

November 17, 1995

Dow Chemical U.S.A
ATTN: Ms. S. B. Butts, Chairperson
Radiation Safety Committee
1602 Building
Midland, MI 48640

SUBJECT: ROUTINE SECURITY, MATERIAL CONTROL AND ACCOUNTABILITY, AND
EMERGENCY PREPAREDNESS INSPECTION OF THE DOW CHEMICAL RESEARCH
REACTOR

Dear Ms. Butts:

This refers to the routine Security, Material Control and Accountability, and Emergency Preparedness inspection conducted by Messrs. J. L. Belanger, T. Reidinger, and T. Young of this office on October 23-24, 1995. The inspection included a review of authorized activities for the Dow TRIGA Research Reactor. At the conclusion of the inspection, the findings were discussed with you and those members of your staff identified in the enclosed report.

Areas examined during the inspection are identified in the report. Within these areas, the inspection consisted of a selective examination of procedures and representative records, interviews with personnel, and observation of activities in progress.

Your overall response to the emergency response drill scenario was good. The security program was effectively implemented. Management attention appeared warranted in assuring the accuracy of material balance statements submitted to the NRC.

No violations of NRC requirements were identified during the course of this inspection.

In accordance with 10 CFR 2.790 of the Commission's regulations, a copy of this letter and the enclosed inspection report will be placed in the NRC Public Document Room. The attachment to the enclosed report concerns a subject matter which is exempt from disclosure according to Section 2.790 of the NRC's "Rules of Practice" Part 2, Title 10 Code of Federal Regulations. Consequently, the attachment will not be placed in the NRC Public Document Room.

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

Sincerely,

Original Signed by T. Ploski

James R. Creed, Chief
Plant Support Branch 1

Docket No. 50-264

Enclosure: Inspection Report
No. 50-264/95002(DRS)
(2.790 INFORMATION)

cc w/encl: W. Rigot, Reactor Supervisor

cc w/encl, w/o 10 CFR
2.790 INFORMATION: J. J. Havel, Technical Manager and
Chairman, Reactor Operations Committee
G. W. Bruchmann, Michigan Department
of Public Health
W. Vernetson, Director of Nuclear Facilities

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-264/95002(DRS)

Docket No. 50-264

License No. R-108

Licensee: Dow Chemical Company

Facility Name: Dow TRIGA Research Reactor Facility

Inspection At: Dow TRIGA Research Reactor Facility, Building 1602,
Midland, Michigan

Inspection Conducted: October 23-24, 1995

Inspectors: *T. Reindinger* 11-17-95
T. Reindinger Date
Fuel Cycle Inspector

6/27 *T. Belanger* 11/17/95
J. Belanger Date
Senior Physical Security Inspector

Thomas Young 11-17-95
T. Young Date
Health Physics Inspector

Approved By: *T. Creed* 11/17/95
6/27 J. Creed, Chief Date
Plant Support Branch 1

Inspection Summary

Inspection on October 23-24, 1995 (Report No. 50-264/95002(DRS))

Areas Inspected: Routine announced inspection of facility requirements specified in NRC regulations, license and Technical Specifications, including a review of the Emergency Preparedness Program (IP 40750); the Physical Security Program (IP 81401, 81402, 81431) and the Material Control and Accounting (MC&A) Program (IP 85102). The inspection involved three NRC inspectors.

Results: Of the areas inspected, no violations, deficiencies or deviations were identified. The overall status of the emergency preparedness, security and MC&A programs was excellent. The licensee's overall response to the drill scenario was good. Actions taken to minimize the simulated exposures to the onsite emergency workers and nonessential personnel was good. Response facilities were in a state of good operational readiness. The licensee's emergency preparedness program was being adequately maintained and continued

to have adequate management support. The physical barriers and alarm system were well maintained. Access control procedures and locking mechanisms were capable of preventing the unauthorized entry of personnel or materials. The licensee's program for controlling and accounting for receipt, storage, internal transfers, inventory, burnup-related measurements and calculations, shipments and records, and reports was adequate.

