



The Dow Chemical Company
Midland, Michigan 48667

March 27, 2002

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.

A handwritten signature in black ink that reads "Ward L. Rigot". The signature is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

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

Enclosure

CC: Alexander Adams; USNRC
Stephen Holmes, USNRC
Richard Wagner, 1897
Stan Dombrowski, 1803

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DOW TRIGA RESEARCH REACTOR

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There was one US NRC inspection in 2001. The inspection took place June 17, 2001 through June 20, 2001. Stephen W. Holmes, Reactor Inspector from Non-power Reactors and Financial Section, Operational Experience and Non-Power Reactors Branch performed a routine, announced inspection which included onsite review of selected aspects and activities since the last NRC inspection of the following: Organizational Structure and Functions, Experiments, Review and Audit, Operations, Fuel Handling, Operator Requalification, Surveillance, Maintenance, Design Control, Procedures and Security. There were no violations of NRC regulations noted in the inspection report. There were two follow-up items, one related to interpretation of Technical Specifications about surveillance requirements during periods of extended shutdown and the second addressed apparent mismatches between written administrative procedures and common practices. Both items were discussed during Reactor Operation Committee meetings and actions are being taken to address the issues raised during the inspection. An outside consultant conducted the required annual audit; recommendations were made and the Reactor Operations Committee has responded to these recommendations. 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 2001.

A. Staff, Licenses, and Training

Ward L. Rigot continued serving as reactor supervisor and facility director of The DOW TRIGA Research Reactor. Susan Butts was replaced by Richard A. Wagner as first level manager for the facility. Thomas J. Quinn III and Michael E. Buchmann remain as the two designated alternates (assistant reactor supervisors) for the reactor supervisor. Jay D. Romick chose to allow his license to lapse and will no longer remain on staff beginning January 1, 2001. Josh Caldecourt joined the staff as a student trainee. The staff consists of four Senior Reactor Operators, who are listed below.

W. L. Rigot	Reactor Supervisor and Facility Director
T. J. Quinn	Assistant Reactor Supervisor
M. E. Buchmann	Assistant Reactor Supervisor
S.O. Yusuf	Senior Reactor Operator

Licenses are current. Rigot's and Quinn's licenses were renewed in 1999, while Buchmann's license was renewed in 1997. Siaka O. Yusuf received his Senior Reactor Operator's license in 2000. All operators are current in their required medical examinations; which were taken during 2000.

The current two-year re-qualification program started in the second quarter 2000 and will be completed during 2002. The SROs are current with operating experience and participation in emergency preparedness drills, Reactor Operation Committee meetings, an annual operating examination, 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 minimum experience of an operator during 2001 was 21.8 hours of actual operating time, and the maximum experience was 162.3 hours of actual operating time. Furthermore, each licensed person performed about 1/4 of the daily checkout procedures and at least two monthly checkout procedures.

J. A. Grappin remains the Radiation Safety Officer and sits as a member of the Reactor Operations Committee. Jerry Cassiday continues as the Health Physics Technician for the Midland Area and assists in support of the reactor facility. Jay D. Romick was added to the committee as an expert in reactor operations. The entire composition of the Reactor Operations Committee is listed below.

R. A. Wagner	Chairman
W. L. Rigot	Reactor Supervisor and Facility Director
J. A. Grappin	Radiation Safety Officer
T. J. Quinn	Assistant Reactor Supervisor
T. D. Lickly	Senior Technical Leader
J. D. Romick	Senior Analytical Specialist

R. A. Wagner is the Resource Leader for the Atomic Spectroscopy and Inorganic Analysis (ASIA) Discipline within the Global Analytical Sciences Laboratory (GAS); W. L. Rigot and T. J. Quinn report administratively to Wagner; J. A. Grappin is the Dow Midland location Radiation Safety Officer as well as the TRIGA Radiation Safety Officer and reports, as does T.D. Lickly, to the Dow Environmental, Health, Safety and Security department. J. D. Romick reports through The Global Analytical Sciences Organization.

B. Reactor Operating Experience

The reactor was operated for 2.63 Megawatt-days during 2001 for a total of 418.0 hours. Operational experience is higher than recent years. The main purpose of operations at the Dow facility is to perform neutron activation analysis. The number of experiments introduced into the facility grew from approximately 8400 to 9500, an increase of ~ 13%.

C. Major Changes

There were no major changes to the facility, which required 10CFR50.59 review. There were several changes to the facility procedures, related to security due to the September 11, 2001 incidents.

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D. Unscheduled Shutdowns

There were 35 unscheduled shutdowns (scrams) during 2001. Of these, 32 were due to losses of computer function. The most common malfunction occurred with the DIS064 device which processes the digital signals into the DAC computer. The vendor has been asked to address this situation, but as of the end of 2001, there has not been a successful solution provided. The frequency of these types of shutdowns is similar to last year, after the computers were upgraded. It is important to note that the frequency of unscheduled shutdowns does not reflect any safety concerns, but is a source of operational inconvenience. The 3 other shutdowns occurred due to high power indications on the safety channels. 2 shutdowns occurred during training of our student operator, while the other occurred during startup by one of the senior reactor operators. The LCOs initiated as intended and no safety issues were noted. This one shutdown occurred over a time frame where there were approximately 1100 reactor startups and demonstrates excellent operator discipline.

E. Major Preventive and Corrective Maintenance of Safety Significance

There was no maintenance, which had safety significance performed during 2001. Three maintenance items were performed on safety related systems during 2001. The first involved replacement of the water radioactivity detector and monitor. It was noticed that the output from the detector was not stable and the detector was replaced with an existing GM detector and meter system. The other two maintenance items were performed on the regulating rod drive system. It was noted that the regulating rod would not move during an intended operation. An investigation found that the drive chain had slipped off the gear. The chain was replaced and the operation of the drive was verified prior to subsequent operations. The other maintenance item performed on the regulating rod was needed when the information displayed on the CSC monitor did not match what was expected. The rod was travelling but the magnet contact indication was not indicated. The down position switch was adjusted to give the proper indication.

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.

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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.

A handwritten signature in black ink, appearing to read "W. L. Rigot". The signature is fluid and cursive, with the first name "W. L." and the last name "Rigot" clearly distinguishable.

W. L. Rigot
Facility Director and Reactor Supervisor
Dow TRIGA Research Reactor
27 March 2002