



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
612 EAST LAMAR BLVD, SUITE 400
ARLINGTON, TEXAS 76011-4125

February 5, 2010

Al Washko
Medical Center Director
Department of Veterans Affairs
Nebraska-Western Iowa Health Care System
4101 Woolworth Avenue
Omaha, NE 68105

SUBJECT: NRC INSPECTION REPORT 050-00131/09-001 AND NOTICE OF VIOLATION

Dear Mr. Washko:

This refers to the inspection conducted on December 1-2, 2009, at the Alan J. Blotcky Reactor Facility located in Omaha, Nebraska. This inspection was an examination of activities conducted under your license for the permanently shut down research reactor as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. Within these areas, the inspection consisted of selected examination of procedures and representative records, observations of activities, and interviews with personnel. The preliminary inspection results were presented to your staff at the conclusion of the onsite inspection, and the final inspection results were presented to your staff by telephone on February 04, 2010. The enclosed report presents the results of this inspection.

Based on the results of this inspection, the NRC has determined that four Severity Level IV violations of NRC requirements occurred. These violations were evaluated in accordance with the NRC Enforcement Policy included on the NRC's Web site at www.nrc.gov/about-nrc/regulatory/enforcement/enforce-pol.html. The violations are cited in the enclosed Notice of Violation (Notice) and the circumstances surrounding them are described in detail in the subject inspection report. The violations are being cited in the Notice because they were identified by the NRC, rather than being identified by your staff, with one exception. One violation involving missed sampling of the pool water was identified by your staff, but this violation is being cited because your staff failed to take prompt and comprehensive corrective actions in response to the two separate missed sampling events.

In addition, one unresolved item was identified related to your possible possession of polonium-beryllium sealed sources. An unresolved item is a matter about which more information is required to determine whether the issue in question is an acceptable item, a deviation, a nonconformance, or a violation. Please provide the NRC with additional information about your past or present possession of these sealed sources, including all available information about the receipt and/or disposal of these sources, within 30 days of the date of this letter. After we receive this additional information, the NRC will continue its review of this matter.

You are required to respond to this letter and should follow the instructions specified in the enclosed Notice when preparing your response. For your consideration and convenience, an excerpt from NRC Information Notice 96-28, "Suggested Guidance Relating to Development

and Implementation of Corrective Action," is enclosed. The NRC will use your response, in part, to determine whether further enforcement action is necessary to ensure compliance with regulatory requirements.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (ADAMS), accessible from the NRC's Web site at <http://www.nrc.gov/reading-rm/adams.html>. To the extent possible, your response should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the Public without redaction.

Should you have any questions concerning this inspection, please contact Mr. Robert Evans, Senior Health Physicist, at (817) 860-8234 or the undersigned at (817) 860-8197.

Sincerely,

/RA/

D. Blair Spitzberg, PhD, Chief
Repository & Spent Fuel Safety Branch

Docket: 050-00131

License: R-57

Enclosures:

1. Notice of Violation
2. NRC Inspection Report 050-00131/09-001
3. NRC Information Notice 96-28

cc w/Enclosures 1 and 2:
Mayor Jim Suttle
City of Omaha
Office of the Mayor
1819 Farnam Street
Suite 300
Omaha, NE 68183

Julia Schmitt, Manager
Radiation Control Program
Nebraska Health & Human Services Regulation and Licensure
P.O. Box 95026
Lincoln, NE 68509-5026

Marc Rupinta
Department of Veterans Affairs
810 Vermont Avenue, NW (12B1)
Washington, DC 20420

Debra Romberger, MD
Associate Chief of Staff/Research
Department of Veterans Affairs
Nebraska-Western Iowa Health Care System
4101 Woolworth Avenue
Omaha, NE 68105

Gary E. Williams, Interim Director
Department of Veterans Affairs
Veterans Health Administration
National Health Physics Program
2200 Fort Roots Drive
North Little Rock, AR 72114

bcc w/enclosure:

