December 21, 2001

Mr. Ralph Butler, Interim Director
Research Reactor Center
University of Missouri-Columbia
Research Park
Columbia, MO 65211

SUBJECT: NRC INSPECTION REPORT NO. 50-186/2001-203

Dear Mr. Butler:

This letter refers to the inspection conducted on November 26-29, 2001, at the University of Missouri-Columbia Research Reactor (MURR) facility. The inspection included a review of activities authorized for your facility. The enclosed report presents the results of this inspection.

Various aspects of your safety and operations programs were inspected including selective examinations of procedures and representative records, interviews with personnel, and observation of activities in progress. Based on the results of this inspection, no significant safety issues were identified.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at (the Public Electronic Reading Room) http://www.nrc.gov/NRC/ADAMS/index.html.

If you have any questions concerning this inspection, please contact Craig Bassett at 404-562-4712.

Sincerely,

/RA Alexander Adams, Jr. Acting for/

Patrick M. Madden, Section Chief
Non-Power Reactors and Financial Section
Operational Experience and
Non-Power Reactors Branch
Division of Regulatory Improvement Programs
Office of Nuclear Reactor Regulation

Docket No.: 50-186
License No.: R-103

Enclosure: NRC Inspection Report No. 50-186/2001-203

cc w/enclosure:

Please see next page

cc:

University of Missouri
Associate Director
Research Reactor Facility
Columbia, MO 65201

A-95 Coordinator
Division of Planning
Office of Administration
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Missouri Department of Natural Resources
P.O. Box 176
Jefferson City, MO 65102

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Please see next page
Distribution: w/enclosure

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U. S. NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR REACTOR REGULATION

Docket No.:	50-186
License No.:	R-103
Report No.:	50-186/2001-203
Licensee:	University of Missouri-Columbia
Facility:	University of Missouri-Columbia Research Reactor (MURR)
Location:	Research Park Columbia, Missouri
Dates:	November 26-29, 2001
Inspectors:	Craig Bassett
Approved by:	Patrick M. Madden, Section Chief Non-Power Reactors and Financial Section Operational Experience and Non-Power Reactors Branch Division of Regulatory Improvement Programs Office of Nuclear Reactor Regulation

EXECUTIVE SUMMARY

This was a routine, announced inspection of activities at the University of Missouri-Columbia Research Reactor facility related to operation of the 10 Megawatt (MW) Class 1 non-power reactor (NPR). It included an onsite review of the licensee's programs dealing with organizational structure and functions, operations, design control, review and audit, operator requalification, maintenance and surveillance, fuel handling, experiments, procedural control, and emergency preparedness since the last NRC inspection of this facility. The licensee's programs were acceptably directed toward the protection of public health and safety, and in compliance with NRC requirements.

ORGANIZATIONAL STRUCTURE AND FUNCTIONS

- The organizational structure and staffing were consistent with Technical Specification requirements.

OPERATIONS

- MURR operations shift turnovers, communication, and operator cognizance of facility conditions were acceptable.
- Management command and control was acceptable as well.

DESIGN CONTROL, REVIEW AND AUDIT

- The evaluation of changes to facilities and procedures satisfied NRC requirements.
- An audit program is being developed by the licensee.

OPERATOR REQUALIFICATION

- Operator requalification was conducted as required by the Requalification Program.

MAINTENANCE

- The Work Control Program, when fully implemented, should improve the maintenance program at the facility.

SURVEILLANCE

- The surveillance program satisfied Technical Specification requirements.

FUEL HANDLING

- Fuel movement was conducted in accordance with procedural requirements.

EXPERIMENTS

- The Reactor Utilization Request program is being revised and will be reviewed during a future inspection.

PROCEDURES

- The procedural upgrade program will require more time to complete but the current revision, control, and implementation program satisfied Technical Specification requirements.

EMERGENCY PREPAREDNESS

- The emergency preparedness program was conducted in accordance with the Emergency Plan.

REPORT DETAILS

Summary of Plant Status

The licensee's ten megawatt (10 MW) non-power reactor continues to be operated in support of laboratory experiments, reactor operator training, and various types of research. During the inspection, the reactor was being operated 24-hours per day except during maintenance periods to support laboratory experiments and conduct product irradiation.