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DETAILS

1. Persons Contacted

Dow Chemical Company

- *S. B. Butts, Senior Research Manager and Chairman of Reactor Operations Committee
- *W. L. Rigot, Reactor Supervisor
- *T. J. Quinn, Senior Reactor Operator/Assistant Reactor Supervisor
- *J. D. Romick, Senior Reactor Operator/Assistant Reactor Supervisor
- *M. E. Buchmann, Senior Reactor Operator
- *J. A. Grappin, Radiation Safety Officer
- T. Bradley, Industrial Hygienist
- T. Thorington, Security Dispatcher

*Denotes those attending the exit meeting on October 24, 1995.

2. Emergency Preparedness Program (40750)

Emergency Drill

An emergency drill was held on October 24, 1995. The drill scenario involved a "simulated" fuel inventory inspection of special nuclear material during which the fuel tool holding an element failed. "Simulated" fission products gases were released into the pool and the reactor room after the impact of the fuel element against the bottom of the pool containment caused damage to the fuel element cladding.

Emergency notifications by the reactor operators (RO's) and the response by Dow Emergency Services (ES) personnel were excellent. The ES "Incident Commander" (IC) promptly established the offsite command center to coordinate emergency response activities with the Radiation Safety Officer (RSO) and the Emergency Director (ED). The IC, ED and RSO were knowledgeable in emergency procedures, and properly responded in the evacuation of the building and surrounding area. Mitigation efforts were well thought out. "Simulated" recovery actions included decontaminating the reactor room and recovering the fuel element. The RSO established appropriate contamination control measures that minimized exposures to the onsite emergency workers and nonessential personnel. Evaluations of the "simulated" emergency preparedness drill and evacuation effectiveness were excellent. Several types of radio communication concerns were among the items self-identified in the licensee's initial critique meeting. Other critique items were categorized as pertaining to procedures, training or equipment. The licensee indicated that several efforts were underway to correct areas identified in the critique.

No violations or deviations were identified.

3. Plans, Procedures, and Reviews (81401)

An inspector determined through an interview with the Reactor Supervisor that there were no changes to the physical security plan (PSP) since the last inspection (September 1992). The inspector's review of the PSP

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during this inspection showed that the plan was accurate in detail and that no revisions were necessary. The Reactor Supervisor stated that he periodically reviewed the security program.

4. Reports of Safeguards Events (81402)

An inspector verified through interviews that there were no incidents in which an attempt was made or was believed to have been made, to commit a theft of special nuclear material. The Reactor Supervisor was aware of his responsibility to report such incidents to the NRC in accordance with 10 CFR 73.71(b).

5. Fixed Site Physical Protection of Special Nuclear Material (SNM) of Low Strategic Significance (81431)

An inspector verified through observation that the licensee used and stored the SNM only within the Controlled Access Area (CAA) described in the physical security plan. The detection and surveillance systems provided early detection and assessment of unauthorized access or activities within the CAA. The alarm devices were adequate to allow the security organization to detect and respond to a threat.

6. Material Control and Accounting (85102)

A review of NRC Forms 741 and 742 accurately reflected the licensee's activities for the period following the last inspection. An inspector noted that the material status report (Form NRC-742) for the period 4/1/94 through 9/31/94 had incorrect reporting period dates of 5/1/94 through 10/1/94. The Reactor Supervisor agreed that the dates shown on the form were incorrect and agreed to submit a corrected version. The inspector noted that errors were made on the material status statements which were subsequently corrected. At the exit meeting, the inspector stressed the need to assure the accuracy of these reports prior to submission.

7. Exit Meeting

The inspectors met with the individuals denoted in Section 1 of this report at the conclusion of the onsite inspection on October 24, 1995. The inspectors summarized the scope and findings of the inspection and discussed their observations. The licensee was advised that the security program was well managed and implemented but that management attention was needed to assure the accuracy of material balance report. The licensee agreed with this assessment. During the course of the inspection and exit meeting, the licensee did not identify any documents or statements and references to specific processes as being proprietary.

Attachment: Material Balance Statement - Enriched Uranium for Period 4/1/92 to 9/30/95

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