

U.S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

REGION III

Report No. 50-264/77-02

Docket No. 50-264

License No. R-108

Licensee: Dow Chemical U.S.A.
1803 Building
Midland, MI 48640

Facility Name: TRIGA Reactor

Inspection At: TRIGA Site, Midland, MI

Inspection Conducted: July 19-22, 26, and 27, 1977

Inspector: *C. H. Brown*
C. H. Brown

8/17/77

Approved by: *W. S. Little*
W. S. Little, Chief
Nuclear Support Section

8/17/77

Inspection Summary

Inspection on July 19-22, 26, and 27, 1977 (Report No. 50-264/77-02)

Areas Inspected: Routine, unannounced inspection to review records, surveillance, procedures, operations, maintenance. Reactor startup and routine operation were observed. The inspection involved 24 inspector-hours onsite by one NRC inspector.

Results: No items of noncompliance were found in the areas inspected.

DETAILS

1. Persons Contacted

- *O. V. Anders, Reactor Supervisor
- *G. L. Kochanny, Lab Director
- A. J. Kamp, Assistant Reactor Supervisor
- *T. J. Quinn, Reactor Operator

*denotes persons attending management interview.

2. Procedures

The inspector's review of the facility's procedures revealed that the requirements of the Technical Specifications for written procedures were being met. Two procedures, Administrative Control and Reactor Startup, were reviewed by the inspector without comment. All the procedures had been reviewed and approved by the Reactor Operations Committee.

No items of noncompliance or deviations were identified.

3. Requalification Training

The performance of the requalification training program and the results of each operator's test and evaluation was reviewed. The program documentation indicates that the program has satisfactorily been maintained up-to-date. The operators completed written and orals satisfactorily. The licensee presently performed the program of the requalification training in January and February each year.

No items of noncompliance or deviations were identified.

4. Surveillance

- a. The records of surveillance performed at the facility were reviewed. No discrepancies were noted as compared to procedural requirements. The post-maintenance surveillance (no major maintenance) was the normal pre-startup surveillance which verifies that the Technical Specifications for minimum instrumentation and functional interlocks are met.
- b. The inspector commented on the 5 to 10 cent variations in core reactivity that shows up when the fuel elements are inspected. The licensee stated that maintaining the core approximately 50 cent less than maximum allowable excess reactivity and with the variation remaining consistently small, no further review was being considered at this time.

No items of noncompliance or deviations were identified.

5. Experiments and Irradiations

The irradiation forms completed during the past two years were reviewed on a random selection basis. Only one type was performed during this period - a small sample activation was noted. No discrepancies were indicated with record comparison to the procedural requirement. The number of irradiations performed remained approximately the same as noted in previous inspection periods. The pneumatic "rabbit" remained on a once-a-month or less frequency of use.

No items of noncompliance or deviations were identified.

6. Logs and Records

The licensee's logs and records were found to meet the license and Technical Specification requirements. Only minor errors in log keeping practices were noted and pointed out to the licensee.

No items of noncompliance or deviations were identified.

7. Internal Review

The inspector's review of the minutes of the Reactor Operations Committee indicated that the meetings were held as required and with a quorum. The internal audits appeared to be performing their control functions. The Committee reviewed these reports. The Committee also reviewed the event of the key in the unattended reactor console.

No items of noncompliance or deviations were identified.

8. Reactor Operating Personnel

The licensee had five new operators qualify during this inspection period. At the time of the inspection, eight persons had completed the requalification program.

9. Management Interview

The inspector met with the licensee representatives (denoted in paragraph 1) at the conclusion of the inspection on July 27, 1977. The licensee acknowledged the inspectors' comments on record keeping. The licensee confirmed that the present opinion is that no further review and evaluation is needed at this time on the 5 to 10 cent variations in reactivity that are noted from random fuel rotation.

AUG 25 1977

Docket No. 50-264-7723

Dow Chemical U.S.A.
ATTN: Dr. R. R. Langner
Radiation Safety Committee
1803 Building
Midland, MI 48640

Gentlemen:

This refers to the inspection conducted by Mr. W. B. Grant of this office on August 9-11, 1977, of activities at the Dow Nuclear Research Reactor authorized by NRC License No. R-108 and to the discussion of our findings with you and Mr. O. Anders at the conclusion of the inspection.

The enclosed copy of our inspection report identifies areas examined during the inspection. Within these areas, the inspection consisted of a selective examination of procedures and representative records, observations, and interviews with personnel.

No items of noncompliance with NRC requirements were identified during the course of this inspection.

In accordance with Section 2.790 of the NRC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations, a copy of this letter and the enclosed inspection report will be placed in the NRC's Public Document Room, except as follows. If this report contains information that you or your contractors believe to be proprietary, you must apply in writing to this office, within twenty days of your receipt of this letter, to withhold such information from public disclosure. The application must include a full statement of the reasons for which the information is considered proprietary, and should be prepared so that proprietary information identified in the application is contained in an enclosure to the application.