1. ORGANIZATIONAL STRUCTURE AND FUNCTIONS

a. Inspection Scope (Inspection Procedure (IP) 39745)

The inspector reviewed selected aspects of the following:

- organization and staffing
- management and staff responsibilities

b. Observations and Findings

Since the last inspection at the facility in the area of reactor operations (Inspection Report [IR] 50-186/2001-201), the person who had been the Director of MURR left the university. Currently the person filling the position of Chief Operating Officer (COO) is also acting as the Interim Director. It was also noted that the person who had been the Manager of Health Physics was selected to assume the position of Associate Director of the Regulatory Assurance Group. The Assistant Manger of Health Physics is currently the Acting Manager of Health Physics. The inspector was informed that the person occupying the position of Vice Provost for Research will be leaving in mid-December. Both this position and that of Director of MURR will be filled as soon as qualified people can be identified.

Through a review of the reactor operations logs for the period from November 2000 to the present and interviews with operations personnel, the inspector determined that all four operating crews are staffed with four to five individuals; three are qualified reactor operators and one or two individuals per crew are operator trainees. Record reviews and direct observations verified that shift turnover briefings are held during each shift change and that shift activities are discussed in detail.

From the above observations, the inspector also determined that the organizational structure was consistent with the requirements of Technical Specifications (TS) Section 6.1.a and Figure 6.0, Revision 12, dated September 20, 1999. Staffing during reactor operation satisfied the requirements of TS Section 6.1.i.

The inspector noted that the licensee's current organizational structure continues to make use of a Lead Senior Reactor Operator (LSRO) as the person in charge of each crew rather than a shift supervisor. The licensee had anticipated assigning a LSRO as the lead person for a period of at least six months. However, the licensee is now contemplating having the LSRO remain in the supervisory position for 18 to 24 months, thus providing greater stability in the line organization. The inspector noted

that this practice would tend to produce more continuity and better communication within each crew and among the rotating crews.

c. Conclusions

The organizational structure and staffing were consistent with TS requirements.

2. OPERATIONS

a. Inspection Scope (IP 39745)

The inspector reviewed selected aspects of the following:

- reactor operations logs and records from November 2000 to the present
- shift turnover sheets for September, October, and November 2001
- Administrative Procedure AP-RR-001, "Corrective Action Program," Rev. 3, issued August 3, 2001

b. Observations and Findings

Following operational problems in April and June 2000, various issues were identified during subsequent inspections by the NRC and during independent assessments conducted by a TRTR peer group and by contractor personnel. As a result of the findings of these groups, the COO initiated a Performance Enhancement Plan (PEP) to resolve the issues. (The NRC findings are documented in NRC Inspection Reports, IR 50-186/2000-202 and IR 50-186/2000-203.) During this inspection, the inspector reviewed the progress that had been made concerning completion of the corrective actions specified in the PEP.

One issue identified as an Inspector Follow-up Item (IFI) in IR 50-186/2000-202 dealt with management of the organization. In that inspection report the NRC indicated that further review of this area was needed to determine whether management would provide the resources, personnel, training, and appropriate command and control needed to ensure the safe conduct of licensed activities and compliance with regulatory requirements. The need for better facility communications and improved shift turnover briefings and communications among crews was also noted.

The reactor operating logs from November 2000 to the present were reviewed, as were the shift turnover sheets for the past three months. Operating crews were also interviewed. The logs and turnover sheets were clear and provided an indication of operational activities, including documentation of events. Operators on the various crews were aware of the facility status which was reflected in briefings and on facility and fuel status boards that were maintained current in the Control Room. Shift turnover briefings were held at each shift change and all operators reviewed the logs and the shift turnover sheets and signed off that they had read the information contained therein. Daily operations and any maintenance activities were reviewed and discussed. LSROs, the other individuals on the crews, and management were aware of the scheduled activities and any conflicts in scheduling were resolved.

