^2 (430 yd^2) of floor space. The huts are built with wood and asphalt-shingle walls and concrete floors.

The initial remediation was completed in December 1994. Contaminated materials were placed in steel containers and stored in Building 78. The total volume of contaminated materials was about 300 cubic meters (390 cubic yards). In 1997, arrangements were completed with the State of Colorado Department of Health for transfer of these materials to the UC-owned uranium mill in Uravan. In August 1997, all the containerized materials were shipped to Uravan.

NRC requested additional radiological surveys be performed before the release of Building 78. UC and EMC performed these radiological surveys in two phases. Phase I included the affected and unaffected outdoor areas and two Quonset huts, and Phase II addressed Building 78. These surveys are documented in "Compendium of Reports Elkem Metals Building 78 SDMP Site Marietta, Ohio" dated July 6, 1999.

As part of the confirmatory survey, NRC/Oak Ridge Institute for Science and Education (ORISE) surveyed the entire floor area of the Quonset huts, and found elevated levels of radionuclides during their survey of the south Quonset hut. UC remediated the contaminated areas, and UC performed additional radiological surveys to confirm that the Quonset huts met the unrestricted release criteria. In addition, NRC staff and ORISE conducted a series of in-process inspections to verify the EMC survey methodology and accuracy. Four in-process radiation surveys were conducted between September 1995, and October 1998. During the in-process inspections, ORISE technicians collected samples and performed total surface and soil activity measurements. The results of the NRC/ORISE confirmatory survey measurements affirmed the final survey results and are document in the NRC's Confirmatory Report, August 1999.

DISCUSSION:

The staff has completed its review of the EMC Final Survey Report. The EMC's final survey report documented the level of residual radioactivity remaining at the facility and affirmed that the residual radioactivity met unrestricted release criteria established by NRC, and that the site is suitable for release for unrestricted use. Typical measurements results, following remediation, were close to background, and the supporting dose assessment resulted in an annual dose of 1 mrem above background. On the basis of the decommissioning activities conducted by UC, the staff's review of the termination survey final report, the results of the NRC confirmatory surveys, the staff concludes that the decommissioning process is complete and the site is suitable for release for unrestricted use. NRC staff intends to inform the U.S. Environmental Protection Agency, the Ohio Department of Health, Elkem Metals Company, Eveready Battery Company, and Union Carbide of NRC's intent to release the EMC site for unrestricted use and remove it from the SDMP list. Draft letters are attached (see Attachments 1, 2, 3, 4 and 5). The Office of General has reviewed this paper and had no legal objection.

RECOMMENDATION:

Although we consider this action to be within the delegated authority of the Director of Nuclear Material Safety & Safeguards, action will not be taken until the SRM is received. The staff requests action within 10 days.

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Executive Director for Operations

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Attachments:
1. Draft letter to U.S. EPA
2. Draft Letter to Ohio Department of Health
3. Draft letter to Union Carbide
4. Draft letter to Eveready Battery Company
5. Draft letter to Elkem Metals Company