



UNITED STATES  
 NUCLEAR REGULATORY COMMISSION  
 REGION II  
 101 MARIETTA STREET, N.W.  
 ATLANTA, GEORGIA 30303

DEC 06 1982

Report Nos. 50-62/82-01 and 50-396/82-01

Licensee: University of Virginia  
 Charlottesville, VA 22901

Facility Name: UVAR and Cavalier

Docket Nos. 50-62 and 50-396

License Nos. R-66 and R-123

Inspectors:	<u>A. K. Hardin</u>	<u>12/2/82</u>
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	<u>C. W. Hehl</u>	<u>12/3/82</u>
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Approved by:	<u>P. R. Bemis for</u>	<u>12/3/82</u>
	P. R. Bemis, Section Chief, Division of Projects and Resident Programs	Date Signed

SUMMARY

Inspection on November 15-17, 1982

Areas Inspected

This routine, unannounced inspection involved 32 inspector-hours on site in the areas of logs and records, review and audit, requalification training, procedures, surveillances, experiments, and open items.

Results

Of the seven areas inspected, no violations or deviations were identified in five areas; three violations were found in two areas (requalification training - paragraph 7 and procedures - paragraph 8).

## DETAILS

### 1. Persons Contacted

#### Licensee Employees

- \*R. Allen, Chairman, Radiation Safety Committee
- \*H. Berk, Radiation Safety Officer
- \*J. Farrar, Reactor Supervisor
- \*B. Hosticka, Senior Reactor Operator
- \*C. Bly, Senior Reactor Operator
- \*P. Benneche, Senior Reactor Operator

\*Attended exit interview

### 2. Exit Interview

The inspection scope and findings were summarized on November 17, 1982, with those persons indicated in paragraph 1 above. The apparent items of noncompliance with regulations were discussed and acknowledged by the licensee.

### 3. Licensee Action on Previous Enforcement Matters

Not inspected.

### 4. Unresolved Items

Unresolved items were not identified during this inspection.

### 5. Reactor Tour, Organization, Logs, and Records

#### a. Log Books, UVAR Pool Reactor

Log books No. 19, for the period September 19, 1981 to October 25, 1981 and No. 20 for the period October 26, 1981 to July 22, 1982, were reviewed. The logs were considered adequate. Log Book No. 20 recorded 37 reactor scrams for the period October 29, 1981 through July 21, 1982, of which 15 were due to loss of building power. These events were discussed with the licensee. The licensee stated their evaluation of the large number of reactor trips did not indicate a significant safety problem. The UVAR rod trip circuits are sensitive to voltage and frequency variations and the large number of trips results from weather initiated power supply instability or power fluctuation on the incoming power grid.

The inspector noted also that during a period of approximately 15 days that more than 30 different people had manned the reactor console. The inspector determined that the licensee had 35 licensed operators at the time of the inspection. Thus the basis for the large number of people

manning the UVAR reactor controls was adequately demonstrated. The inspector had no further questions in this area.

b. Log Books, Cavalier Reactor

Log book No. 2 for the period September 8, 1981 to October 27, 1982 was reviewed. The data contained in the log book was considered an adequate record of reactor operation.

Eighteen reactor trips were recorded for the period September 22, 1981 to October 14, 1982. Six of these were high power trips at 55 watts. The inspector questioned the cause of the relatively large number of trips at high power. The licensee stated that in several of these events, the operator deliberately allowed the power to rise to the high trip as a demonstration of the trip function for students. Since licensed power is 100 watts, no safety significance is attached to this type of operation. No further questions were raised by the inspector.

c. Reactor Tour

The inspectors toured the UVAR and Cavalier facility. The housekeeping for the control room and reactor room for the Cavalier was considered satisfactory. The housekeeping for the reactor pool area and the ground level of the UVAR facility was considered inadequate. At the exit interview the inspector discussed the condition of the facility with the licensee. The licensee acknowledged that housekeeping needed improvement and within the next month they expected to be able to expend additional manpower and effort to improve the housekeeping in the designated areas.

6. Review and Audit

Reactor Safety Committee (RSC) meeting minutes between November 1981 and September 1982 were reviewed. The Reactor Safety Committee met Technical Specification requirements in the areas of membership makeup, meeting frequency, audits and items reviewed. During review of the audit however, the inspector concluded that the Health Physics audit reported in the RSC meeting of July 19, 1982 appeared to deal only with the adequacy of procedures and did not address implementation of these procedures. This inadequacy was discussed during the exit interview and appears to be a contributing factor to the noncompliance cited in paragraph 8.