The inspector attended a Plan of the Day meeting on Tuesday. The meeting, chaired by the Reactor Manager, was held daily and representatives from all organizations at the facility were in attendance. Each organization had the opportunity to provide input and discuss their work group's activities planned for that day. Safety significant issues were also discussed and any concerns were resolved. During the week the inspector also attended an "All Staff" meeting held by the Interim Director. This meeting was used to discuss the current status of various facility initiatives and give everyone an opportunity to ask questions of management. The inspector noted that these types of meetings provide all staff members with an opportunity to be aware of current facility conditions and upcoming activities.

Following the events in 2000, the licensee determined that there was no effective way for facility personnel to identify problems or safety concerns and be assured that they would be addressed. A Corrective Action Program (CAP) was developed to provide staff members with a formal process to identify deficiencies and bring the issues to management's attention for resolution. The program was designed so that anyone could identify a discrepancy, concern, or improvement opportunity and enter the issue into the CAP system via the MURR intranet. When issues are identified, each issue is screened for safety significance, evaluated to determine the cause and its contributing factors, and corrective actions are developed and implemented consistent with an established schedule.

The inspector reviewed the CAP program which is still being revised and updated to provide greater security and enhance user friendliness. There are currently forty-nine CAP items identified, of which only eight have been resolved. The licensee is committed to the program and has indicated that the necessary resources will be allocated to ensure that it functions as anticipated. The inspector noted that this program should provide staff members with the opportunity to make their concerns known to management and receive feedback on the resolution of the problems.

c. Conclusions

MURR operations shift turnovers, communication, and operator cognizance of facility conditions were acceptable. Management command and control was acceptable as well.

3. DESIGN CONTROL, REVIEW AND AUDIT

a. Inspection Scope (IP 40745)

The inspector reviewed selected aspects of:

- Administrative Procedure AP-RR-003, "10 CFR 50.59 Evaluations," Revision (Rev.) 0, issued March 12, 2001.
- AP-RR-003 Attachment 1, 50.59 Screen Form
- AP-RR-003 Attachment 2, 50.59 Evaluation Form
- Reactor Advisory Committee meeting minutes
- safety reviews and audits

b. Observations and Findings

(1) Change Control

The regulatory requirements stipulated in the revision of 10 CFR 50.59 were implemented at the facility through Administrative Procedure, AP-RR-003, "10 CFR 50.59 Evaluations," Revision 0, issued March 12, 2001. The procedure adequately incorporated criteria provided by the regulation with additional requirements mandated by local conditions.

Staff training in the new process was provided and various licensee employees were designated as 10 CFR 50.59 reviewers. All new and revised procedures generated as a result of the Performance Enhancement Plan have been or are being screened with respect to the above procedure. Non-routine maintenance activities and facility modifications are now routinely identified for screening by the Work Control Group with input from the on-duty LSRO. The procedure changes and modification packages are processed through and controlled by the Document Control Coordinator.

The inspector reviewed selected 50.59 Screen Forms and 50.59 Evaluation Forms processed within the last three months. The completed forms showed that changes were acceptably reviewed in accordance with AP-RR-003. None of the changes reviewed by the inspector required a license amendment.

(2) Review and Audit

Records of the meetings held during 2001 by the Reactor Advisory Committee (RAC) and those of the various Safety subcommittees were reviewed. The records showed that meetings were held as required and safety reviews were conducted by the RAC or a designated subcommittee. Topics of these reviews were sufficient to provide guidance, direction, and oversight, and to ensure acceptable use of the reactor.

The subject of audits of reactor operations was discussed with the licensee. No formal audit program has been established to date and none is mentioned in the TS. However, in the past, peer review-type audits had been completed. During this inspection the Reactor Manager indicated that this practice was being renewed. Persons from the University of Missouri-Rolla were scheduled to come to the MURR facility during the week of December 3, 2001, to conduct an operations audit. MURR personnel were then to travel to the Rolla facility and conduct an audit there during the week of December 10, 2001, in return. The inspector indicated that this practice will provide each facility with an independent review of the facility operations and will be beneficial for both organizations. The inspector informed the licensee that a previous Inspector Follow-up Item (IFI 50-186/2001-201-01) will remain open until the audit program can be formalized by procedure. However, the inspector noted that good progress had been made.

c. Conclusions

The design change program satisfied NRC requirements. An audit program is being developed by the licensee.

