



The Dow Chemical Company
Midland, Michigan 48667

February 29, 2016

Document Control Desk
United States Nuclear Regulatory Commission
Washington, DC 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 Yusuf, 1602
Bryan Haskins, 1602
Britt Vanchura, 1602
James Weldy, 1803
Jay Romick, 1707
Michael Buchmann, 1897
Paul O'Connor, 1897

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IE47
NRR

DOW TRIGA RESEARCH REACTOR

ANNUAL REPORT - 2015

The annual peer review audit was conducted by Mr. Joseph Talnagi of Ohio State University (Retired) in December of 2015. The audit examined 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 regular in-house audits of the radiation protection program, safety and housekeeping, and records were also performed and there were no issues found.

There were no significant changes to the facility during 2015. There was, however, one staff change during the year, 2015.

A. Staff, Licenses, and Training

The current reactor staff members are:

P. J. O'Connor	Facility Director
S. O. Yusuf	Reactor Supervisor
B. D. Haskins	Assistant Reactor Supervisor
B. B. Vanchura	Trainee

There are two Senior Reactor Operators and their 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 annual re-qualification program was carried out according to the NRC approved program, dated September 6, 2011. 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 284 hours during 2015 by the three Senior Reactor Operators, up to March of 2015 and by two Senior Reactor Operators the rest of the year.

DOW TRIGA RESEARCH REACTOR

ANNUAL REPORT - 2015

There were no membership changes to the Reactor Operations Committee (ROC) during the year, 2015. 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	Process Analytical Global Leader

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 the facility director. Dr. Yusuf is the level 3 manager and the reactor supervisor for the facility. 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 a Process Analytical Global Leader and reports through the Dow Global Process Analytical. Romick and Buchmann serve as the outside members, (neither members of reactor operation nor members of analytical sciences), of the ROC.

B. Reactor Operating Experience

The reactor was operated for 1.396 Megawatt-days, about the same as last year, during 2015 for a total of 284 hours (A decrease of 10% from last year). Operational experience is being optimized as indicated by these numbers. The main purpose of operations at the Dow facility is to perform neutron activation analysis. About 7,173 samples were irradiated in 2015, down by 1.3% from last year, 2014. A decrease of 10% in hours of operation followed with only a decrease of 1.3% in number of experiments show a net productivity increase of at least 8% for the Dow TRIGA Research Reactor.

C. Major Changes

There were no changes made to the facility in 2015.

D. Unscheduled Shutdowns

There were 11 unscheduled shutdowns (scrams) during 2015, slightly up from 2014 numbers. All of these scrams were due to a computer function, specifically, the DIS064 device which processes the signals into the DAC computer. Even though this is only an operational nuisance and rarely happens at steady power, the vendor has been requested to work on a solution to this situation.

DOW TRIGA RESEARCH REACTOR

ANNUAL REPORT - 2015

E. Major Preventive and Corrective Maintenance of Safety Significance

There was no maintenance which had safety significance, performed during 2015. There were however, only 9 preventive and corrective maintenance items during 2015. These were related to replacements of water purification cartridges, adjustments on the NM1000 safety channel, adjustments on the NP1000 safety channel, and Heat exchanger routine valve inspection.

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.

H. Outside Sampling and Monitoring

There were no incidences requiring outside sampling or monitoring during the year 2015.

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