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Dow Chemical U.S.A.

- 2 -

AUG 25 1977

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

Sincerely,

James M. Allan, Chief
Fuel Facility and
Materials Safety Branch

Enclosure: IE Inspection
Report No. 50-264/77-03

cc w/encl:
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OFFICE	RIII <i>[Signature]</i>	RIII	RIII <i>[Signature]</i>	RIII <i>[Signature]</i>		
SURNAME	Grant/bk	Ess <i>[Signature]</i>	Allan <i>[Signature]</i>	Brown <i>[Signature]</i>		
DATE	8/24/77					

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REGION III

Report No. 50-264/77-03

Docket No. 50-264

License No. R-108

Licensee: Dow Chemical U.S.A.
1803 Building
Midland, MI 48640

Facility Name: TRIGA

Inspection at: TRIGA Site, Midland, MI

Inspection conducted: August 9-11, 1977

Inspector: *W B Grant*
W. B. Grant

8/24/77

Approved by: *T H Essig*
T. H. Essig, Chief
Environmental and Special
Projects Section

8/24/77

Inspection Summary

Inspection on August 9-11, 1977 (Report No. 50-264/77-03)

Areas Inspected: Emergency Planning, including a review of the Emergency Plan and implementing procedures; interviews with licensee personnel; visits to emergency support groups; reviewed training of support groups and results of quarterly evacuation drills. The inspection involved 15 inspector-hours on site by one NRC inspector.

Results: No items of noncompliance or deviations were identified.

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DETAILS

1. Persons Contacted

- *O. Anders, Reactor Supervisor
- *R. Langner, Chairman, Radiation Safety Committee
- T. Quinn, Reactor Operator
- K. Kelly, Reactor Operator
- R. Olson, Senior Radiation Safety Officer
- D. Barsten, Industrial Hygienist
- P. Heitzig, Fire Chief, Dow Chemical
- D. Ducommun, M.D., Medical Department, Dow
- M. Graham, R.N., Medical Department
- R. Westjohn, Chief, Plant Security
- N. Olney, Day Captain, Plant Security
- J. Weed, Plant Protection, Communications

*denotes those present at the exit interview.

2. Emergency Plan and Implementing Procedures

The emergency plan adopted by Dow Chemical was updated on April 15, 1977. The plan was submitted to NRR on that date and according to a licensee representative, Dow has been notified by the NRC that the plan is acceptable. The inspector reviewed the licensee's emergency plan and it appears to contain the major elements of emergency preparedness discussed in the proposed American National Standard "Emergency Planning for Research Reactors" (draft No. 4) (ANS-15.16, N17.2, dated April 1976). The licensee also has procedures for implementing the emergency plan which are included in the plant's overall emergency plan and the medical department's "First Aid for Radiation Victims".

No items of noncompliance were noted.

3. Coordination with Support Agencies

The inspector visited the licensee's Health Physics, plant protection fire and medical departments and discussed the arrangements made to provide assistance in the event of an emergency. Discussions with representatives of those departments showed that there was close coordination between them and the reactor staff.

No items of noncompliance or deviations were noted.

4. Facilities and Equipment

First aid supplies, radiation survey monitoring equipment, and supplied air respiratory protection equipment were examined for maintenance and operability. All equipment appeared to be maintained in a ready state.

The inspector found that the radiation survey meters in the reactor control room were operable and had been calibrated. The reactor room is equipped with a continuous air particulate monitor that has audible and visual alarms which are monitored by the reactor operators and also at the Plant Protection Communications Center.

No items of noncompliance were noted.

5. Medical Arrangements

In case of injury, personnel would be transported to the medical department which is approximately half a mile from the reactor facility. According to licensee representatives, transportation to the medical department would be provided by a fire department ambulance. The inspector visited the medical department and found it contained facilities for decontamination of injured personnel and procedures for retaining contaminated liquids.

According to licensee personnel, the medical staff would provide medical assistance to an injured contaminated person and the health physics staff would provide decontamination assistance.

No items of noncompliance or deviations were identified.

6. Drills and Training

The inspector discussed with licensee personnel the quarterly evacuation drill which is conducted in accordance with emergency plan. Records were reviewed and it was noted that the last drill took place on July 1, 1977. Records indicated that any weaknesses recognized during the drills are followed up and corrected.

The inspector reviewed documentation procedures and interviewed ten employees to verify that training in the emergency plan had been conducted. According to licensee representatives, training sessions are held at least annually and include lectures and

discussions in radiation safety, evacuation procedures and the use of self contained respiratory protection equipment. According to licensee representatives, training has been provided for approximately 80 plant protection personnel, 40 firemen, and 20 medical department personnel.

No items of noncompliance or deviations were identified.

7. Exit Interview

The inspector met with licensee representatives (denoted in Paragraph 1) at the conclusion of the inspection on August 11, 1977. The inspector summarized the purpose and the scope of the inspection and the findings.