

SAFETY INSPECTION REPORT AND COMPLIANCE INSPECTION

1. LICENSEE/LOCATION INSPECTED:

Sigma-Aldrich Company
3300 S. Second Street
St. Louis, MO

2. NRC/REGIONAL OFFICE

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

REPORT NUMBER(S) 2011-001

3. DOCKET NUMBER(S)

030-28992/030-11303

4. LICENSE NUMBER(S)

24-16607-03

5. DATE(S) OF INSPECTION

9/12/11 - in office

review to - 10/13/11

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			
NRC INSPECTOR	Robert Gattone Claire Wellingshoff	Robert B. Gattone, Jr. Claire Wellingshoff	10/13/11 10/13/11
BRANCH CHIEF	Tamara E. Bloomer	Tamara E. Bloomer	10/14/11

Docket File Information
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3. DOCKET NUMBER(S) 030-28992/030-11303	4. LICENSE NUMBER(S) 24-16607-03	5. DATE(S) OF INSPECTION review to - in office 9/12/11 - 10/13/11
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6. INSPECTION PROCEDURES USED 87126	7. INSPECTION FOCUS AREAS 02.01-02.07
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SUPPLEMENTAL INSPECTION INFORMATION

1. PROGRAM CODE(S) 03610	2. PRIORITY 3	3. LICENSEE CONTACT Tom Spencer, RSO	4. TELEPHONE NUMBER (314) 771-5765
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Main Office Inspection Next Inspection Date: 09/12/2014

Field Office Inspection

Temporary Job Site Inspection

PROGRAM SCOPE

Licensed activities were conducted Monday through Friday between 8:00 am and 5:00 pm. Low microcurie quantities of hydrogen-3, carbon-14, phosphorus-32, phosphorus-33, cobalt-57, and iodine-125 were used by 6 authorized users at the facility inspected for conducting radioimmunoassays of biologicals, such as blood protein. The maximum quantity of iodine-125 that was used per experiment was about 0.3 microcuries, and only non-volatile forms were used. Fifteen authorized users worked with phosphorus-32 at the Laclede facility (about 10 microcuries per experiment). Licensed material was not used at the DeKalb facility.

The inspectors observed: (1) that licensed material was secured as required; (2) an authorized user had an assigned whole body dosimeter; (3) that, based on independent radiation surveys using the NRC's Ludlum Model 2403, Serial 16160 that was calibrated on June 14, 2011, the maximum count rate at selected surfaces of Rooms N1143, N1111, and N1144 was less than 50 counts per minute; (4) that the licensee used a calibrated survey instrument; (5) an authorized user demonstrate how battery checks were done on a survey instrument; (6) records of licensed material usage; (7) an authorized user demonstrate how ambient count rate personnel surveys were conducted; (8) an authorized user demonstrate how pipettes were used to handle licensed material; (9) decay-in-storage records; (10) an authorized user demonstrate how Personal Protective Equipment was used; (11) that food and drink was not in restricted areas; (12) that post experiment area surveys were conducted; (13) selected area survey records; (14) that, based on a spot check physical inventory, the licensee accounted for its licensed material; (15) records showing that analyses of the LSC hydrogen-3 and carbon-14 quench standards indicated that quench correction yielded the proper radioactivity for the standards; (16) that dosimetry records for 2009 through April 14, 2011, indicated 0 millirem for monitored individuals; (17) selected Radiation Safety Committee Meeting Minutes; (18) records showing compliance with 10 CFR 30.35(g) (3); and (19) records showing that removable contamination surveys were sensitive enough to detect 220 disintegrations per minute per 100 square centimeters.