Art Howell, D:DNMS

Chuck Cain, DD:DNMS

Jack Whitten, C:DNMS/NMSB-B

Blair Spitzberg, C:DNMS/RSFS

Ted Smith, FSME/DWMEP/DURLD

Cassandra Frazier, RIII/DNMS/MLB

Patricia Pelke, RIII/DNMS/MLB

Robert Evans, NMSB-B

Fee Coordinator, DRMA

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FINAL: R:_DNMS

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RIV:DNMS:RSFS	C:RSFS			
RJEvans	DBSpitzberg			
<i>/RA/</i>	<i>/RA/</i>			
02/01/10	02/05/10			

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NOTICE OF VIOLATION

Department of Veterans Affairs
Omaha, Nebraska

Docket: 050-00131
License: R-57

During an NRC inspection conducted on December 1-2, 2009, four violations of NRC requirements were identified. In accordance with the NRC Enforcement Policy, the violations are listed below:

- A. Regulation 10 CFR 50.59(d)(1) states that the licensee shall maintain records of changes in the facility, of changes in procedures, and of tests and experiments made pursuant to paragraph (c) of this section. These records must include a written evaluation which provides the bases for the determination that the change, test, or experiment does not require a license amendment pursuant to paragraph (c)(2) of this section.

Contrary to the above, prior to the December 1-2, 2009, inspection, the licensee made a change in the facility as described in the final Safety Analysis Report. The licensee revised the boundary of the reactor facility restricted area when the licensee converted part of the restricted area into laboratory space. The boundary is described in Safety Analysis Report Figure 3.2, Reactor Laboratory Basement. However, the licensee failed to maintain records of these changes in the facility, including a written evaluation which provides the bases for the determination that the change does not require a license amendment pursuant to paragraph (c)(2) of this section.

This is a Severity Level IV violation (Supplement VI).

- B. License R-57, Condition 2.C(2), states that the licensee shall operate the facility in accordance with Technical Specifications. Technical Specifications Section 6.7.2(2) states that a written report is required to be submitted to the NRC within 30 days for permanent changes in facility organization involving Level 1 or 2 personnel.

Contrary to the above, as of December 2, 2009, the licensee did not submit a written report to the NRC within 30 days of making several permanent changes to Level 1 and 2 personnel staff. Specifically, the licensee made permanent changes to the chief of staff and reactor director/supervisor positions which are Level 1 and 2 staff.

This is a Severity Level IV violation (Supplement VI).

- C. License R-57, Condition 2.C(2), states that the licensee shall operate the facility in accordance with Technical Specifications. Technical Specifications Section 4.3.1 states that the reactor water shall be sampled for gross activity on an average monthly basis (interval not to exceed 6 weeks).

Contrary to the above, during calendar year 2009, the licensee failed to sample reactor water for gross activity on an average monthly basis. Specifically, the licensee failed to sample the reactor water during February 2009 and October 2009.

This is a Severity Level IV violation (Supplement VI).

- D. Regulation 10 CFR 50.54(q) states, in part, that research reactor licensees may make changes to emergency plans without Commission approval only if these changes do not decrease the effectiveness of the plans and the plans, as changed, continue to meet the requirements of appendix E to this part. Proposed changes that decrease the effectiveness of the approved emergency plans may not be implemented without application to and approval by the Commission. The licensee shall submit, as specified in § 50.4, a report of each proposed change for approval. If a change is made without approval, the licensee shall submit, as specified in § 50.4, a report of each change within 30 days after the change is made.

Contrary to the above, the licensee made changes to the emergency plan twice without Commission approval, once during December 2008 and once during March 2009. Although the changes were made without Commission approval, the licensee failed to submit a report of each change within 30 days after the change was made.

In addition, as of December 2, 2009, the emergency plan did not meet the requirements provided in Appendix E because the licensee removed much of the training requirements from Section 10 of the emergency plan. The changes included removal of the initial training and retraining requirements for onsite and offsite personnel. Also removed were the requirements for an annual onsite and biennial offsite support drills specifically for the shutdown reactor. These changes, implemented during or prior to December 2008, reduced the effectiveness of the emergency plan; thus, the changes required prior NRC approval before implementation.

This is a Severity Level IV problem (Supplement VIII).

