

**SAFETY INSPECTION REPORT AND COMPLIANCE INSPECTION**

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|---|---|
| 1. LICENSEE/LOCATION INSPECTED:<br>Mallinckrodt Chemical, Inc. / St. Louis, MO<br><br>REPORT NUMBER(S) <sup>04006563</sup> / 2011001 (Decommissioning Site) | 2. NRC/REGIONAL OFFICE<br>REGION III<br>US NUCLEAR REGULATORY COMMISSION<br>801 WARRENVILLE ROAD<br>LISLE IL 60532-4351 |
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|                                  |                                  |                                       |
|----------------------------------|----------------------------------|---------------------------------------|
| 3. DOCKET NUMBER(S)<br>040-06563 | 4. LICENSEE NUMBER(S)<br>STB-401 | 5. DATE(S) OF INSPECTION<br>4/28/2011 |
|----------------------------------|----------------------------------|---------------------------------------|

**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, NUREG-1600, 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. This form is a NOTICE OF VIOLATION, which may be subject to posting in accordance with 10 CFR 19.11

**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             | Peter J. Lee      | <i>Peter J. Lee</i>   | 4/28/2011 |
| Branch Chief              | Christine A. Lipa | <i>Christine Lipa</i> | 5-9-11    |

*Docket File Information*  
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| 1. LICENSEE<br>Mallinckrodt Chemical, Inc. / St. Louis, MO<br>REPORT NUMBER(S) 04006563/2011001 |                                 | 2. NRC/REGIONAL OFFICE<br>REGION III                  |  |
| 3. DOCKET NUMBER(S)<br>040-06563  | 4. LICENSE NUMBER(S)<br>STB-401 | 5. DATE(S) OF INSPECTION<br>4/28/2011                 |  |
| 6. INSPECTION PROCEDURES<br>IP 87104, IP 83890  |                                 | 7. INSPECTION FOCUS AREAS<br>Survey Unit 1 of Plant 5 |  |

**SUPPLEMENTAL INSPECTION INFORMATION**

|                     |                                |                                       |                                     |
|---------------------|--------------------------------|---------------------------------------|-------------------------------------|
| 1. PROGRAM<br>11300 | 2. PRIORITY<br>Decommissioning | 3. LICENSEE CONTACT<br>Karen M. Burke | 4. TELEPHONE NUMBER<br>314-654-5838 |
|---------------------|--------------------------------|---------------------------------------|-------------------------------------|

Main Office Inspection      Next Inspection Date: \_\_\_\_\_ TBD \_\_\_\_\_  
 Field Office Inspection \_\_\_\_\_  
 Temporary Job Site Inspection \_\_\_\_\_

**PROGRAM SCOPE**

During the inspection, the inspector performed the following:

1. Review of waste water discharge during March and April, 2011 from Area 5. (Plant 5)
2. Evaluation of the on-site laboratory which was used to guide the excavation.
3. Observation of the licensee's contractor conducting the final status survey.
4. Observation of ORISE conducting the confirmatory survey.
5. Observation of licensee's contractor counting the biased sample.

The waste water discharges were in compliance with Part 20 limit. The on-site laboratory was adequately calibrated to perform the isotopic analyses and the established nuclide library was adequate for the identification of the concern radionuclides. During the final status survey, the workers conducted the sampling by collecting the sample near surface of the excavation and removing the rocks and only allowing the soil for the isotopic analyses, which was based on the assumption of the clean rock. The inspector selected one biased sample collected by ORISE containing mixture of rock and soil, and had the licensee's contractor analyzed at on-site laboratory. The onsite-laboratory technician appeared knowledgeable on sample analyses. Significant activities were found in the rock beside the soil.

Based on the approved dose model, which was used to derive the DCGLs, the licensee should collect one-meter composite samples instead of near surface samples. The current sampling procedure had been used to guide the excavation and will also be used to prepare the samples for final status survey. Due to underestimating the sample activities by excluding the rock, the site may not be ready for the final status survey, additional excavation may be needed. Also, if the site is released based on the current sampling method, the site would exceed 25 mrem/year

The licensee stated that they planned to revise the current sampling plan to include the contaminated rock in the one-meter composite samples and redo the final status survey.

*Christine Tupa* 5-13-11