

SAFETY INSPECTION REPORT AND COMPLIANCE INSPECTION

1. LICENSEE/LOCATION INSPECTED:

Sigma-Aldrich Company
11542 Fort Mims Drive
St. Louis, Missouri 63146

REPORT NUMBER(S) 03010716/2013001

2. NRC/REGIONAL OFFICE

Region III
U. S. Nuclear Regulatory Commission
2443 Warrenville Road, Suite 210
Lisle, IL 60532-4352

3. DOCKET NUMBER(S)

030-10716

4. LICENSE NUMBER(S)

24-16273-01

5. DATE(S) OF INSPECTION

8/2/2013 (on-site)

8/2/2013-8/21/13 (in-office)

LICENSEE:

The inspection was an examination of the activities conducted under your license as they relate to radiation safety and to compliance with the Nuclear Regulatory Commission (NRC) rules and regulations and the conditions of your license. The inspection consisted of selective examinations of procedures and representative records, interviews with personnel, and observations by the inspector. The inspection findings are as follows:

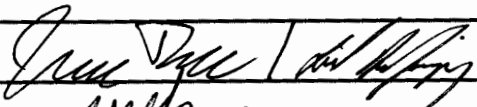

- 1. Based on the inspection findings, no violations were identified.
- 2. Previous violation(s) closed.
- 3. The violation(s), specifically described to you by the inspector as non-cited violations, are not being cited because they were self-identified, non-repetitive, and corrective action was or is being taken, and the remaining criteria in the NRC Enforcement Policy, to exercise discretion, were satisfied.

Non-cited violation(s) were discussed involving the following requirement(s):

- 4. During this inspection, certain of your activities, as described below and/or attached, were in violation of NRC requirements and are being cited in accordance with NRC Enforcement Policy. This form is a NOTICE OF VIOLATION, which may be subject to posting in accordance with 10 CFR 19.11.
(Violations and Corrective Actions)

Statement of Corrective Actions

I hereby state that, within 30 days, the actions described by me to the Inspector will be taken to correct the violations identified. This statement of corrective actions is made in accordance with the requirements of 10 CFR 2.201 (corrective steps already taken, corrective steps which will be taken, date when full compliance will be achieved). I understand that no further written response to NRC will be required, unless specifically requested.

TITLE	PRINTED NAME	SIGNATURE	DATE
LICENSEE'S REPRESENTATIVE	Thomas K. Spencer (RSO)		
NRC INSPECTOR	Jeremy Tapp / Lionel Rodriguez		8/22/13
BRANCH CHIEF	Robert Orlikowski		8/22/2013

Docket File Information
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6. INSPECTION PROCEDURES USED 87104	7. INSPECTION FOCUS AREAS Security and Control of Contaminated Material
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SUPPLEMENTAL INSPECTION INFORMATION

1. PROGRAM CODE(S) 3900	2. PRIORITY D	3. LICENSEE CONTACT Thomas K. Spencer (RSO)	4. TELEPHONE NUMBER (314) 286-7686
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Main Office Inspection Next Inspection Date: _____
 Field Office Inspection
 Temporary Job Site Inspection

PROGRAM SCOPE

The inspection was conducted at the Sigma-Aldrich Company's (Sigma) site located at 11542 Fort Mims Drive, St. Louis, Missouri. Sigma did research and development, and radiolabeled synthesis of compounds with C-14 and H-3, until they ceased production activities on September 30, 2008. Sigma contracted with an agreement state licensee, Philotechnics, to perform decommissioning activities as described in their Decommissioning Plan (DP) dated October 20, 2008. The first phase of the decommissioning was the remediation of the Fort Mims two-story building to make it suitable for unrestricted use, which was completed in July 2009. The second phase was the demolition of the building down to the concrete slab (completed in October 2009) and the removal of the slab (completed in May 2010). The third phase began in November 2009 and used soil borings to locate and characterize a former septic tank area. Residual soil contamination above previously approved DP limits was found. In February 2011, Sigma submitted a license amendment request to release the site for unrestricted use as supported by a December 2010 site-specific dose model. In June 2012, the NRC accepted for technical review the licensee's amendment request, after requesting and receiving additional information on the site-specific dose model. The NRC is currently reviewing the licensee's request to release the site for unrestricted use. The current Sigma license (Amendment No. 19) has an expiration date of April 30, 2013, but continues in effect per 10 CFR 30.36(c) until the license is terminated by the NRC.

PERFORMANCE OBSERVATIONS

The inspectors observed that the licensee was adequately securing licensed material (residual contamination in the soil) through the use of a "construction fence" and two "No Trespassing" signs. The inspectors identified a minor violation of NRC requirements for failure to post the area in accordance with 10 CFR 20.1902(e), "Posting of areas or rooms in which licensed material is used or stored." As documented in a letter dated August 13, 2013, "Sigma Response to Fort Mims site inspection on August 2, 2013," the licensee estimated a total quantity of 85 mCi of C-14 in the area, which exceeds the 1 mCi posting requirement for C-14. The violation was categorized as a violation of minor safety significance that is not subject to formal enforcement action in accordance with Section 2.3.1 of the NRC Enforcement Policy because: (1) the licensee has controls in place to impede access to the licensed material; (2) the licensed material is in the form of very low levels of residual radioactivity in the soil; and (3) the licensee implemented adequate corrective actions and posted the area on August 20, 2013. In addition, the licensee has an evaluation currently under NRC review to demonstrate the site meets the radiological criteria for unrestricted use, which if approved, would allow the license to be terminated. Upon license termination, the site would no longer be required to be posted.