

April 10, 2013

Ms. Karen Burke, Director  
Environmental Remediation  
Covidien  
Mallinckrodt, Inc.  
675 McDonnell Boulevard  
St. Louis, MO 63134

SUBJECT: NRC INSPECTION REPORT NO. 04006563/13001(DNMS) —  
MALLINCKRODT, INC., ST LOUIS, MO

Dear Ms. Burke:

On March 15, 2013, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at the Columbium-Tantalum (C-T) Plant 5 area, located within the Mallinckrodt St. Louis Plant, at 3600 North Second Street, St. Louis, Missouri. The purpose of the inspection was to perform on-site confirmatory surveys of completed areas within Plant 5 and other areas related to the decommissioning activities, and to determine whether the decommissioning of the Plant 5 area was conducted in accordance with your NRC approved C-T Phase II Decommissioning Plan (DP) and NRC regulations. On March 15, 2013, the NRC inspector discussed the results of the onsite inspection with you.

This inspection examined decommissioning activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. Specifically, the on-site inspections examined decommissioning activities conducted under your site-specific work plans and NRC approved DP, and included an examination of decommissioning documentation and representative records, observations of activities, and interviews with personnel.

Based on the results of the onsite inspection, the NRC did not identify any violations.

In accordance with Title 10 of the Code of Federal Regulations (CFR) 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the NRC's Agencywide Document Access and Management system (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>.

K. Burke

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We will gladly discuss any questions you have concerning this inspection.

Sincerely,

*/RA/*

Christine A. Lipa, Chief  
Materials Control, ISFSI, and  
Decommissioning Branch  
Division of Nuclear Materials Safety

Docket No. 040-06563

License No. STB-401

Enclosure:

Inspection Report No. 04006563/13001(DNMS)

cc w/encl: P. Anderson, State of Missouri,  
Missouri Department of Natural  
Resources (MDNR)  
B. Doster, State of Missouri, MDNR  
H. Bozoian, State of Missouri, MDNR  
S. Parker-Pauley, State of Missouri, MDNR  
J. Rankins, U.S. Army Corps of Engineers  
S. Cotner, U.S. Army Corps of Engineers  
E. Berry, Mallinckrodt  
J. Summers, Mallinckrodt

K. Burke

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J. Rankins, U.S. Army Corps of Engineers  
S. Cotner, U.S. Army Corps of Engineers  
E. Berry, Mallinckrodt  
J. Summers, Mallinckrodt

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No.: 040-06563

License No.: STB-401

Report No.: 04006563/13001(DNMS)

Licensee: Mallinckrodt, Inc.

Location: C-T Plant 5 area within the  
Mallinckrodt St. Louis Plant  
3600 North Second Street  
St. Louis, MO

Inspection Date: March 15, 2013

Inspector: E. Bonano, Health Physicist

Approved by: Christine A. Lipa, Chief  
Materials Control, ISFSI, and  
Decommissioning Branch  
Division of Nuclear Materials Safety

Enclosure

## EXECUTIVE SUMMARY

### **Mallinckrodt, Inc. Phase II C-T Decommissioning Project NRC Inspection Report No. 04006563/13001(DNMS)**

This was an on-site inspection of completed decommissioning activities including final status surveys; at the time of the inspection, no remediation or final status surveys were being conducted. The licensee plans to meet with the U.S. Nuclear Regulatory Commission (NRC) Project Manager (PM) in the Office of Federal and State Materials and Environmental Management Programs (FSME), Division of Waste Management and Environmental Protection (DWMEP) to discuss the status of decommissioning, the final status survey report (FSSR), and their plan regarding non C-T (Columbium-Tantalum (C-T)) material discovered during the final stages of the decommissioning project which was now impacting the release of the site for unrestricted use.

During the on-site inspection on March 15, 2013, the NRC inspector performed confirmatory radiological surveys of the backfilled and affected areas within and around the Plant 5 area, and discussed the status of non C-T related radioactive contaminated material identified in the ground next to Building 240 which was not addressed or accounted for in the Decommissioning Plan (DP) or license. The licensee has accepted full responsibility for this material, which is sub-surface soil, contaminated with Radium 226 as a result of former site processes before and unrelated to the C-T license activities. The inspector also performed walk-over surveys of cleared areas that were used to temporarily store contaminated soil in large "super sacks" staged for disposal via rail cars. The on-site lab was demobilized; therefore, the inspector surveyed the laboratory, affected adjoining rooms, and the outside sample storage container.

