



Illinois Emergency Management Agency

Division of Nuclear Safety

Rod R. Blagojevich, Governor  
Andrew Velasquez III, Director  
Joseph G. Klinger, Assistant Director

April 28, 2008

Robert J. Lewis, Director  
Division of Materials Safety  
and State Agreements  
Office of Federal and State Materials  
and Environmental Management Programs  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

RE: Status of Current Complex Decommissioning and Uranium Recovery Sites  
(FSME-08-036)

Dear Mr. Lewis:

Enclosed is the Illinois Emergency Management Agency, Division of Nuclear Safety's response to your request for information on outstanding complex decommissioning sites.

If you have any questions, you may contact me or John Barcalow at (217)-782-1326.

Sincerely,

Gary W. McCandless, P.E.  
Acting Chief  
Bureau of Environmental Safety

Enclosure



## DECOMMISSIONING/Complex

### Spectrulite Consortium

#### 1.0 Site Identification

Location: Madison, IL  
License No. IL-01750-01  
License Status: In termination  
Project Manager Gary McCandless

#### 2.0 Site Status Summary

The Spectrulite Consortium, Inc. facility is a magnesium-thorium casting company. The buildings of the facility, originally built in the 1940s, also processed aluminum and steel and total nearly 32 acres under roof. The facility was originally owned by Dow Chemical, Phelps-Dodge, and Conalco. Previous owners also processed thorium in their metal rolling processes and did some work extruding uranium. After Spectrulite took possession of the buildings, the outside disposal area was cleaned up by Conalco in 1992. Much of the indoor contamination was related to deposits on overhead rafters 35 to 65 feet above the floor. Portions of the buildings were designated in the FUSRAP program and remediated by a contractor hired by the Corps of Engineers in 2000. Spectrulite's license to possess thorium has been maintained although the company declared bankruptcy and the facility complex sold. The license is maintained by Spectrulite through a bankruptcy trust and decontamination of the rafters, dross storage and isolated outdoor areas have been completed. Decommissioning criteria was based on concentration-based Agency guidelines for release for unrestricted use. Confirmatory surveys and sampling were performed by Agency staff. Pending submittal of final certifications and cost recovery fees by the company, the license will be terminated.

#### 3.0 Major Technical or Regulatory Issues

No outstanding issues

#### 4.0 Financial Assurance

The licensee never required to post any financial assurance.

#### 5.0 Estimated Date for Closure

5/30/2008

## Chicago Magnesium

### 1.0 Site Identification

Location: Blue Island, IL  
License No. IL-01077-01  
License Status: Decon  
Project Manager Gary McCandless

### 2.0 Site Status Summary

The Chicago Magnesium Casting Company facility is a magnesium-thorium casting company. The company has not processed thorium castings for many years. In 1997, the Agency encouraged timely decommissioning due to unknown quantities and locations of on-site buried waste that was authorized under the company's NRC license. During operations in the 1950's, 60's, and 70's, the licensee buried some of their waste on site and a portion extended outside the licensed property boundaries. The clean-up has progressed slowly due to the high cost of decommissioning. Site characterization found contamination and buried waste areas were more widespread than anticipated.

### 3.0 Major Technical or Regulatory Issues

The cost estimate to decommission the facility and grounds is estimated to be in excess of eight (8) million dollars. Due to the small size of company annual revenues, a phased cleanup plan was approved by the Agency. The area given priority for decontamination was the buried waste deposited on adjacent property. A concentration-based clean up standard of 5pCi/gm total thorium above background was established. Agency staff conducted confirmatory surveys and sampling to ensure the cleanup standards were achieved. The remaining portions of the property will be decommissioned based on a 25 mrem dose-based standard. Currently, the company's decommissioning contractor is performing a radon and thoron monitoring program to determine the contribution of radon as a component to justifying their proposed modeling scenario to establish the cleanup criteria around and beneath the facility. At least two more phases of decontamination activities are anticipated.

### 4.0 Financial Assurance

The licensee's posted financial assurance was not sufficient to cover the unforeseen cost of site decommissioning. As a result of the licensee's financial difficulties, the Agency released the posted funds to assist the licensee in securing matching funds from DOD for a portion of the decommissioning cost due to previous federal contracts. The licensee remains a viable operating company and has been able to set funds aside regularly from successful operations to aid in the decommissioning expenses.

### 5.0 Estimated Date for Closure

10/31/2010

## TRONOX (formerly Kerr-McGee)

### 1.0 Site Identification

Location: West Chicago, IL  
License No. STA-583  
License Status: Decon  
Project Manager Gary McCandless

### 2.0 Site Status Summary

This site is a 43 acre facility located in West Chicago, IL. It processed rare earths including thorium from 1932 until 1973. Kerr-McGee sought to decommission the property by stabilizing the waste on site. The plan was ultimately rejected by the NRC and the authority for overseeing the decommissioning was transferred to the Agency in 1991. In 1993, Kerr-McGee submitted an Application for a License Amendment to Decommission the Facility proposing a phased approach. The Agency has been approving the work for each stage. Waste was shipped to Envirocare of Utah (now Energy Solutions). The geology of the site allowed contaminated material to be processed through physical separation and washing. Clean gravel-type materials were returned as backfill. A water treatment plant was also constructed for groundwater cleanup and processing the contaminated water used in the washing process. The source term has been removed from the factory site to concentration-based standards except around and below the rail car loading facility which remains in operation to transfer off site contaminated materials for shipment for disposal. Currently the site is being monitored for groundwater contamination and a draft final corrective action plan is being reviewed by the Agency. Groundwater remediation could take 25 to 50 years based on attenuation and isolated hot spot pumping proposals.

### 3.0 Major Technical or Regulatory Issues

The processes used by the licensee involved acids and other chemicals that were also disposed on site. These processes resulted in the contamination of twenty constituents above groundwater protection standards. An extensive onsite and offsite groundwater compliance monitoring program is ongoing to determine the effectiveness of the clean-up. Area private wells have been plugged and a local ordinance issued prohibiting new wells from being installed. Many residential areas around West Chicago used tailings from the facility for backfill; in addition, run-off from the site to the creek and a nearby river are being cleaned under the EPA Superfund. This West Chicago decommissioning and remedial actions are the largest privately funded cleanup in the country.

### 4.0 Financial Assurance

The licensee has maintained a complex financial assurance agreement since cleanup began in 1994. Each year the licensee submits a new cost estimate that upon review and approval by the Agency, is adjusted based on work completed on the factory site. Over the years, self-guarantee, letter of credit, and surety bonds have been combined to yield the required funds. The licensee is not permitted to withdraw these funds to complete decommissioning activities.

## 5.0 Estimated Date for Closure

Site soils remediation around and below the railcar loading facility is scheduled for completion by the end of 2012. Groundwater corrective actions could take 25 to 50 years depending on residual source term effects and attenuation.