4. OPERATOR REQUALIFICATION

a. Inspection Scope (IP 69003)

The inspector reviewed selected aspects of:

- Operator Requalification Program dated January 7, 1997
- status of operator licenses
- operator training and examination records for the year 2001
- MURR Operator Active Status Log for the year 2001

b. Observations and Findings

The Requalification Program was maintained up to date and RO and SRO licenses were current. Records showed that operator training was consistent with the Requalification Program requirements and there are currently five individuals in training to become reactor operators as noted above. Records confirmed that the operators were acceptably completing written and operating examinations. MURR Operator Active Status Logs and records also showed that operators maintained active duty status as required.

c. Conclusions

Operator requalification was conducted as required by the Requalification Program.

5. MAINTENANCE

a. Inspection Scope (IP 39745)

The inspector reviewed selected aspects of:

- Administrative Procedure AP-RR-015, “Work Control Procedure,” Rev. 0, issued July 3, 2001
- Administrative Procedure AP-RR-012, “Commitment Tracking System,” Rev. 0, issued May 11, 2001

b. Observations and Findings

The reactor is routinely shut down each Monday to perform maintenance and then operated around the clock for the remainder of the week. In the past, the maintenance list/schedule was coordinated at weekly meetings chaired by the LSRO on day shift. The LSRO controlled and issued the approved Maintenance Day Work List which outlined the maintenance activities that would be conducted the following Monday. The list was widely distributed to the various operations and support groups

at the facility. Routine preventative maintenance needs for the month were issued by specialists in operations, machine shop, and electronics shop and were discussed during the maintenance meeting.

Because the LSROs rotated shifts, the person conducting the maintenance meeting on Wednesday and coordinating all the maintenance activities was not the person involved with maintenance on the following Monday. This practice created a system that was not always efficient and effective. Consequently a new Work Control Program was developed and a new organization was established at the facility. The new organization currently consists of a Work Control Manager (WCM), a Planner/Scheduler, and a Chief Research Engineering Technician. They are responsible to ensure that all maintenance activities are screened, planned and implemented, post maintenance testing is performed, and the entire process is then documented appropriately. A new planning and scheduling software package, *Maximo*, has been procured to assist in this effort.

The inspector attended a weekly maintenance meeting conducted under the new program. The meeting was conducted by the WCM and attended by representatives from the various support organizations at the facility. The day-shift LSRO was also in attendance to provide needed input. Everyone was made aware of the activities that were scheduled to be conducted the following Monday and any last minute problems were resolved.

The meeting results and interviews with operations and support personnel indicated to the inspector that the Work Control Program was being implemented appropriately. It was noted that this system should provide for a more consistent and effective method of controlling the maintenance activities and should allow for long range planning and coordination of upgrades to the equipment and facility.

c. Conclusions

The Work Control Program, when fully implemented, should enhance the maintenance program.

6. SURVEILLANCE

a. Inspection Scope (IP 61745)

The inspector reviewed aspects of:

- selected MURR Compliance Procedures (CPs) related to security
- selected CP data sheets and records

b. Observations and Findings

Surveillance verifications concerning the testing of various security systems and alarms were completed on schedule and in accordance with licensee procedures. The licensee terminology for this program was “Compliance Check” and followed the

same schedule each year. The reviewed results were within the TS and procedurally prescribed parameters.

c. Conclusions

The surveillance program satisfied Technical Specification requirements.

7. FUEL HANDLING

a. Inspection Scope (IP 60745)

The inspector reviewed selected aspects of the following:

- MURR Operating Procedure RP-RO-100, "Fuel Movement," Rev. 0, issued May 7, 2001
- MURR Operating Procedure RP-RO-250, "Fuel Handling," Rev. 0, issued August 10, 2001
- Fuel Status Board located in the Control Room

b. Observations and Findings

Following the event on June 12, 2000, the licensee issued two Standing Orders pertaining to fuel movement. The first Standing Order required that the step-by-step fuel movement procedure approved by the Reactor Physicist, or his approved designee, be reviewed and countersigned by a second individual who was licensed as an SRO. The second Standing Order required that any revision of the step-by-step fuel movement procedure be approved by two individuals comprising any combination of the Reactor Physicist or licensed SROs.