#### **Closeout Inspection and Surveys (IP 83890)**

The inspector concluded, based on independent confirmatory surveys, that the licensee conducted the decommissioning of the Plant 5 area in accordance with the DP and license requirements. (Section 1.0)

## Report Details<sup>1</sup>

### **1.0 Closeout Inspection and Survey (IP 83890)**

#### a. Inspection Scope

The NRC inspector performed confirmatory radiological surveys of the backfilled and affected areas within and around the Plant 5 area; specifically, the surface areas around Building (Bldg.) 240 to ensure the licensee conducted the surveys in accordance with the requirements as stated in the C-T Phase II DP, Revision 2, dated August 12, 2008, and license requirements. The inspector also performed walk-over surveys of cleared areas that were used to temporarily store contaminated soil in large “super sacks” staged for disposal via rail cars; and surveyed the demobilized and empty on-site laboratory, affected adjoining rooms, and the outside sample storage container.

#### b. Observations and Findings

The inspector took background measurements, using a calibrated Ludlum 2241-3 survey meter with a 44-10 Sodium Iodide (NaI) 2 by 2 detector, of similar non-affected areas which produced readings between 4 to 12 kilo ( $1 \times 10^3$ ) counts per minute (kcpm). Within the Plant 5 area, the inspector identified two hot-spots with surface measurements of approximately: (1) 25 kcpm in a small trench (west side alley from Bldg. 245); and (2) 55 kcpm (northwest corner of Bldg. 215); the licensee’s decommissioning contractor planned to remediate to less than the approved action levels (i.e., 24 – 28 kcpm (gross counts) field instrumentation dependent), and provide a discussion in the FSSR. The inspector did not detect radiation level measurements greater than background in any other areas outside of Plant 5 and around Building 240, and all contaminated material collected from the remediation activities was shipped to a licensed radioactive disposal site.

No findings of significance were identified.

#### c. Conclusions

The inspector concluded, based on independent confirmatory surveys, that the licensee conducted the decommissioning of the Plant 5 area in accordance with the DP and license requirements.

### **3.0 Exit Meetings**

The inspector presented the inspection results to Ms. Karen Burke, Director of Environmental Remediation, at the conclusion of the on-site inspection on March 15, 2013. The inspector confirmed that none of the potential report input discussed was considered proprietary.

ATTACHMENT: SUPPLEMENTAL INFORMATION

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<sup>1</sup>A list of acronyms used in these “Details” are provided at the end of the report.

## **SUPPLEMENTAL INFORMATION**

### **PARTIAL LIST OF PERSONS CONTACTED**

P. Anderson, Engineer, Missouri Department of Natural Resources (MDNR)  
K. Burke, Project Manager, RSO, Mallinckrodt

### **LIST OF PROCEDURES USED**

IP 83890      Closeout Inspection and Survey

### **ITEMS OPENED, CLOSED, AND DISCUSSED**

None

### **DOCUMENTS REVIEWED**

Documents reviewed during the inspection are listed in the body of the report.

### **LIST OF ACRONYMS USED**

ADAMS	Agencywide Documents Access and Management System
CFR	Code of Federal Regulations
C-T	Columbium-Tantalum
DNMS	Division of Nuclear Materials Safety
DP	Decommissioning Plan
DWMEP	Division of Waste Management and Environmental Protection
FSME	Office of Federal and State Materials and Environmental Management Programs
FSSR	Final Status Survey Report
FUSRAP	Formerly Utilized Sites Remedial Action Program
IP	Inspection Procedure
kcpm	kilo ( $1 \times 10^3$ ) counts per minute
MDNR	Missouri Department of Natural Resources
NaI	Sodium Iodide
NRC	U.S. Nuclear Regulatory Commission
PM	Project Manager
RSO	Radiation Safety Officer
USACE	U.S. Army Corp of Engineers