



*The*  
**University of Oklahoma**

**SCHOOL OF AEROSPACE, MECHANICAL  
AND NUCLEAR ENGINEERING**

865 Asp Avenue, Room 212  
Norman, Oklahoma 73019  
(405) 325-5011

December 10, 1982

Mr. G. L. Madsen  
Chief  
Reactor Project Branch 1  
Nuclear Regulatory Commission  
611 Ryan Plaza Drive  
Suite 1000  
Arlington, TX 76011

Dear Mr. Madsen:

In accordance with the provisions of Section 2.201, Part 2, Title 10, Code of Federal Regulations, we are responding to your letter dated November 11, 1982 and received by us on November 15, 1982. These letters concern the inspection of Messrs. Schum, Redano, and Murphy on September 13-15, 1982 and the subsequent visit of Messrs. Gagliardo and Redano on October 7, 1982. As required, we shall respond to the specifics contained in the Notice of Violation -Appendix A. Before that response, we wish to convey to you the framework in which our response is made.

Please consider the following:

1. The University of Oklahoma has operated the AGN Reactor since the first license was granted in 1958.
2. The pool-type reactor is currently licensed to operate at 15 watts.
3. This past fiscal year the reactor has operated 32 times. A number of these operations were at 1 watt or below.
4. There are two licensed operators (Mr. James and Dr. Terrell). Both hold SRO licenses. Mr. James has been licensed since 1963. Dr. Terrell has been licensed on three different reactors beginning in 1956. These two have conducted all reactor operations, including loading and unloading of samples. Both are present almost without exception during all reactor operations.
5. In August of 1982, a full-time Radiation Safety Officer (Dr. Paul Skierkowski) was hired and is fully operational. Much of his attention (and his health physics technician) is now devoted to the reactor's operation.

6. In November 1982, Professor Craig Jensen was formally appointed to the reactor staff with a reduction in his teaching duties. The reactor staff is now composed of

Dr. Terrell, Director (1/8 time)  
Professor Jensen, Assistant Director (1/4 time)  
Mr. James, Reactor Supervisor (1/2 time)

We note that Professor Jensen has reactor operating experience on the TRIGA and AGN reactors at the University of Utah. In addition, Professor Jensen has the specific assignment of further organizing the framework which insures compliance with all aspects of the Code of Federal Regulations regarding operation of the facility. We consider this appointment a highly positive response, both in spirit and content, to the Notice of Violation.

7. We believe that the University of Oklahoma has in place a functional management control structure, through the Reactor Safety Committee (RSC), Radiation Safety Committee, Reactor Director and the Director of the School of Aerospace, Mechanical and Nuclear Engineering (AMNE). We believe that this management control structure must be "tightened". Two steps have already been implemented.
  - a. The reactor supervisor at the first of each month issues a Compliance List of items which must be completed within the month (see attachment A). He also notes whether all previous month's items were completed. This list will be monitored by the reactor safety committee and the Director of AMNE. Failure to complete any item will result in an immediate conference with the Reactor Director. A written record of this action will be made and become part of the RSC minutes. Professor Jensen will work with the Reactor Supervisor to ensure that the monthly list of compliance is, in fact, complete.
  - b. Professor Jensen has undertaken an audit of the requalification program and surveillance requirement in the technical specifications. The required written tests for the two operators were conducted on 9/29-9/30 and the operating (practical) tests on 9/23. Upon approval of the new requalification program, submitted as part of the license renewal, Professor Jensen will be responsible for conducting the program.
8. Finally, we wish to state that, while acknowledging mistakes, all parts of the operating and management structure associated with the reactor operate in good faith and fully support a full compliance principal. We offer assurances that the NRC may count on our best efforts.

RESPONSE TO APPENDIX A

NOTICE OF VIOLATION

Violation 1 - T.S. 7.1.4 requires audits be performed in the area of equipment performance. (8201-01)

This T.S. states that the Reactor Safety Committee will audit four (4) areas concerned with operations

- a. Procedures
- b. Reactor Operations and Maintenance
- c. Equipment Performance
- d. Records

Audits conducted were labeled:

- a' Procedures and Experiments
- b' Reactor Operation Log Book
- c' Master Maintenance Log
- d' Experiment and Sample Irradiation Records

We regret the lack of correlations in title but the latter have been used for several years. We wish to suggest that the required audits were conducted. Specifically,

- a' covers a
- b' covers b (Reactor Operations)
- c' covers b (Maintenance) and c (equipment performance)
- d' covers d

The Master Maintenance Log is kept as a "diary". Everything in connection with repairs, replacement, modification and calibrations are noted in this log. Therefore, our contention is that equipment performance is audited through the audit of the master maintenance log.

