

April 19, 2000

Tennessee Historical Commission  
ATTN: Mr. Herbert L. Harper  
Executive Director and Deputy State Historic  
Preservation Officer  
2941 Lebanon Road  
Nashville, TN 37243-0442

SUBJECT: NUCLEAR REGULATORY COMMISSION REQUEST FOR ADDITIONAL  
INFORMATION REGARDING UNION CARBIDE CORPORATION FACILITY IN  
LAWRENCEBURG, TENNESSEE

Dear Mr. Harper:

Pursuant to your letter dated March 29, 2000, and Rebecca Tadesse's, of my staff discussion with Joe Garrison, of your staff, I would like to take this opportunity to explain the history of the Union Carbide (UCAR) facility in Lawrenceburg, TN, in addition to what UCAR's proposed action entails.

On August 26, 1963, Union Carbide Company (UCC) was issued Special Nuclear Materials License No. SNM-724 (License SNM-724), for testing equipment and nuclear fuels development.

License SNM-724 authorized possession of up to 500 grams (g) of fully-enriched (<94 percent ) uranium for testing of equipment and processes in the Lawrenceburg Fuel Development Facility located at Highway 43 South, Lawrenceburg, TN. On May 22, 1964, the license was amended to authorize the possession of 150 kilograms (kg) of U-235 to make graphite-coated uranium-thorium carbide particles, and graphite-matrix fuel elements. The possession limit was increased to 475 kg on June 12, 1964.

By letter dated February 4, 1974, the licensee submitted "closeout" survey information and requested that SNM-724 be terminated and the facility be released for unrestricted use. On April 5, 1974, the Nuclear Regulatory Commission (NRC) in Region II performed a closeout inspection which was documented in their Inspection Report 70-784/74-1. Region II recommended that the license be terminated, and the facility be released for unrestricted use. License No. SMB-720 (SNM-720), which authorized the possession of source material, was also issued to this site.

License SNM-724 was terminated on June 4, 1974, and the U.S. Atomic Energy Commission (AEC) released the site for unrestricted use. License SMB-720 was superceded by the State of Tennessee, License No. S-5002-H8 and was terminated on August 28, 1975.

In 1991, Oak Ridge National Laboratory (ORNL) was contracted by NRC, to review and evaluate all nuclear material licenses terminated by NRC or its predecessor agencies. One of the objectives of this review was to identify sites with potential for residual contamination, based on information in the license documentation. ORNL evaluated the available survey data to determine if the information was sufficient to conclude that the site meets the existing guidelines for unrestricted use. Based on this evaluation NRC determined that sampling the soil in the former restricted area and sediment in the settling basins should be performed.

Radiological assessments performed at the UCAR facility and immediate vicinity have identified the presence of enriched and depleted uranium on building surfaces and in soil excess of current radiological release criteria. Sampling identified contamination in three buildings on the UCC site: Building 10, Building 5 Annex, and the Metallurgy Laboratory. Surface contamination in these buildings was primarily present as fixed-contamination.

UCAR is proposing to reduce residual contamination on building surfaces to be below the NRC's unrestricted release criteria for uranium. Building surfaces will be decontaminated with needle scalers, scabblers, or similar equipment. Surfaces which cannot be decontaminated will be removed, volume reduced, and packaged for disposal.

Contamination in soils/sediments in small areas was also present. Residual contamination in soil will be reduced to meet NRC's unrestricted release criteria identified in 10 CFR Part 20, Subpart E. Soils which exceed the Derived Concentration Guideline Level will be removed and disposed of as low-level radioactive waste.

Per Joe Garrison's request, I have enclosed a topographic map of the area indicating the location of, and two maps showing the location of the UCAR facility for your review. Also, per Joe Garrison's request, we are currently in the process of obtaining pictures of the buildings. However, the proposed action by UCAR will not affect the exterior of the buildings. The activities will only affect the interior parts of the buildings and small areas of soil outside the buildings. The NRC staff has been directed by the Commission to review and approve this site's decommissioning plan by August 2000. Due to this time constraint, your expeditious review is critical to meeting this goal. We are sure you agree that cleaning up this site will be of benefit to the citizens of Tennessee.

If you need any additional information, please contact Rebecca Tadesse, of my staff, at (301) 415-6221.

Sincerely,

Larry W. Camper, Chief  
Decommissioning Branch  
Division of Waste Management  
Office of Nuclear Material Safety  
and Safeguards

Enclosures:

1. Topographic Map
2. Map of UCAR Facility

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**Original signed by:**  
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