Pursuant to the provisions of 10 CFR 2.201, the Department of Veterans Affairs, Nebraska-Western Iowa Health Care System, is hereby required to submit a written statement or explanation to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001, with a copy to the Regional Administrator, Region IV within 30 days of the date of the letter transmitting this Notice of Violation (Notice). This reply should be clearly marked as a "Reply to a Notice of Violation" and should include for each violation: (1) the reason for the violation, or, if contested, the basis for disputing the violation or severity level, (2) the corrective steps that have been taken and the results achieved, (3) the corrective steps that will be taken, and (4) the date when full compliance will be achieved. Your response may reference or include previous docketed correspondence, if the correspondence adequately addresses the required response. If an adequate reply is not received within the time specified in this Notice, an order or a Demand for Information may be issued as to why the license should not be modified, suspended, or revoked, or why such other action as may be proper should not be taken. Where good cause is shown, consideration will be given to extending the response time.

If you contest this enforcement action, you should also provide a copy of your response, with the basis for your denial, to the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001.

Because your response will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (ADAMS), accessible from the NRC's Web site at www.nrc.gov/reading-rm/pdr.html or www.nrc.gov/reading-rm/adams.html, to the extent possible, it should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the public without redaction. If personal privacy

or proprietary information is necessary to provide an acceptable response, then please provide a bracketed copy of your response that identifies the information that should be protected and a redacted copy of your response that deletes such information. If you request withholding of such material, you must specifically identify the portions of your response that you seek to have withheld and provide in detail the bases for your claim of withholding (e.g., explain why the disclosure of information will create an unwarranted invasion of personal privacy or provide the information required by 10 CFR 2.390(b) to support a request for withholding confidential commercial or financial information).

In accordance with 10 CFR 19.11, you may be required to post this Notice within 2 working days.

Dated this 5th day of February 2010

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Docket: 050-00131

License: R-57

Report: 050-00131/09-001

Licensee: Department of Veterans Affairs

Location: Alan J. Blotcky Reactor Facility
Omaha, Nebraska

Dates: December 1-2, 2009

Inspector: Robert Evans, PE, CHP, Senior Health Physicist
Repository & Spent Fuel Safety Branch

Approved by: D. Blair Spitzberg, Chief
Repository & Spent Fuel Safety Branch

Attachment: Supplemental Inspection Information

EXECUTIVE SUMMARY

Department of Veterans Affairs
NRC Inspection Report 050-00131/09-001

This inspection was a routine, announced inspection of licensed activities being conducted at the Alan J. Blotcky Reactor Facility. In summary, no significant health or safety issues were identified at the facility. However, four noncompliances were identified involving the licensee's failure to implement regulatory, license, and Technical Specifications (TS) requirements.

Decommissioning Inspection Procedure for Materials Licensees

- Since the previous inspection, the licensee revised the boundary of the reactor facility restricted area by adding a laboratory space within the restricted area. The licensee's failure to maintain records of the change, including a written evaluation of the bases for the change, was a violation of 10 CFR 50.59 requirements (Section 1.2.a).
- The licensee had staffed all positions. The licensee utilized the hospital radiation safety officer as needed to support compliance with the license. However, the licensee's failure to report permanent changes in the facility organization involving Level 1 and 2 personnel to the NRC within 30 days was a violation of TS 6.7.2(2) (Section 1.2.a).
- The licensee conducted routine audits of the license as required by TS 6.2 (Section 1.2.a).
- The licensee continued to monitor reactor pool water quality and to maintain pool water level in accordance with TS 4.3. However, the licensee's failure to sample the reactor water during February and October 2009 was a violation of TS 4.3.1 (Section 1.2.b).
- The licensee continued to conduct functional tests of the pool water level and ventilation system interlocks as required by TS 4.3 and TS 4.5 (Section 1.2.b).
- The restricted area was being controlled by the licensee. Ambient gamma radiation levels were low, and postings were conservative (Section 1.2.c).
- The licensee implemented its radiation protection program in accordance with TS 6.3 and 10 CFR Part 20 requirements (Section 1.2.d).
- The inspector was unable to verify whether two polonium-beryllium sealed sources that were claimed to be in the possession of the licensee prior to September 21, 2004, were still in the possession of the licensee, had been transferred or disposed since 2004, or had never been possessed by the licensee. This issue was identified as an unresolved item pending additional information from the licensee (Section 1.2.d).
- The licensee revised its emergency plan during December 2008 and March 2009. However, the licensee did not submit a report of each change to the NRC within 30 days, a violation of 10 CFR 50.54(q) requirements (Section 1.2.e).
- The licensee reduced the effectiveness of the emergency plan by eliminating most of the training requirements, a violation of 10 CFR 50.54(q) requirements (Section 1.2.e).