To avoid future confusion, at the January meeting of the RSC, it will be proposed to designate the audits to be performed as follows:

1. Reactor Operations
2. Reactor Maintenance

### 3. Facility Procedures

### 4. REQUALIFICATION PROGRAM

Please note that the REQUALIFICATION program has been singled out as a new item of special audit. These changes will be submitted to the NRC.

In view of the above, we request that the NRC reconsider the question of whether a violation did occur. Also, please note that the operating TS is 7.1.4 not 7.1.6 as stated in the Notice of Violation.

#### Violation 2

TECHNICAL SPECIFICATION 7.2 requires that detailed procedures shall be provided and followed. (8201-02)

- a. "Security Alarm System will be tested weekly." We can only state that our interpretation of "weekly" has consistently been that the test must be conducted once during each week, any day in each week. The same reasoning is applied to the monthly test of the building evacuation alarm. As you can appreciate the University closes down during certain periods, for example, the building alarm may be tested near the end of November and again in early December, because of the extended break between the end of the fall semester and the resumption of classes on January 18th. The next test may be near the end of January. Past inspectors have accepted this philosophy. We request that this interpretation be allowed to continue. However, until we have the NRC response, we will test the security alarm every seven days.
- b. "Calibration Procedure for the air monitor of AGN-211 Nuclear Reactor" was not entered in the MMLB. This was an oversight. We note that the correct entries were made in the air monitor record book.
- c. Semiannual calibration of the log N chart recorder was not entered in the instrument's record book. We acknowledge this oversight and note that the proper record was posted in the MMLB.

To avoid omissions such as b and c above, the reactor supervisor has been instructed to make all required records at the same time and immediately after the task is accomplished. We will also attempt to adjust our own audits to detect omissions such as b and c above.

#### Violation 3 - Change in sprocket on safety rod drive (8201-03)

After the sprocket was replaced, an entry was made in the MMLB that the unit (safety rod drive system) was tested. No details of the tests were documented. No test procedure was prepared. We acknowledge improper procedure and will treat the preparation of a test procedure as an unreviewed

safety question. We fully appreciate that any design change to the facility requires approval, records and a written test procedure. We did not view the sprocket change as a design change. We agree that it is.

Violation 4 - Requalification Program (8201-04)

We acknowledge failure to conduct a formal practical operator exam over the period of July 1981 to September 1982. This test has not been properly documented since 1978. We note that both licensed operators took the practical test 9/23/82. To ensure that these exams are conducted annually as required, Professor Jensen, as part of his overall monitoring of the requalification program, will monitor the tests and record the results. The RSC will be informed upon completion. As soon as the new requalification program is approved, Professor Jensen will be responsible for conducting the required reviews.

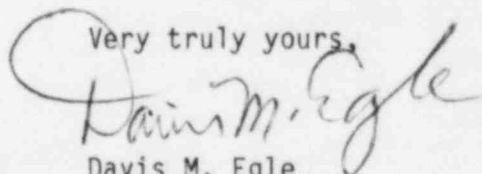
We regret the difficulty with the requalification program and are confident these steps will correct the problem.

Finally, we indicate that our attention will continue to be directed to the open items listed in paragraph 15 and not previously discussed. In connection with open item 8101-03, we attach the new procedure which will be submitted to the RSC at the January 1983 meeting. Regarding open item 8101-03, new forms are under review and are expected to be approved at the January 1983 meeting of the RSC. Copies of these forms will be forwarded to your office.

Regarding open item 8101-02 we ask that further definition be postponed until operation at 100 watts has been established and the pool water activity measured. At that time a "normal operating activity" can be established.

We thank you for your assistance and again indicate that our intentions are to practice the fullest possible compliance.

Very truly yours,



Davis M. Egle  
Director, AMNE

DME/tdg

cc Dr. M. Jischke, Dean of Engineering  
Dr. C. W. Terrell, Reactor Director  
Professor C. Jensen, Assistant Reactor Director  
Dr. E. Klehr, Chair, RSC  
Mr. J. James, Reactor Supervisor



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TO: Dr. Terrell (Reactor Director)  
Dr. Jensen (Reactor Staff)  
Dr. Klehr (Chairman, RSC)

FROM: Johnny James, Reactor Supervisor *JJ*

SUBJECT: Items to be done in November

DATE: November 1, 1982

The following items are to be completed by the dates indicated for the month of November, 1982.

- 1) Security Alarm System (J. James)  
November 2, 9, 16, 23, 30
- 2) Reactor Pool Resistivity Check (J. James)  
Sometime during the month of November
- 3) Emergency Evacuation System Test (J. James)  
On or before November 30

All items from October's list have been completed.

If you have any question, please contact me.

JJ/kw

cc Dr. Egle