



Materials Inspection Report

1. Licensee/Location Inspected: The Dow Chemical Company 1803 Building Midland, MI 48674 Report Number(s) 2023-001	2. NRC/Regional Office Region III U. S. Nuclear Regulatory Commission 2443 Warrenville Road, Suite 210 Lisle, IL 60532-4352
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3. Docket Number(s) 030-04783	4. License Number(s) 21-00265-06	5. Date(s) of Inspection 01/13/23; exit 01/20/23
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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. During this inspection, certain of your activities, as described below and/or attached, were in violation of NRC requirements, and were assessed at Severity Level IV, in accordance with the NRC Enforcement Policy.
 - A. 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, corrective action was or is being taken, and the remaining criteria in the NRC Enforcement Policy were satisfied.
 (Non-cited violation(s) was/were discussed involving the following requirement(s))

 - B. The following violation(s) is/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 AND DATE
LICENSEE'S REPRESENTATIVE		
NRC INSPECTOR	Ryan Craffey	 <small>Digitally signed by Ryan J. Craffey Date: 2023.01.31 17:54:44 -05'00'</small>
BRANCH CHIEF	Rhex Edwards	 <small>Digitally signed by Rhex A. Edwards Date: 2023.02.08 11:04:10 -06'00'</small>



Materials Inspection Record

1. Licensee Name: The Dow Chemical Company	2. Docket Number(s): 030-04783	3. License Number(s) 21-00265-06
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4. Report Number(s): 2023-001	5. Date(s) of Inspection: January 13, 2023; exit January 20, 2023
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6. Inspector(s): Ryan Craffey	7. Program Code(s): 03610	8. Priority: 3	9. Inspection Guidance Used: IP 87124, 87126
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10. Licensee Contact Name(s): Kelly Wegener-Gave, RSO	11. Licensee E-mail Address: kelly.wegener@dow.com	12. Licensee Telephone Number(s): 989-496-1386
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13. Inspection Type: <input type="checkbox"/> Initial <input checked="" type="checkbox"/> Routine <input type="checkbox"/> Announced <input type="checkbox"/> Non-Routine <input checked="" type="checkbox"/> Unannounced	14. Locations Inspected: <input type="checkbox"/> Hybrid <input checked="" type="checkbox"/> Main Office <input checked="" type="checkbox"/> Field Office <input type="checkbox"/> Temporary Job Site <input type="checkbox"/> Remote	15. Next Inspection Date (MM/DD/YYYY): 01/13/2026 <input checked="" type="checkbox"/> Normal <input type="checkbox"/> Extended <input type="checkbox"/> Reduced <input type="checkbox"/> No change
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16. Location(s) Inspected List:

Dow Midland Division, Midland, MI; including facilities at 3901 South Saginaw Road

Note - Visitors can access both facilities via the Dow MiOps North Gate (GPS coordinates 43.600508, -84.207862)
Parking is available on the north side of this building, off South Saginaw Road.

17. Scope and Observations:

The Dow Chemical Company is an American multinational chemical corporation authorized by a broad-scope materials license to use unsealed byproduct material for research and development as well as sealed sources in industrial and analytical devices at the Dow Michigan Operations (MiOps) site in Midland, Michigan. At the time of the inspection, approximately 50 individuals were approved to use radiolabeled compounds containing C-14 for toxicokinetic, metabolism, and environmental phase studies, and/or a dozen fixed gauges containing Cs-137 for level and density measurements at its production facilities. The licensee also continues to maintain a number of fixed and portable gauges in secure storage (one portable gauge was still occasionally used on the premises).

The inspector toured the MiOps site, including facilities at 3901 South Saginaw Road. All areas were adequately posted, and all licensed material was adequately secured. Independent surveys found no residual contamination in unsealed material use areas, nor were any readings in excess of regulatory limits in the vicinity of fixed gauges, which were all adequately labeled and in good condition. The inspector interviewed unsealed material users, verified a selection of the licensee's inventory of stock solutions, and reviewed RSC approvals for use of unsealed material. The inspector also interviewed radiation safety staff to discuss lock-out/tag-out and installation/removal procedures for fixed gauges and reviewed a selection of records including those for source holder exchanges and installation surveys, physical inventories, leak tests, shutter checks, RSC meetings, personnel dosimetry, bioassays done in conjunction with limited radiosynthesis activities performed since the last routine inspection, waste incineration, as well as extensive internal and external audits of the radiation protection program including documentation and analysis of an August 2020 emergency exercise involving a postulated radiosynthesis contamination incident.

The inspector also reviewed the circumstances of and actions taken in response to a fixed gauge shutter found stuck in the open position (EN 55059 / NMED 210031). The inspector confirmed that the licensee's actions were effective at preventing additional moisture intrusion (likely from testing of a nearby fire suppression system) as no additional issues with this shutter have been noted since. Therefore the NRC considers this event closed. Note that possession of this device has since been transferred to Hemlock Semiconductor Operations (docket no. 030-37611).

Materials Inspection Record (Continued)

Signature and Date - Branch Chief

A handwritten signature in black ink, appearing to be 'R. Edwards', with a long horizontal line extending to the right.

Digitally signed by Rhex A. Edwards
Date: 2023.02.08 11:03:45 -06'00'