Report Details

Site Status

Operating License R-57 was issued to the Department of Veterans Affairs during June 1959. At that time, the licensee was authorized to operate the TRIGA reactor at a power level not to exceed 10 kilowatts (thermal). The power level was subsequently increased to 18 kW(t) during 1963 and 20 kW(t) during 1991. The reactor was permanently shut down during November 2001. The reactor fuel and fission chambers were transferred offsite during 2002, and the start-up sources were transferred offsite during 2003.

By letter dated September 21, 2004, the licensee requested termination of the license as required by 10 CFR 50.82(b)(1). The licensee subsequently submitted a site radiological characterization report to the NRC by letter dated April 6, 2006. This report documented the results of a radiological survey that was completed during February 2003. Following its review of the licensee's documentation, the NRC requested additional information from the licensee by letter dated May 13, 2008. At the time of this inspection, the licensee had not responded to the NRC's request for additional information. After the NRC approves the decommissioning plan, the licensee will be allowed to decommission the reactor facility.

The permanently shutdown reactor was located in a cylindrical pool. Support equipment still in service included the pool water cleanup system, the ventilation system, and an area radiation monitor. The control console and most reactor process control instrumentation had been permanently removed from service. The licensee continued to maintain an operable pool water level alarm at the medical center switchboard. Doors to the facility were secured, and keys were controlled by the licensee.

1 Decommissioning Inspection Procedure for Materials Licensees (87104)

1.1 Inspection Scope

The purpose of the inspection was to determine if site activities were being conducted in accordance with license and regulatory requirements.

1.2 Observations and Findings

a. Management Oversight of Licensed Activities

Technical Specification (TS) 6.2.1 states that the Reactor Safeguards Committee (RSC) shall function to provide independent review and audit of facility activities. The inspector reviewed the licensee's RSC records for 2007-2008. The RSC met at least annually, and a quorum was always present.

Technical Specification 6.2.3 provides the RSC review functions. The RSC's review functions include determinations of whether proposed changes in the facility as described in the Safety Analysis Report require a license amendment per 10 CFR 50.59(c)(2). Since the previous inspection, the licensee revised the boundary of the reactor facility restricted area. The boundary is described in Safety Analysis Report Figure 3.2, Reactor Laboratory Basement. The licensee modified the restricted area boundary by converting one area within the restricted area into an unrestricted laboratory space and by installing a new boundary fence and gate. These modifications

resulted in a change to the restricted area boundary as shown in Figure 3.2. However, the RSC did not review this change prior to implementation. The licensee's failure to maintain records of the change in the facility, including a written evaluation which provides the bases for the determination that the change does not require a license amendment, was a violation of 10 CFR 50.59(d)(1) requirements (Violation 050-00131/0901-01).

Because the RSC had failed to review the boundary change prior to implementation, the licensee's representatives were not sure if the changes required prior NRC approval. Further, TS Section 6.7.2(2) states that a written report to the NRC is required within 30 days for significant changes in the Safety Analysis Report. Because the change was not reviewed by the RSC, the licensee was unable to confirm during the inspection if the change to the boundary was significant and was required to be reported to the NRC. The boundary change may have been significant because the licensee free-released a portion of the radiologically restricted area when it changed the boundary. In response to this finding, the licensee stated that it would submit the boundary change to the RSC for formal review in the near future to ensure that the change was made in compliance with TS and 10 CFR 50.59 requirements. The NRC will review the RSC's conclusions about this issue during a future inspection.

Site staffing requirements are presented in TS Figure 6-1, "Facility Organization." Most positions continued to be filled by hospital staff, including all management level positions. The reactor operator positions were no longer staffed because the reactor was permanently shut down. The licensee ended the operator training and retraining programs because the licensee no longer maintained an operations staff. The radiation safety functions, as specified in TS 6.3, were being implemented by the hospital radiation safety officer and the reactor director/supervisor.