During this inspection the inspector reviewed the fuel movement process and verified that fuel is moved according to established and reviewed fuel movement procedures and that the location of fuel in the reactor core is noted and maintained on a Status Board located in the Control Room. The inspector also verified that the procedures governing fuel handling and movement had been revised to reflect the conditions above, namely that two individuals, familiar with the requirements of fuel movement, must review and approve a change to a step-by-step fuel movement procedure.

c. Conclusions

Fuel movement was conducted in accordance with procedural requirements.

8. EXPERIMENTS

a. Inspection Scope (IP 69005)

The inspector reviewed selected aspects of:

- listing of all Reactor Utilization Requests (RURs)
- revised Reactor Utilization Request format

b. Observations and Findings

A requirement in SOP VIII.1.1.D.1 stated that active Reactor Utilization Requests (RURs) were to be reviewed by the Reactor Manager and the Principle Experimenter on an annual basis. During a previous inspection (IR 50-186/2001-201), the inspector found that there was evidence that the reviews had been done for most of the experiments but there was no formal documentation. The inspector reviewed this issued during this inspection and determined that the licensee had reviewed all RURs at the facility. The licensee found that most of the RURs fell into the category of "inactive" because they had been used for one isolated experiment or there were various RURs dealing with the same experiment. This program is being revised, a new form is being developed, and the system is being computerized. The licensee was informed that the IFI (IFI 50-186/2001-201-02) established during a previous inspection will remain open and the RUR program will be reviewed during a future inspection.

c. Conclusions

The Reactor Utilization Request program is being revised and will be reviewed during a future inspection.

9. PROCEDURES

a. Inspection Scope (IP 42745)

The inspector reviewed selected aspects of:

- Technical Specification Sections 6.1.b and 6.1.c
- Standard Operating Procedures
- Shipping Procedures
- Health Physics Procedures

b. Observations and Findings

As noted in a previous report (IR 50-186/2001-201), the "Writer's Guide", issued in October 2000, provided clear and detailed information regarding procedure development. New procedures issued using this guide were consistent and user friendly. Use of this guide constituted a licensee program strength.

TS 6.1(c) requires the RAC to review procedure changes with safety significance. The Reactor Procedure Review Subcommittee was chartered to fulfill this requirement. The inspector verified that the subcommittee was meeting as required to review the current procedure revisions and changes.

One of the top priorities of the PEP was the procedure upgrade effort. Completion had been targeted for June 2001 but that goal was not met. Contractors have been and are being used to assist with revising facility procedures. The inspector verified that the Standard Operating Procedures pertaining to reactor operation have been revised, reviewed, and approved. Most of the remaining Health Physics and

Shipping procedures have been through an initial revision process but are currently being reviewed by the groups who routinely use them and comments are being resolved. It was also noted that the Emergency Preparedness implementing procedures are also being revised and should be ready for use by the first or second quarter of next year.

c. Conclusions

The procedural upgrade program will require more time to complete but the current revision, control, and implementation program satisfied TS requirements.

10. EMERGENCY PREPAREDNESS

a. Inspection Scope (IP 82745)

The inspector reviewed selected aspects of:

- Emergency Plan for the University of Missouri Research Reactor Facility, Rev. 12, dated January 14, 2000
- MURR Site Emergency Procedures and Facility Emergency Procedures, Rev. 32, dated November 14, 2001
- Letter of Agreement with the City of Columbia
- offsite support
- 2001 emergency drill documentation and critique

b. Observations and Findings

The inspector reviewed the Emergency Plan (E-Plan) in use at the reactor and satellite emergency facilities. The E-Plan was reviewed annually as required. The Site Emergency Procedures and Facility Emergency Procedures (E-Plan implementing procedures) were reviewed and revised as needed to ensure effective implementation of the E-Plan. Through records review and interviews with licensee personnel, emergency responders were determined to be knowledgeable of the proper actions to take in case of an emergency. The agreement with the City of Columbia Fire Department had been maintained and updated as necessary. Communications capabilities with support groups were acceptable and had been periodically tested. The 2001 Emergency drill had been conducted as required by the E-Plan. Off-site support organization participation was also as required by the E-Plan. A critique was held following the drill to discuss the strengths and weaknesses identified during the exercise and to develop possible solutions to the problems identified.

c. Conclusions

The emergency preparedness program was conducted in accordance with the Emergency Plan.

