

**SAFETY INSPECTION REPORT
AND COMPLIANCE INSPECTION**

1. LICENSEE Sigma-Aldrich Company REPORT NUMBER(S) 030-10716/08-01		2. NRC/REGIONAL OFFICE Region III 2443 Warrenville Road, Suite 210 Lisle, IL 60532	
3. DOCKET NUMBER(S) 030-10716	4. LICENSE NUMBER(S) 24-16273-01	5. DATE(S) OF INSPECTION December 11, 2008	
6. INSPECTION PROCEDURES USED 87125	7. INSPECTION FOCUS AREAS 03.01-03.07		

SUPPLEMENTAL INSPECTION INFORMATION

1. PROGRAM CODE(S) 03610	2. PRIORITY 3	3. LICENSEE CONTACT Thomas Spenser RSO	4. TELEPHONE NUMBER 314-286-7686
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Main Office Inspection Next Inspection Date: 12/08 or 01/09

Field Office _____

Temporary Job Site Inspection _____

PROGRAM SCOPE

Sigma's production facility is located at 11542 Fort Mims Drive, Maryland Heights, Missouri. Sigma's radioactive materials usage at the Ft. Mims site consisted of research and development activities as defined in 10 CFR 30.4, and storage, processing and use in the production of labeled compounds for distribution to authorized customers. The licensee used radioactive materials in specific areas of the building since 1975. The licensee ceased production activities at the facility on September 30, 2008. The radioactive materials significant to NRC decommissioning requirements used at the Fort Mims facility consisted of carbon-14 and hydrogen-3.

The production facility consists of a two-story building of approximately 20,000 square feet. The building is constructed on a concrete slab. The building exterior walls are a combination of cinder block, sheet metal and wood. The facility is located on a one-acre parcel in a commercial/light industrial park.

Sigma has contracted with a decommissioning contractor to perform decommissioning activities including characterization, remediation, final status surveys, and development of a final report. The contractor is performing on-site activities under a reciprocity agreement with the NRC using a Massachusetts Radioactive Materials License. The licensee projects that the decommissioning of the facility will take approximately 3 to 4 months. The end goal is to remediate the facility to below the NRC screening values. Carbon-14 and hydrogen-3 contamination is primarily limited to building interior, with spotty carbon-14 and hydrogen-3 contamination in soils near the building exhaust stack. There is one unused septic tank under a portion of the building, which will be further characterized after building demolition. The licensee submitted a decommissioning plan to the NRC for review on October 22, 2008. The licensee has committed to the NRC to limit the contractor's decommissioning activities to simple decontamination, waste packaging, and activities until Sigma's decommissioning plan is approved by the NRC.

Performance Observations

The NRC inspectors toured the impacted areas of the licensee's production facility, and observed the decommissioning service contractor's activities. The licensee and decommissioning service contractor management and staff were interviewed. The inspectors observed and evaluated decommissioning activities being performed. The inspectors also evaluated facility security, waste shipment records, radiological posting and labeling, bioassay and air sampling records, and performed limited radiological surveys. The inspectors noted that significant progress had been made regarding the removal of laboratory materials, counters, and hoods.

No violations of NRC requirements were identified

C. Gupta 12/17/08