

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-186/89002(DRSS)

Docket No. 50-186

License No. R-103

Licensee: University of Missouri  
Research Reactor Facility  
Research Park  
Columbia, MO 65201

Facility Name: Research Reactor Facility

Inspection At: University of Missouri, Columbia, Missouri

Inspection Conducted: September 26-28, 1989

Inspector: *J. P. Patterson*  
J. P. Patterson

*10/11/89*  
Date

Approved By: *T. J. Ploski*  
T. J. Ploski, Acting Chief  
Radiological Controls and  
Emergency Preparedness Section

*10/11/89*  
Date

Inspection Summary

Inspection on September 26-28, 1989 (Report No. 50-186/89002(DRSS))

Areas Inspected: Routine announced inspection of the onsite emergency preparedness program at the Research Reactor Facility involving four general areas: training, emergency facilities and equipment, communications and an emergency plan review.

Results: No violations were identified. No new concerns were initiated and none remained from prior inspections. From interviews with key emergency response personnel, plus a thorough review of the training program, there was good evidence that the quality of the emergency preparedness program has continued to improve. Management has a positive attitude for change, if needed, to improve the program. This has been demonstrated in changes already made and others being considered.

## DETAILS

### 1. Persons Contacted

- \*S. Morris, Interim Director, University of Missouri Research Reactor (MURR) Facility
- \*L. Pitchford, Radiation Safety Officer, University of Missouri
- \*C. McKibben, Associate Director, MURR
- \*W. Meyer, Reactor Manager
- \*T. Schoone, Operations Engineer
- \*G. Gunn, Shift Supervisor
- N. Tritschler, Shift Supervisor
- \*J. Ernst, Health Physicist
- R. Dobej, Health Physics Technician

\*Denotes those attending the exit interview.

### 2. Evaluation of the Licensee's Emergency Preparedness Program

#### a. Organization

On February 16, 1989, Dr. R. M. Brugger resigned as Director of the University of Missouri, Research Reactor Facility to return to the University's nuclear engineering faculty. His leaving resulted in the following managerial changes for the reactor facility:

Dr. J. Steven Morris appointed Interim Director of the Research Reactor Facility.

Mr. Charles McKibben, formerly Reactor Manager, was appointed Associate Director, Research Reactor Facility.

Mr. Walter Meyer, formerly Operations Engineer, was appointed Reactor Manager.

Mr. Anthony Schoone was appointed Operations Engineer.

From discussions and meeting during this inspection with those holding these new managerial positions, the inspector concluded that proper and appropriate emphasis on emergency preparedness should continue and should improve.

Based on the above findings, this portion of the licensee's program was acceptable.

#### b. Training

A review of training records and interviews with several emergency response personnel confirmed that required annual training has been conducted by interactive "table-top" sessions and required reading.

Annual training for other MURR employees and users has also been conducted. This training included a facility evacuation drill conducted in January 1989, and several training sessions. A critique was held following the evacuation drill which identified some areas for improvement. These included persons not following the evacuation routes when leaving the building, inability to hear the evacuation alarm in certain remote rooms, and the need to ensure that persons in certain locations are notified by the surveillance team. These items and others have been followed up by the Emergency Preparedness (EP) responsible person, by conducting interviews with the participants and emphasizing these aspects of drill performance in subsequent training sessions.

The interactive training sessions included security related events which could pose a threat to the control room or the facility in general. Besides threats, actual breaches of security were part of the mini-scenarios conducted as training sessions for emergency response personnel. These are relevant since the security related events are classified as emergencies in the Emergency Plan. The input for these sessions was developed by the newly appointed Training Coordinator. Previously the Training Coordinator's efforts were limited to requalification training required for operations personnel. EP training sessions are now a part of the complete training program for operations personnel. This upgrade of training courses to include EP should result in more structured and useful EP training.

