

**INSPECTION RECORD**

Region III Inspection Report No. 2012001

License No. 22-00057-03  
Docket No. 030-04950

Licensee (Name and Address):

3M Corporate, Health Physics Services  
3M Center, Building 220-06-W-08, P.O. Box 33283  
St. Paul, MN 55133-3283

Location (Authorized Sites) Being Inspected:

Above site (corporate office)  
Commercial Graphics Division, 2120 East Austin, Nevada, MO 64772  
Industrial Adhesives & Tapes Division, 3211 Chestnut Express, Springfield, MO 65802

Licensee Contact: Frederick B. Entwistle, RSO Telephone No. 651-736-0740

Priority: 5 Program Code: 03120

Date of Last Inspection: 10/18/07 Date of This Inspection: 8/14/12 through 9/12/12

Type of Inspection: ( ) Initial ( ) Announced (X) Unannounced  
(X) Routine ( ) Special

Next Inspection Date: August 2012 ( ) Normal ( ) Reduced  
Justification for reducing the routine inspection interval: N/A

Summary of Findings and Actions:

- ( ) No violations cited, clear U.S. Nuclear Regulatory Commission (NRC) Form 591 or regional letter issued
- ( ) Non-cited violations (NCVs)
- ( ) Violation(s), Form 591 issued
- (X) Violation(s), regional letter issued
- ( ) Followup on previous violations

Inspector(s) Geoffrey M. Warren *J. Bloomer for* Date 10/16/12  
(Names) (Signatures)

Robert P. Hays *J. Bloomer for* Date 10/16/12  
(Names) (Signatures)

Approved Tamara E. Bloomer *J. Bloomer* Date 10/16/12  
(Name) (Signature)

**PART I-LICENSE, INSPECTION, INCIDENT/EVENT, AND ENFORCEMENT HISTORY**

1. AMENDMENTS AND PROGRAM CHANGES:

<u>AMENDMENT #</u>	<u>DATE</u>	<u>SUBJECT</u>
41	Dec. 2008	Release New Jersey facility for unrestricted use

2. INSPECTION AND ENFORCEMENT HISTORY:

No violations were cited as a result of the last two routine inspections performed in November 2001 and October 2007.

One SL-IV violation was cited as a result of a reactive inspection in June 2007. The inspection concerned a lost tritium source from a static meter; the licensee was cited for the failure to secure the tritium source. The inspector determined that the licensee completed corrective actions for this violation as described in the report. The licensee no longer possessed any of the devices involved in this event. Based on this, the violation is closed.

3. INCIDENT/EVENT HISTORY:

NMED Item No. 100336: The shutter on a fixed gauge could not be closed. A licensed service provider made repairs.

NMED Item No. 100488: A source had become misaligned in its housing; the licensee identified that no personnel were exposed as a result of the misalignment. The manufacturer realigned the source but was unable to explain how the source had become misaligned.

NMED Item No. 120332: The licensee identified that a gauge shutter had become bent from coming into contact with the material being produced. Licensee personnel shielded the gauge, replaced it with one in storage and shipped the shielded gauge to the manufacturer for repair.

The licensee's written reports for each of these events contained all required information and were submitted within the required 30-day period.

**PART II - INSPECTION DOCUMENTATION**

1. ORGANIZATION AND SCOPE OF PROGRAM:

The licensee was a large manufacturing company, producing films and medical products. The radiation safety office, located at the corporate headquarters in St. Paul, Minnesota, was staffed with five health physicists, including the RSO. The licensee operated fixed gauges at six sites located in Indiana, Missouri, South Dakota, and Michigan. Additional facilities were licensed under Agreement State jurisdiction.

The corporate radiation safety staff performed annual audits at each facility and oversaw the procurement, tracking, and disposal of devices at each site.

At Nevada, Missouri, the plant produced various flexible plastic sheet products as ordered by their customers for sign graphics and operates 24 hours daily. The licensee

possessed one static eliminator device as authorized by Item 6.C. of the license and 38 generally-licensed beta thickness gauges containing Krypton-85, with three in storage awaiting installation by the vendor.

At Springfield, Missouri, the plant produced various sheet products used as adhesives to go between two outer layers of other products that hold the layers together as well as adhesive tapes for various applications and operated 24 hours daily. The licensee possessed five gamma backscatter devices, with one in storage, as authorized by Item 6.B. of the license, three static eliminators as authorized by Item 6.C. of the license, and 8 generally-licensed beta thickness gauges containing Krypton-85.

While authorized to possess materials at a site in Columbia, Missouri, the licensee had removed all licensed materials from the site on June 15, 2012, and notified the NRC in writing on August 15, 2012, about having ceased activities at the site.

At each production facility, the radiation safety program was managed by a plant RSO and ARSO who performed six-month inventories and leak testing as required. The RSO/ARSO also conducted plant radiation safety training and oversaw installation and removal of the devices by the maintenance staff or by manufacturers/vendors of the devices as necessary. The radiation safety personnel had access to 3M radiation safety-related information at other 3M plants and Corporate Health Physics staff through 3M's intranet system.