7. Requalification Training Program

The licensee's program for requalification of licensed operators was reviewed. The requalification program applied to both the UVAR and the Cavalier reactors. The technical aspects of the requalification program in terms of lecture content, written examinations, and operators' responses to examination questions were considered adequate. Two administrative areas did not appear, in one case to meet the requalification program requirements, and in another case to meet the licensee's procedure written to

support the program. The requalification program requires the Operations Manager (who administers the program) to make periodic independent evaluations of each individual by observing the individual's performance and the evaluation results noted in the individual's file. In review of numerous licensed operator files, the inspector determined that no evaluations of the type described in the requalification program were being noted in the individual's files.

In the second case, the licensee had committed in their procedure supporting the requalification program to maintaining a "Review Log" with up-to-date procedures, facility design changes or proposed changes and the student operator will check off once per month that all entries had been reviewed. This requirement has not been met in that an audit of the review log indicated that several procedure revisions were not included in the review log and had not been reviewed by the operator.

These items were discussed with the licensee, who acknowledged the occurrence of these events. The combined items are cited as noncompliance with the requalification training program. (50-62, 396/82-01-01).

A further item related to the licensees requalification procedure was observed as apparently deficient. Under a section of the procedure labeled "Lectures and Drills" it is stated, "if a lecture is missed, a makeup, written or oral quiz will be given and noted". Requalification records for the period November 20, 1981 to June 30, 1982 showed six licensed individuals in the program had missed a total of 16 lectures. There were no records of written or oral quizzes observed in the records by the inspector. This observation was brought to the attention of the licensee at the exit interview. The licensee stated the belief that makeup quizzes had been given and that the records were deficient. The inspector stated the item would be left open pending a subsequent inspection (50-62, 396/82-01-02).

## 8. Procedures

The inspector reviewed selected operation, maintenance and emergency procedures for compliance with Technical Specifications. The procedures reflected a content and scope adequate to control safety-related operations. The inspector observed the performance of pre-startup Daily Check List and a reactor startup. The inspector noted the following discrepancies.

- a. Technical Specification 6.3 requires that written procedures, reviewed and approved by the Reactor Safety Committee, shall be in effect and followed.

UVAR Standard Operating Procedure (SOP), chapter 10, paragraph 9 entitled "Controlled Areas and Noncontrolled Areas", defines the reactor bridge and areas marked on the floor where routine work involving pool water is performed as "Controlled Areas". Additionally, chapter 10 of the SOP requires swipes surveys to be made in all controlled areas by the user each day they are used, to ensure that the loose surface contamination is less than 200 dpm/100 cm<sup>2</sup>. During the

conduct of pre-startup and startup activities in controlled areas on November 15 and 16, 1982, required daily swipe surveys of these areas were not performed. This is a violation of Technical Specification 6.3 (50-62/82-01-03).

- b. Technical Specification 6.5 requires that records shall be kept in a manner convenient for review and shall be retained for the indicated period. Technical Specification 6.5.1 requires that changes to operating procedures be retained for 5 years. A review of temporary procedures and procedure changes during the inspection revealed that although these changes had received the required review and approval, they were neither retained for the required 5 years nor maintained in a manner convenient for review. This is a violation of Technical Specification 6.5 (50-62/82-01-04 and 50-396/82-01-03)

#### 9. Surveillances

The inspector reviewed the surveillances conducted by the licensee. The procedures and related administrative requirements were satisfied. The inspector had no further questions.

#### 10. Experiments

The inspector reviewed selected experiment records. The experiment logs were complete and up to date and the experiments were conducted in accordance with licensee procedures. In the area of review and approval of "new" experiments, the inspector had the following documentation concern.

As specified in the UVAR SOP, section 6, reactor irradiation requests are submitted on an Irradiation Request Form, which coupled with an Irradiation Log entry, constitute the record of experiments performed. UVAR SOP, section 6.1, requires all new types of experiments to be approved by the Reactor Safety Committee. Technical Specification 6.2.3(1) requires that new experiments, as determined by the Facility Director, are reviewed and approved by the Reactor Safety Committee. Neither the Irradiation Request Form nor the Irradiation Log document the Facility Director's determination of whether or not an experiment constituted a new experiment. This lack of documentation was discussed during the exit interview and the licensee agreed to review this area and institute necessary changes to ensure documentation of this determination. This item is identified for future review as an open item (50-62/82-01-05 and 50-396/82-01-04).

#### 11. Followup on Previously Identified Concerns

(Closed) Inspector Followup Item (62, 396/81-02-01). Licensee to improve surveillance record in the area of safety rod reactivity worths. The inspector reviewed the control rod calibration surveillance records and found them acceptable.