To better evaluate the effectiveness of EP training, interviews were conducted with two Duty Shift Supervisors who would serve as Emergency Directors, one individual who could serve as an Emergency Coordinator, and one who would serve as a Health Physics Technician in an emergency. All four demonstrated very good knowledge of their emergency duties as well as an awareness of the main concepts of emergency response. One individual had some concern over the quality of the Site Emergency Procedures (SEPs). The inspector suggested that he discuss his suggestions with the author of the SEPs, or with the newly designated Training Coordinator. Another individual mentioned that, due to changing work schedules, he was never available to participate in either the annual training drill or the biennial drill with outside support groups. The Training Coordinator should be able to schedule the annual drill to permit certain Control Room or Health Physics personnel, who have not yet had the opportunity to participate, to be available on the day of the drill. The biennial drill schedule is less flexible because of the offsite support groups' participation.

Training for medical support personnel has now (reference Inspection Report No. 50-186/88002(DRSS)) been assigned to the MURR staff. This biennial training requirement will be met as part of the preparation for the biennial drill scheduled for the last quarter of 1989. Follow-up, including critiques after this drill, will make up the

balance of EP related training for the medical support personnel. This drill involves interactions and coordination with the University Hospital, Campus Police, University Health Physics Services, and the Columbia Fire Department.

Based on the above findings, this portion of the licensee's program was acceptable.

c. Emergency Facilities and Equipment

Emergency equipment and supplies were maintained in the same locations as identified in previous inspections, namely the copy machine room in the facility lobby and the backup emergency equipment cabinet in Room 10 of the Research Park Development Building. The inspector made a cursory verification of certain key items in each emergency kit and found them to be satisfactory. Physical inventories are being conducted quarterly as verified by record checks.

Other emergency equipment observed were the reactor isolation alarm, the facility evacuation alarm and the radiation alarm monitors in the Control Room. All appeared to be operable. The stack effluent monitor was also examined and appeared to be satisfactory. This stack monitor system has the capability to allow grab samples to be taken off the effluent line for analysis. A new stack monitor system with computer data transfer capability has been purchased, but will be unavailable for service for some time, pending testing and calibration. The licensee now has the capability to obtain containment air samples from any of four separate locations in containment. This should also be valuable for identifying air leakage in containment.

Emergency facilities were reviewed and found to be satisfactory.

Based on the above findings, this portion of the licensee's program was acceptable.

d. Communications

A new 275 kilowatt emergency diesel generator became operational on August 21, 1989. This new generator is more accessible for service than its predecessor, due to its location on ground level in a small concrete block structure behind the reactor building. This generator can supply backup power for emergency communications equipment. Besides telephones, communications equipment included an inter-communication system between HP office and the Control Room, a facility paging system, two-way portable radios, and the evacuation horn which is used for facility evacuation and for containment evacuation.

The emergency telephone call list for individuals with key emergency response positions, as well as other personnel, was updated in September 1989. The inspector verified that the posted copies of the call list in various locations in the facility were current.

Based on the above findings, this portion of the licensee's program was acceptable.

e. Emergency Plan Review

The annual review of the emergency plan and implementing procedures was being completed at the time of this inspection. Completion of this annual review was expected by approximately October 13, 1989. Changes proposed as a result of the 1988 inspection have already been included in the current emergency plan.

After reviewing the current emergency plan, one significant change has been recommended by the inspector. Section 2.0, Organizational Control of Emergencies, Page 4, lists the direct responsibilities of the Emergency Director. The first responsibility for the Emergency Director should be to identify and classify the emergency. The other two responsibilities presently listed come into effect following an emergency classification decision. The licensee has agreed to make this change when the next emergency plan revision is submitted for review.

The Letter of Agreement with the Columbia Fire Department is dated October 21, 1987, and should be considered for an update and possible revision during 1989. The Missouri University News Bureau has now been delegated the responsibility for relating necessary information about an emergency situation to the news media and the public. The Office of University Relations had been responsible for providing this information to the public and offsite authorities. This change has been incorporated into the emergency plan effective September 1, 1989.

Based on the above findings, this portion of the licensee's program was acceptable.

3. Exit Interview

The inspector held an exit interview on September 28, 1989. Those licensee representatives who attended are designated in Section 1 of this report. The inspector discussed the scope and findings of the inspection. No violations were identified. He indicated that the EP program appears to be continuing on an upward trend. The addition of a Training Coordinator should better integrate the emergency preparedness training into the overall facility training program. The licensee indicated that no proprietary information was discussed during the exit interview.