The Dow Chemical Company
Midland, Michigan 48667

February 27, 2013

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) 638-6185.

Paul J. O'Connor
Facility Director
Dow TRIGA Research Reactor

Enclosure

CC: Geoff Wertz; USNRC
Wayde Konze, 1897
Siaka O. Yusuf, 1602
Bryan Tomlin, 1602
Bryan Haskins, 1602
James R. Weldy, 1803
Jay. D. Romick, 1707
Michael E. Buchmann, 433
Paul O'Connor, 1897

A020
NRR

DOW TRIGA RESEARCH REACTOR

ANNUAL REPORT - 2012

There was one US NRC inspection in 2012 and there were no violations found. The annual peer review audit was conducted by Prof. Mike Hartman of The University of Michigan in October of 2012. The audit looked at all aspects of the Dow TRIGA nuclear reactor facility programs and there were no safety concerns or non-compliances with US NRC requirements 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 2012. There were no staff changes during the year, 2012.

A. Staff, Licenses, and Training

Dr. Tomlin, a trainee on staff since 2011, obtained an Instant SRO license in April 2012. The current reactor staff members are:

P. J. O'Connor	Facility Director
S. O. Yusuf	Reactor Supervisor
B. D. Haskins	Assistant Reactor Supervisor
B. E. Tomlin	Senior Reactor Operator

Operator licenses are current. Dr. Yusuf renewed his Senior Reactor Operator's license in 2012. Mr. Haskins renewed his Senior Reactor Operator's license in 2012.

The current two year re-qualification program started in the 1st quarter of 2012, and will end in 4th quarter of 2013. 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.

Operation of the reactor is an important part of the training program, thus, the reactor is operated on an as-needed basis which results in numerous operations. Each operation involves 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 305 hours during 2012 by the three Senior Reactor Operators.

There were no membership changes to the Reactor Operations Committee (ROC) during the year, 2012. The ROC is currently composed of the following staff members:

W. V. Konze	ROC Chairman
P. J. O'Connor	Facility Director
S. O. Yusuf	Reactor Supervisor
J. R. Weldy	Radiation Safety Officer
J. D. Romick	Research Leader Dow R&D
M. E. Buchmann	Associate Quality Director

Dr. Konze is the first level manager for the facility on behalf of Analytical Sciences and serves as the chairman for the ROC. Dr. O'Connor is the level 2 manager and facility director. Dr. Yusuf is the reactor operations staff member of the ROC. 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 is a Research Leader and reports through the Dow Coating Materials R&D. Mr. M. E. Buchmann is an Associate Quality Director and reports through the Dow Manufacturing and Engineering.

B. Reactor Operating Experience

The reactor was operated for 1.5 Megawatt-days during 2013 for a total of 305 hours. Operational experience is similar to recent years. The main purpose of operations at the Dow facility is to perform neutron activation analysis. About 8050 samples were irradiated in 2012.

C. Major Changes

There were no major changes to the facility in 2012 and there were no changes to the facility procedures.

D. Unscheduled Shutdowns

There were 19 unscheduled shutdowns (scrams) during 2012, down from 2011 numbers. Most of these 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 a solution to this situation.

E. Major Preventive and Corrective Maintenance of Safety Significance

There was no maintenance which had safety significance performed during 2012. There were however, 13 preventive and corrective maintenance items. These are related to replacements of water purification cartridges, adjustments on the NM1000 safety channel, adjustments on the NPP1000 safety channel, adjustment on a limiting switch, replacement of the high resolution monitor, clearing defective poly-capsules from the pneumatic system.

F. Radioactive Effluents

The only radioactive material normally released to the environment from the facility is argon-41. This 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. Ar-41 is also produced from the natural argon present in the air used to transport samples from a laboratory into a terminus in the core of the reactor.

Overall, any release, after dilution is estimated to be less than 25% of the allowed or recommended maximum concentration in 10CFR20.

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.

P. J. O'Connor
Facility Director
Dow TRIGA Research Reactor
February 27, 2012