



The Dow Chemical Company  
Midland, Michigan 48667

March 06, 2008

Document Control Desk  
United States Nuclear Regulatory Commission  
Washington D.C., 20555

Dear Sir;

Enclosed is the annual report for The Dow TRIGA Research Nuclear Reactor, Docket No. 50-264. If you have any questions, please contact me at (989) 636-6584.

Ward L. Rigot  
Facility Director and Reactor Supervisor  
Dow TRIGA Research Reactor

Enclosure

CC: Alexander Adams; USNRC  
Kevin Witt, USNRC  
Kevin Hool, 1897  
Thomas J. Quinn III, 1602  
Siaka O. Yusuf, 1602  
Bryan Haskins, 1602  
James R. Weldy, 1803  
Jay. D. Romick, 1897  
Michael E. Buchmann, 1776

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## DOW TRIGA RESEARCH REACTOR

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There was one US NRC inspection in 2007. It was performed by Kevin Witt between December 4<sup>th</sup> and 6<sup>th</sup>, 2007. This was a routine, announced inspection which included a review of activities authorized for the facility. The inspection focused on radiation safety programs, emergency and security programs. Review of ROC meeting minutes and selective examination of procedures and records were also performed. No safety concerns or noncompliance with US NRC requirements were found.

The normal in-house audits of the radiation protection program, safety and housekeeping, and records were also performed and the recommendations acted upon.

There were no significant changes to the facility during 2007. There were modifications to the security posture of the facility, which have been communicated to The US NRC.

#### A. Staff, Licenses, and Training

Mr. Ward L. Rigot continued serving as reactor supervisor and facility director of The DOW TRIGA Research Reactor. Dr. Kevin Hool continues to serve as first level manager for the facility. Mr. Thomas J. Quinn III remains as one of the designated alternates (assistant reactor supervisors) for the reactor supervisor. Dr. Siaka O. Yusuf and Mr. Bryan Haskins have been elevated to serve as the other designated alternates (assistant reactor supervisors).

W. L. Rigot	Reactor Supervisor and Facility Director
T. J. Quinn	Assistant Reactor Supervisor
S.O. Yusuf	Assistant Reactor Supervisor
B. D. Haskins	Assistant Reactor Supervisor

Licenses are current. Mr. Rigot's license was renewed in 2005, while that of Dr. Yusuf was renewed in 2006. Mr. Haskins received his Senior Reactor Operator's license in 2006. Mr. Quinn's license has been restricted to non solo operation effective December 2007 by the NRC. All operators are current in their required medical examinations; which were taken during 2006 and 2007. Mr. Rigot, at the 4<sup>th</sup> quarter ROC meeting in 2007, announced his intention to retire effective March 10<sup>th</sup> 2008.

The current two-year re-qualification program was completed in the 1st quarter 2008. All operators are up-to-date in their quarterly re-qualification participations, including operating experience, participation in emergency preparedness drills, Reactor Operation Committee meetings, operating examinations, and the annual fuel inventory.

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Operation of the reactor is an important part of the training program, since this reactor is operated on an as-needed basis, which results in numerous operations each involving reactivity manipulations, use of the control console, placement and retrieval of samples and handling of radioactive materials. The reactor was operated for a total of 405 hours during 2007. Furthermore, each licensee performed about 1/4 of the daily checkout procedures, during the time that their license was active and at least three monthly checkout procedures.

Mr. James R. Weldy is the Radiation Safety Officer and sits as a member of the Reactor Operations Committee. Mr. Jerry Cassidy continues as the Health Physics Technician for the Midland Area and assists in support of the reactor facility. The entire composition of the Reactor Operations Committee is listed below.

K. Hool	Chairman
W. L. Rigot	Reactor Supervisor and Facility Director
J. R. Weldy	Radiation Safety Officer
T. J. Quinn	Assistant Reactor Supervisor
J. D. Romick	Senior Analytical Specialist
M. E. Buchmann	Senior R&D Leader

Dr. Hool is the Segment Leader for the Core Technology group within the Dow Global Analytical Sciences Laboratory. Mr. Rigot reports, administratively, to Dr. Hool. Mr. Weldy is the Dow Midland location Radiation Safety Officer as well as the TRIGA Radiation Safety Officer and reports through the Dow Environmental, Health and Safety department. Dr. Romick reports through the Emulsion polymer Business with the Specialty Chemicals and Plastics portfolio. Mr. Quinn reports through The Global Analytical Sciences Organization and Mr. M. E. Buchmann reports through the Research and Engineering Services Capability.

#### B. Reactor Operating Experience

The reactor was operated for 2.0 Megawatt-days during 2007 for a total of 405 hours. Operational experience is about the same as 2006. The main purpose of operations at the Dow facility is to perform neutron activation analysis. About 8800 experiments were irradiated in 2007.

#### C. Major Changes

There were no major changes to the facility in 2007 and there were no changes to the facility procedures.

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D. **Unscheduled Shutdowns**

There were 14 unscheduled shutdowns (scrams) during 2007. Of these, 11 were due to losses of computer function. The most common malfunction is still with the DIS064 device which processes the digital signals into the DAC computer. The vendor is working on solution to this situation. There were 3 shutdowns which occurred due to high power indications on the safety channels. One of them was attributed to power excursion at 250kW, another was due to instrument failure and the third one was due to operator error.

E. **Major Preventive and Corrective Maintenance of Safety Significance**

There was no maintenance, which had safety significance performed during 2007. There were 14 preventive and corrective maintenance items, four of them were replacement of water purification cartridge and three were on the NM1000 safety channel. Also there were three maintenance items on the SR1 closed loop cooling system. The other four items were replacement of the vanes in the CAM pump, replacement of the primary pressure sensors, and tightening of shim1 screws.

F. **Radioactive Effluents**

The only radioactive material normally released to the environment from the facility is argon-41, which is produced from activation of the natural argon dissolved in the pool water and subsequently escapes from the pool into the reactor room and from there to the outside of the building, and from the natural argon present in the air used to transport samples from a laboratory into a terminus in the core of the reactor.

G. **Radiation Exposures**

Radiation exposures received by facility personnel and visitors are monitored using film badges and thermoluminescent detectors. No persons have received exposures approaching 25% of those allowed or recommended in 10CFR20.

**W. L. Rigot**  
**Facility Director and Reactor Supervisor**  
**Dow TRIGA Research Reactor**  
**06 March 2008**