Section 6.7 of TS provides the reporting requirements. Section 6.7.2(2) states that a written report is required to be submitted to the NRC within 30 days for permanent changes in facility organization involving Level 1 or 2 personnel. Contrary to this requirement, the licensee made several changes to Level 1 and 2 personnel staff without reporting the changes to the NRC. These unreported staffing changes included the chief of staff and reactor director/supervisor positions. The licensee's failure to report changes in the facility organization to the NRC within 30 days was a violation of TS 6.7.2(2) requirements (Violation 050-00131/0901-02).

The audit requirements are provided in Section 6.4.2 of the TS. The licensee utilized an independent auditor to conduct the annual program reviews. The inspector reviewed the last two annual audits and determined that the audits covered most functional areas. The licensee also submitted annual operating reports to the NRC in accordance with TS 6.7.1 requirements.

b. Operational Oversight of Reactor and its Support Systems

Technical Specification 3.1.4 requires the licensee to maintain a minimum height of water above the reactor core. This specification stipulates that a float alarm switch has to be operable with a visual and audible alarm at the medical center switchboard and a visual alarm on the reactor console. The licensee continued to maintain an alarm at the switchboard, although the licensee no longer maintained an alarm at the console. The licensee's failure to maintain an operable alarm at the console was not safety significant

because the restricted area is no longer routinely staffed by licensee personnel. If the water level were to unexpectedly drop below the alarm set-point, the alarm would actuate at the switchboard, a position that is constantly staffed. The inspector noted that the licensee continued to test the functionality of the water level alarm on a routine basis. In accordance with Section IV of the NRC Enforcement Policy, the licensee's failure to maintain the control console alarm in an operable condition, as required by TS 3.1.4, constitutes a violation of minor significance and is not subject to formal enforcement action. During the inspection, the licensee stated that it would request an amendment to TS 3.1.4 in the near future to remove the requirement for the console alarm.

The reactor pool water is required to be sampled for gross radioactivity on a monthly basis per TS 4.3.1. In addition, the licensee is required to sample the water for identification of radioactive isotopes on a quarterly basis. The licensee's recent sample results indicate that the amount of radioactivity in the water was non-detectable. However, the licensee failed to collect monthly water samples during February 2009 and October 2009. The licensee's failure to sample the reactor water for gross activity on an average monthly basis during 2009 was a violation of TS 4.3.1 requirements (Violation 050-00131/0901-03). Although the licensee's auditor identified this violation during his November 2009 audit, the inspector noted that the licensee had not formulated prompt and comprehensive corrective actions to prevent recurrence of the problem by the date of this inspection. Further, the inspector noted that the licensee did not have a formal program in place at the time of the inspection for tracking and documenting the collection of water samples, a programmatic weakness that may have contributed to the missed sampling events.

Technical Specification 4.3.2 states that the pool water will be sampled weekly for conductivity and monthly for pH. The licensee's records indicate that the licensee has collected and analyzed the required samples. The water pH remains within TS limits, although, the conductivity of the pool water continues to exceed the TS limit. According to TS 3.3, the licensee would not be allowed to operate the reactor with high conductivity levels. Since the reactor was permanently shut down, the licensee was not required to take any particular action to bring conductivity down. Further, the conductivity limit was established to minimize fuel cladding corrosion and activation of impurities in the water. Since the reactor has been permanently shut down and the fuel has been permanently removed, high water conductivity is no longer a reactor safety issue.

Pool water level is required to be maintained a minimum distance above the reactor core per TS 3.3. At the time of the inspection, the water level was above the minimum water level. Also, TS 4.3.3 states that a monthly channel test shall be performed to ensure that the water level alarm float switch specified in TS 3.1.4 is operable. The licensee demonstrated how it tested the float switch during the inspection. The licensee had sufficient records to demonstrate that it had tested the float switch alarm system in recent months.

The ventilation system is required to be tested monthly per TS 4.5. This test includes the automatic absolute damper and associated alarm system. The licensee explained how this test was conducted during the site tour, and the licensee had sufficient records to demonstrate that this test had been conducted in recent months.