11. FOLLOW-UP ON PREVIOUSLY IDENTIFIED ITEMS

a. Inspection Scope

The inspector reviewed the licensee's actions taken in response to previously identified Inspector Follow-up Items.

b. Observation and Findings

(1) VIO 99-201-01 - (Closed) Failure to comply with TS Section 3.4.a concerning the Reactor Bridge Area Radiation Monitor (ARM). During a refueling operation in 1999, the reactor bridge ARM had not been restored to normal when the reactor was started-up and operated at 10 MW. The inspector reviewed the licensee's response to the Notice of Violation, dated July 30, 1999, and determined that the corrective actions specified had been completed. The corrective actions consisted of revising the Reactor Start-up Check Sheet to require a sign off by the operator completing the check sheet to ensure that the bridge ARM is restored to normal prior to reactor start-up. The Reactor Start-up Check Sheet is required to be completed before an operator can initiate the start-up procedure, MURR Operating Procedure, OP-RO-210, "Reactor Startup - Normal," Rev. 0, dated May 3, 2001.

(2) IFI 99-201-02 - (Closed) Follow-up on corrective actions for low flow scram setpoint drift. The licensee reported an out-of-tolerance primary flow scram setpoint that was discovered in November of 1998. The scram function was operable but at a slightly less conservative (98.5%) scram setpoint than the TS required. The licensee retested the affected channels on a greater frequency and did not find any further problems. The inspector verified that the primary flow scram setpoint is tested semi-annually as required by the TS Section 5.4.a. This is completed by Compliance Check CP-4 A/B, Rev. September 12, 2000. The setpoint was last checked on September 17, 2001, and found to be within acceptable tolerance. The alarm setpoint is 1,800 gallons per minute (gpm) and the scram setpoint is 1725 gpm.

(3) IFI 50-186/2000-202-01 (Closed) - Evaluate the licensee's organization function. During an inspection in April 2000, problems were noted involving command and control and with communications. The licensee subsequently took numerous corrective actions to address these and other problems. During this inspection the inspector determined that the licensee had completed the appropriate actions to ensure proper command and control and provide for adequate communications with the staff. See Section 2 of this report for details.

(4) IFI 50-186/2000-202-02 (Closed) - Assess operator cognizance of facility conditions including effectiveness of shift turnover briefings. The licensee indicated that staff awareness of equipment status is expected to improve after establishment of facility and fuel status boards in the Control Room and following implementation of a proposed Work Control Program. The inspector

verified that these corrective actions had been completed/implemented. See Section 2 of this report for details about this issue as well.

(5) IFI 50-186/2000-202-04 (Closed) - Implement Standing Orders regarding countersignatures for fuel movement and changes to fuel movement procedures. The inspector reviewed the administrative controls that had been implemented by the licensee and found that they were in place. The effectiveness of these controls were reviewed by the inspector and found to be acceptable. See Section 7 of this report for details.

(6) IFI 50-186/2000-202-05 (Closed) - Implement procedure documentation, review, training, implementation, changes, and precautions. A comprehensive overhaul of the procedures program was cited as a priority effort in the PEP. Implementation of this program is ongoing but the majority of the procedures have been revised and approved as required. The inspector found that the procedure revision program was acceptable and had been completed to an extent that the item can be closed. See Section 9 of this report for details.

(7) IFI 50-186/2001-201-01 (Open) - Follow-up on the licensee's efforts to implement an effective audit program for operations. The inspector reviewed this issue and found that no formal audit program has been developed to date. This issue will be reviewed during a future inspection. See Section 3.b(2) of this report for further details.

(8) IFI 50-186/2001-201-02 (Open) - Follow-up on the licensee's actions to ensure documentation for the annual review of Reactor Utilization Requests. The RUR program is currently under revision and being computerized by the licensee. This issue will be reviewed during a future inspection. See Section 8 of this report for further details.