2. SCOPE OF INSPECTION:

Inspection Procedure(s) Used: 87124

Focus Areas Evaluated: 03.01 – 03.07

The radiation safety staff at each facility demonstrated and discussed: (1) gauge maintenance and repair; (2) training for gauge users; (3) leak test procedures; (4) inventories; (5) security of licensed material at each storage facility; (6) survey meters and calibration procedures; (7) signage and postings; and (8) receipt, use, and transfer of devices. Corporate radiation safety staff described site and program audits and tracking of licensed materials at each site. The inspectors noted no concerns with these activities. Interviews with licensee personnel indicated adequate knowledge of radiation safety concepts and procedures. Dosimetry and survey records indicated no exposures of concern to radiation workers or members of the public.

The inspectors reviewed the licensee's corrective actions taken for NMED Item numbers 100336, 100488, and 120332 for events that occurred at the Springfield, MO plant with the Springfield facility RSO; these events are now considered closed.

3. INDEPENDENT AND CONFIRMATORY MEASUREMENTS:

The inspector performed independent and confirmatory radiation measurements which indicated results consistent with licensee survey records and postings.

4. VIOLATIONS, NCVs, AND OTHER SAFETY ISSUES:

- A. Title 10 of the Code of Federal Regulations 30.50(b)(2) requires that each licensee notify the NRC within 24 hours after the discovery of an event in which equipment is disabled or fails to function when (i) The equipment is required by regulation or license condition to prevent releases exceeding regulatory limits, to prevent exposures to radiation and radioactive materials exceeding regulatory limits, or to mitigate the consequences of an accident; (ii) The equipment is required to be available and operable when it is disabled or fails to function; and (iii) No redundant equipment is available and operable to perform the required safety function.

On May 21, 2012, the licensee became aware that the shutter on an industrial thickness gauging device was bent (NMED Item No. 120332). This was reportable to the NRC in accordance with the regulation above. Initially, the licensee did not believe that this was reportable, so did not notify the NRC within the required 24-hour period. Later in the week, the licensee contacted an inspector to confirm this; the inspector was out of the office, so the licensee individual left a message. The inspector contacted the licensee upon receipt of the message the following week and informed the licensee that the event was reportable, after which the licensee reported the event on May 29. The failure to report the event to NRC within 24 hours of discovery is a violation of 10 CFR 30.50(b)(2).

The root cause of the violation was the licensee's corporate staff's lack of understanding of the reporting requirements described in 10 CFR Part 30. As corrective action, licensee corporate staff: (1) reported the event to NRC on May 29, 2012; and (2) have reviewed the reporting requirements and understand that events that meet the criteria in that part must be reported to NRC. As such, the licensee is now in compliance with NRC requirements. The written report submitted on June 18, 2012, contained all required information and was submitted within the required 30-day period after discovery of the event.

This is being cited as a Severity Level IV violation because the NRC would be unlikely to perform a reactive inspection for this event. Shutter events where there are no exposures to radiation staff or members of the public are typically reviewed during the next routine inspection. In this case, notifying the NRC within 24 hours would not have caused the NRC to undertake a substantial further inquiry.

- B. License Condition No. 16.A. to NRC License No. 22-00057-03 requires, in part, that replacement of sealed sources containing licensed material be performed only by the device manufacturer or specified individuals. The licensee identified that on June 7, 2006, an individual who was not one of the specified individuals removed the source block from a beta gauge and exchanged it with the source block from another gauge in storage. The individual had received manufacturer's training on this device and was qualified, but not authorized, to perform this activity. The failure to have only an authorized individual perform such an activity is a violation of License Condition No. 16.A. of the license.

The root cause of the violation was confusion in terminology between Corporate Health Physics and plant personnel regarding the source head and the source block. As corrective action, the licensee provided training to maintenance staff at all licensed facilities possessing such beta gauges so that they understood what activities they were authorized to perform with these gauges. Consistent with Section 2.3.2.b of the Enforcement Policy, this is a Non-cited Violation, because the violation is non-repetitive, licensee-identified, and corrected.

5. PERSONNEL CONTACTED:

- # Nicholas K. Bates, Certified Health Physicist
- # John A. Bauhs, Certified Health Physicist
- # Lisa Cardona, Plant RSO, Springfield, Missouri
- Frederick B. Entwistle, Corporate Radiation Safety Officer (by telephone)
- #\* Michael A. Lewandowski, Certified Health Physicist
- # Shane Niestrath, Plant ARSO, Nevada, Missouri
- # Daniel McGrane, Health Physicist
- # Sylvia Propps, Plant Manager, Springfield, Missouri
- # Dave Raber, Acting Plant Manager, Nevada, Missouri
- # Jon Reneberg, Plant RSO, Nevada, Missouri
- # Steve Skahan, EHS Manager, Springfield, Missouri  
and other licensee staff
  
- # Individuals present at preliminary exit meetings on August 14, September 11, or  
September 12, 2012
- \* Individual present at telephonic exit meeting on October 1, 2012