Operational procedures were required to be implemented by TS 6.4. The inspector reviewed the licensee's procedures. The inspector noted that the procedures were

applicable for reactor operations, but not long-term shutdown operations. The licensee utilized these operational procedures, as required by TS 6.4, but disregarded the steps that were clearly applicable to plant operations. During the inspection, the licensee's representative stated that the licensee would consider revising the procedures to clearly specify the operational requirements for shutdown conditions.

c. Site Tours

Technical Specification 5.1(1) specifies that the reactor laboratory basement room shall be considered a restricted area with locked doors and entrances controlled by reactor laboratory personnel. During the inspection, the licensee was noted to be maintaining control over the area with locked doors and entrances. As noted above, one laboratory space had been removed from the restricted area. The licensee continued to control public access to this space through the use of locked doors. During the inspection, the licensee conducted an audit of individuals with keys to the restricted area and verified that keys had been issued only to those individuals who may have a need to access the restricted area.

The inspector conducted radiological surveys of the restricted areas using a Ludlum Model 2401-EC2 survey meter (NRC 21115G, with calibration due date of 10/09/10). The area radiation levels were less than 1 millirem per hour in all areas. Radiological postings were in place, but some signs were noted to be faded. Although the restricted area was not normally occupied by site personnel, the licensee stated during the inspection that it would update the postings in a timely manner.

At the time of the inspection, the reactor pool water level was 8 inches from the top of the pool. This level is considered normal by the licensee. The licensee stated that water had to be added to the pool as necessary due to evaporation. During the inspection, the water pH was 7.4 with a limit of 7.5. As noted above, water conductivity levels continued to remain above the TS limit. Finally, the most recent water radioactivity sample results were below the detection limit of the measuring equipment.

d. Implementation of Radiation Protection Program

The inspector conducted a review of the licensee's radiation protection program. The licensee has suspended the occupational monitoring, bioassay, and whole-body counting programs. The licensee suspended the programs, as allowed by 10 CFR 20.1502, due to the lack of work involving radioactive materials in the reactor facility.

At the time of the inspection, the licensee used five dosimeters to monitor area ambient gamma radiation levels. The dosimeter records for 2008 were reviewed. The radiation levels varied from 8 millirems per year in the ventilation flow path to 19 millirems per year in the area adjacent to the reactor pool. These annual dose rates were well below the 100 millirems per year dose limit as specified in 10 CFR 20.1301 for individual members of the public.

Technical Specifications Section 4.6 states that all radiation monitors listed in TS 3.6.1 shall be calibrated annually and after maintenance. In accordance with TS 3.6.1, the licensee utilized two radiation monitors—an area radiation monitor and a continuous air monitor. The area radiation monitor was being calibrated annually and provided continuous monitoring of gamma radiation emanating from the pool. The licensee

discontinued maintaining the continuous air monitor during January 2006. The continuous air monitor was originally used to detect fission product gases emanating from the reactor fuel. Since the fuel has been permanently removed from the reactor, the licensee concluded that the continuous air monitor was no longer necessary based on current plant conditions. If needed, the licensee had access to calibrated survey meters from its 10 CFR Part 30 broad-scope medical license/permit. The licensee also maintained calibrated pocket ion chambers for use as needed.

The licensee's radiation protection program procedure required monthly wipe tests in the reactor laboratory room. To monitor for contamination, the licensee conducted monthly swipe samples at four randomly selected locations in the reactor room. These samples were analyzed via liquid scintillation. The licensee's records indicate that no extensive contamination existed at the facility with three minor exceptions. The licensee's auditor identified a contaminated 'hot' particle during the February 2009 survey. The particle was identified on a piece of masking tape that was suspected to have fallen off some equipment in the reactor facility. The particle was recovered and was being stored in a plastic bag in the restricted area. The auditor did not find any other particles during his November 2009 survey. The auditor recommended that the licensee analyze the particle by gamma spectroscopy for identification of the radionuclide content. The licensee had not implemented the auditor's recommendation by the time of this inspection. Also, the auditor noted two locations with elevated fixed contamination—the drain inside a vent hood and an activated wire behind lead bricks. These areas were properly posted and controlled by the licensee. The licensee is expected to dispose of these wastes during future decommissioning activities.