(9) IFI 50-186/2001-201-03 (Open) - Complete Performance Enhancement Plan to prevent future violations of regulatory requirements. The licensee has completed many of the items identified in the PEP. This issue will remain open until the procedure revision program is completed and the other programs outlined in the PEP are fully functional. See Sections 2, 5, and 9 of this report for further details.

c. Conclusions

One violation and five Inspector Follow-up Items, identified during previous inspections, were closed. The three other previously identified items remain open.

12. EXIT INTERVIEW

The inspection scope and results were summarized on November 29, 2001, with members of licensee management and staff. The inspector described the areas inspected and discussed in detail the inspection findings.

No dissenting comments were received from the licensee. The licensee did not identify as proprietary any of the material provided to or reviewed by the inspector.

PARTIAL LIST OF PERSONS CONTACTED

Licensee Personnel

C. Allen, Program Specialist
R. Butler, Interim Director, MURR and Chief Operating Officer
M. Dixon, Assistant Reactor Manager - Operations
R. Dobey, Acting Health Physics Manager
J. Ernst, Health Physics Manager
L. Foyto, Assistant Reactor Manager - Engineering
J. Fruits, Work Control Manager
A. Gaddy, Document Control Coordinator
G. Gunn, Lead Senior Reactor Operator
P. Hobbs, Reactor Manager
K. Kutikkad, Assistant Reactor Manager - Physics
W. Meyer, Associate Director, Reactor Income Generating Operations
C. McKibben, Associate Director and Senior Advisor

Other Personnel

R. Hall, Interim Vice Provost for Research

INSPECTION PROCEDURES USED

IP 39745 Class I Non-Power Reactors Organization, Operations, and Maintenance Activities
IP 40745 Class I Non-Power Reactor Review and Audit and Design Change Functions
IP 42745 Class I Non-Power Reactor Procedures
IP 60745 Class I Non-Power Reactor Fuel Movement
IP 61745 Class I Non-Power Reactor Surveillance
IP 69003 Class I Non-Power Reactor Operator Licenses, Requalification, and Medical Activities
IP 69005 Class I Non-Power Reactor Experiments
IP 82745 Class I Non-Power Reactor Emergency Preparedness

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

None

Closed

50-186/99-201-01	VIO	Failure to comply with TS Section 3.4.a concerning the Reactor Bridge Area Radiation Monitor (ARM).
50-186/99-201-02	IFI	Follow-up on corrective actions for low flow scram setpoint drift.
50-186/2000-202-01	IFI	Evaluate the licensee's organization function.

50-186/2000-202-02	IFI	Assess operator understanding of facility conditions.
50-186/2000-202-04	IFI	Review effectiveness of corrective actions in the fuel-handling area.
50-186/2000-202-05	IFI	Determine whether procedural implementation is acceptable.

Discussed

50-186/2001-201-01	IFI	Follow up on the licensee's efforts to implement an effective audit program for operations.
50-186/2001-201-02	IFI	Follow up on the licensee's actions to ensure documentation for the annual review of active Reactor Utilization Requests.
50-186/2001-201-03	IFI	Complete Performance Enhancement Plan to prevent future violations of regulatory requirements.

LIST OF ACRONYMS USED

CAP	Corrective Action Program
CFR	Code of Federal Regulations
COO	Chief Operating Officer
CP	Compliance Procedure
E-Plan	Emergency Plan
gpm	gallons per minute
IFI	Inspector Follow-up Item
IP	Inspection Procedure
IR	Inspection Report
LSRO	Lead Senior Reactor Operator
MURR	University of Missouri-Columbia Research Reactor
MW	Megawatt
NPR	Non-Power Reactor
NRC	Nuclear Regulatory Commission
PDR	Public Document Room
PEP	Performance Enhancement Plan
RAC	Reactor Advisory Committee
Rev.	Revision
REXB	Events Assessment, Generic Communications, and Non-Power Reactors Branch
RO	Reactor Operator
RUR	Reactor Utilization Request
SOP	Standard Operating Procedure
SRO	Senior Reactor Operator
TRTR	Test, Research, and Training Reactor (Organization)
TS	Technical Specification
VIO	Violation
WCM	Work Control Manager