Amendment 11 to NRC License R-57 allowed the licensee to possess up to 8 curies of polonium-beryllium in the form of sealed sources. The licensee requested termination of the license by letter dated September 21, 2004. Section 1.4 of the letter states, in part, that all licensed radioactive sources were removed and properly disposed, with the exception of the americium-beryllium and polonium-beryllium sources. The inspector attempted to determine whether the licensee continued to possess these sealed sources. The licensee's records indicate that the americium-beryllium sources were transferred offsite during July 2003; however, at the time of the inspection, the licensee was unable to locate any receipt or disposal records for the polonium-beryllium sources. This issue was considered an unresolved item (URI 050-00131/0901-04) pending further review of archived records by the licensee to verify proper transfer or disposal of the sources. Alternatively, if no records are identified verifying actual receipt of the sources, the licensee may have to update its September 21, 2004, letter to the NRC.

e. Emergency Preparedness

Regulation 10 CFR 50.54(q) states, in part, that licensees authorized to possess and/or operate a research reactor shall follow and maintain in effect emergency plans which meet the requirements provided in Appendix E to 10 CFR Part 50. The inspector reviewed the licensee's emergency plan during the inspection, compared the plan to Appendix E requirements, and discussed the plan with licensee representatives. Regulation 10 CFR 50.54(q) further states that the research reactor licensee may make changes to these plans without Commission approval only if these changes do not decrease the effectiveness of the plans and the plans, as changed, continue to meet the requirements of Appendix E to this part. Also, proposed changes that decrease the effectiveness of the NRC-approved emergency plans may not be implemented without

application to and approval by the Commission. If a change is made without approval, the licensee shall submit a report of each change within 30 days after the change is made. The inspector noted that the licensee recently revised the emergency plan twice, once during December 2008 and once during March 2009. In both situations, the RSC did not submit the changes to the NRC for prior approval, suggesting that the RSC had decided that the changes did not decrease the effectiveness of the plans. However, the licensee did not submit the changes or the revised emergency plans to the NRC within 30 days, a violation of 10 CFR 50.54(q) (Violation 050-00131/0901-05).

According to Appendix E, the emergency plan training program must provide for: (a) the training of employees and exercising, by periodic drills, of radiation emergency plans to ensure that employees of the licensee are familiar with their specific emergency response duties, and (b) the participation in the training and drills by other persons whose assistance may be needed in the event of a radiation emergency. This shall include a description of specialized initial training and periodic retraining programs to be provided to emergency personnel. Each licensee is also required to conduct an exercise of its emergency plan every 2 years. The inspector reviewed the March 2009 version of the emergency plan and compared the plan's contents to the requirements of Appendix E. The inspector also compared the March 2009 version of the emergency plan to the last NRC-approved emergency plan dated November 1999.

There were four accident scenarios still applicable to the facility—fire, natural phenomena, security, and loss of reactor pool water. The loss of pool water was still a credible accident scenario. A loss of pool water would result in a loss of shielding and possible increase in ambient gamma radiation levels. During 2006-2009, the licensee took credit of hospital drills for fire, tornado, and security. The licensee had not conducted a drill involving a loss of pool water since the last inspection in 2006. Further, during the previous inspection, documented in NRC Inspection Report 050-00131/06-201 dated March 23, 2006, the inspector opened an Inspection Follow-up Item (050-00131/06201-01) to verify that the licensee was conducting biennial emergency drills as required by the emergency plan. In addition, the licensee's auditor recommended that the licensee conduct a drill that exercises the emergency plan, including a loss of water incident.

In addition to the scenario drills, the inspector conducted a review of the licensee's training requirements as listed in the emergency plan. The inspector concluded that the licensee was not effectively implementing the training requirements specified in Appendix E to 10 CFR Part 50, in part, because the licensee had removed much of the training requirements from Section 10 of the emergency plan. The changes included removal of the initial training and retraining requirements for onsite and offsite personnel. Also removed were the requirements for an annual onsite and biennial offsite support drills specifically for the shutdown reactor. These changes, implemented prior to or during December 2008, reduced the effectiveness of the emergency plan. Thus, the changes required prior NRC approval before implementation. The licensee's failure to obtain prior NRC approval before removing most training requirements from the emergency plan, an action which reduced the effectiveness of the emergency plan, was the second example of a violation of 10 CFR 50.54(q) requirements (Violation 050-00131/0901-05). Because the licensee had reduced most of the training requirements, the licensee was not conducting initial training, refresher training, and site-specific drills as specified in regulations. As a result, the licensee was not testing the adequacy of timing and content of implementing procedures and methods, testing emergency equipment and communications networks, testing the public notification system, and

ensuring that emergency organization personnel were familiar with their duties as required by 10 CFR Part 50, Appendix E requirements.

1.3 Conclusions

Since the previous inspection, the licensee revised the boundary of the reactor facility restricted area by adding a laboratory space within the restricted area. The licensee's failure to maintain records of the change, including a written evaluation of the bases for the change, was a violation of 10 CFR 50.59 requirements. The licensee had staffed all positions. The licensee utilized the hospital radiation safety officer as needed to support compliance with the license. However, the licensee's failure to report permanent changes in the facility organization involving Level 1 and 2 personnel to the NRC within 30 days was a violation of TS 6.7.2(2). The licensee conducted routine audits of the license as required by TS 6.2.

The licensee continued to monitor reactor pool water quality and to maintain pool water level in accordance with TS 4.3. However, the licensee's failure to sample the reactor water during February and October 2009 was a violation of TS 4.3.1. The licensee continued to conduct functional tests of the pool water level and ventilation system interlocks as required by TS 4.3 and TS 4.5.

The restricted area was being controlled by the licensee. Ambient gamma radiation levels were low, and postings were conservative.

The licensee implemented its radiation protection program in accordance with TS 6.3 and 10 CFR Part 20 requirements. The inspector was unable to verify whether two polonium-beryllium sealed sources that were claimed to be in the possession of the licensee prior to September 21, 2004, were still in the possession of the licensee, had been transferred or disposed since 2004, or had never been possessed by the licensee. This issue was identified as an unresolved item pending additional information from the licensee.

The licensee revised its emergency plan during December 2008 and March 2009. However, the licensee did not submit a report of each change to the NRC within 30 days, a violation of 10 CFR 50.54(q) requirements. The licensee reduced the effectiveness of the emergency plan by eliminating most of the training requirements, a second example of a violation of 10 CFR 50.54(q) requirements.

2 **Exit Meeting**

The inspector reviewed the scope and findings of the inspection during an exit meeting that was conducted at the conclusion of the onsite inspection on December 2, 2009. The inspector presented the final exit briefing to the licensee on February 4, 2010. The licensee did not identify as proprietary any information provided to, or reviewed by, the inspector.

SUPPLEMENTAL INSPECTION INFORMATION

PARTIAL LIST OF PERSONS CONTACTED

Mike Christensen, Radiation Safety Officer (broad-scope license)
Fredrick Hamel, Deputy Associate Chief of Staff/Research
Dan McVicker, Reactor Director/Supervisor

INSPECTION PROCEDURES USED

IP 87104 Decommissioning Inspection Procedure for Materials Licensees

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

050-00131/0901-01	VIO	Failure of RSC to review changes to Safety Analysis Report
050-00131/0901-02	VIO	Failure to report changes in facility organization to NRC
050-00131/0901-03	VIO	Failure to collect two monthly water samples
050-00131/0901-04	URI	Unknown status of polonium-beryllium sources
050-00131/0901-05	VIO	Failure to submit revised emergency plans to NRC within 30 days and failure obtain NRC approval before reducing effectiveness of emergency plan

Closed

None

Discussed

050-00131/06201-01	IFI	Verify that licensee was conducting emergency drills as required by emergency plan
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LIST OF ACRONYMS

CFR	Code of Federal Regulations
IFI	NRC Inspection Follow-up Item
IP	NRC Inspection Procedure
kW(t)	kilowatts (thermal)
RSC	Reactor Safeguards Committee
TS	Technical Specifications
URI	NRC Unresolved Item
VIO	NRC Violation