

October 30, 2008

Dr. Howard D. Grimes  
Vice President for Research  
and Dean of the Graduate School  
Washington State University  
Pullman, WA 99164-1030

SUBJECT: NRC INSPECTION REPORT NO. 50-027/2008-203

Dear Dr. Grimes:

On October 13-15, 2008, the U.S. Nuclear Regulatory Commission (NRC) conducted an inspection at your Washington State University TRIGA Reactor Facility located in the Nuclear Radiation Center. The enclosed report documents the inspection results which were discussed on October 15, 2008, with Dr. Donald Wall, Director of the Nuclear Radiation Center and other members of the reactor staff.

The inspection examined activities conducted under your license as they relate to safety and compliance with the NRC's rules and regulations and with the conditions of your license. The inspector reviewed selected procedures and records, observed activities, and interviewed personnel. Based on the results of this inspection, no findings of significance were identified.

In accordance with Section 2.390 entitled "Public inspections, exemptions, requests for withholding," of Title 10 of the Code of Federal Regulations, a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Should you have any questions concerning this inspection, please contact Craig Bassett at 404-358-6515.

Sincerely,

**/RA/**

Johnny H. Eads, Jr., Branch Chief  
Research and Test Reactors Branch B  
Division of Policy and Rulemaking  
Office of Nuclear Reactor Regulation

Docket No.: 50-027  
License No.: R-076

Enclosures: NRC Inspection Report

cc w/encl: See next page

Washington State University

Docket No. 50-27

cc:

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Executive Policy Division  
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Test, Research, and Training  
Reactor Newsletter  
University of Florida  
202 Nuclear Sciences Center  
Gainesville, FL 32611

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**ACCESSION NO.: ML083030233**

**TEMPLATE #: NRR-106**

OFFICE	PRTB:RI	PRT:LA	PRTB:BC
NAME	CBassett chb	EBarnhill eeb	JEads jhe
DATE	10/28/2008	10/28/2008	10/30/2008

**OFFICIAL RECORD COPY**

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

Docket No: 50-027

License No: R-076

Report No: 50-027/2008-203

Licensee: Washington State University

Facility: TRIGA Reactor Facility

Location: Nuclear Radiation Center  
Pullman, WA

Dates: October 13-15, 2008

Inspector: Craig Bassett

Approved by: Johnny H. Eads, Branch Chief  
Research and Test Reactors Branch B  
Division of Policy and Rulemaking  
Office of Nuclear Reactor Regulation

## EXECUTIVE SUMMARY

Washington State University  
Nuclear Radiation Center  
Report No.: 50-027/2008-203

The primary focus of this special, announced inspection was the onsite review of reactor start-up activities following conversion of the reactor to the use of low-enriched uranium fuel. The secondary focus of this inspection was review of selected aspects of the licensee's 1 Megawatt Class II research and test reactor safety program including: organizational structure and staffing, review and audit and design control functions, reactor test operations, fuel handling, maintenance and surveillance, procedures, and radiation protection. As a result of the inspection it was noted that the reactor start-up was progressing as stipulated by the licensee's Conversion Plan, and the licensee's safety program was acceptably directed toward the protection of public health and safety.

### Organizational Structure and Staffing

- The organizational structure and responsibilities were consistent with Technical Specification Section 6 requirements.

### Review and Audit and Design Control Functions

- The Reactor Safeguards Committee reviewed the conversion from the use of high-enriched uranium to low-enriched uranium fuel and reviewed and approved the procedures described in the conversion plan which had been prepared by General Atomics.

### Operations

- Operational activities were consistent with applicable Technical Specifications and procedural requirements.

### Fuel Handling

- Fuel handling activities and documentation were as required by Technical Specifications, facility procedures, and special Conversion procedures.

### Maintenance and Surveillance

- Maintenance logs, records, performance, and reviews satisfied Technical Specifications and procedure requirements.
- The surveillance checks and Limiting Conditions for Operation verifications satisfied Technical Specifications requirements and licensee administrative controls.

### Procedures

- Facility procedural review, revision, control, and implementation satisfied Technical Specification requirements.

Radiation Protection Program

- Surveys were being completed and documented acceptably to permit evaluation of the radiation hazards present.
- Postings met the regulatory requirements specified in 10 CFR Parts 19 and 20.
- Personnel dosimetry was being worn as required and doses were well within the licensee's procedural action levels and NRC's regulatory limits.

## REPORT DETAILS

### Summary of Plant Status

Washington State University's one megawatt research and test reactor was recently authorized to convert from the use of high-enriched uranium (HEU) to low-enriched uranium (LEU) fuel. Following the conversion, the licensee initiated various tests and surveillances to ensure that the fuel, the reactor, and the support systems were operating as anticipated. The reactor was then to continue operations in support of irradiation work for various experiments and organizations, operator training, and surveillance. During the inspection, the reactor was started up, operated for testing, and shut down as required and in accordance with applicable procedures to check out and test various reactor systems.

### 1. Organizational Structure and Staffing

#### a. Inspection Scope (Inspection Procedure [IP] 69001)

The inspector reviewed the following regarding the licensee's organization and staffing to ensure that the requirements of Sections 6.1-6.4 of Technical Specifications (TS), Amendment Number (No.) 20, dated September 30, 2008, were being met:

- Staff qualifications and management responsibilities
- Selected portions of the Reactor Console Logbooks for the past 6 months
- Washington State University (WSU) Nuclear Radiation Center organizational structure and staffing
- WSU Nuclear Radiation Center Administrative Procedure Number (No.) 1, "Responsibilities and Authority of Reactor Operating Staff," (not dated)
- Letter from the Nuclear Regulatory Commission to the Licensee – "Issuance of Order Modifying License No. R-76 to Convert from High- to Low-Enriched Uranium Fuel (Amendment No. 20) – Washington State University TRIGA Reactor," EA-08-250, dated September 4, 2008

#### b. Observations and Findings

The inspector reviewed the latest license amendment for the facility which was Amendment No. 20 dated September 30, 2008. The amendment included various changes to the facility TS. However, it was noted that the requirements specified for the WSU Nuclear Radiation Center organizational structure and the responsibilities of the reactor staff had not changed. The inspector noted that the current licensed reactor staff continued to be composed of the Facility Director, the Reactor Supervisor, and an Engineering Technician, as well as three student assistants. The Facility Director and the Reactor Supervisor were Senior Reactor Operators (SROs) while the Engineering Technician and the three students were Reactor Operators (ROs). It was also noted that various other students were currently in training to become ROs or SROs.

The organizational structure and staffing at the facility were as required by TS. Qualifications of the staff met TS and ANS 15.4, "Standard for the Selection and Training of Personnel for Research Reactors," requirements. Review of records verified that management responsibilities were administered as required by TS and applicable procedures.

c. Conclusions

The organizational structure and functions were consistent with the requirements specified in TS Section 6.

**2. Review and Audit and Design Control Functions**

a. Inspection Scope (IP 69001)

In order to verify that the licensee had established and conducted reviews as required in TS Section 6.5.4, the inspector reviewed selected aspects of:

- Reactor Safeguards Committee (RSC) meeting minutes for 2008
- WSU Nuclear Radiation Center Administrative Procedure No. 3, "Approval and Review of Facility Modifications and Special Tests or Experiments," (not dated)
- Licensee Fuel Conversion Plan entitled, "Safety Analysis for the HEU (High-Enriched Uranium) to LEU (Low-Enriched Uranium) Conversion of the Washington State University Reactor," prepared by TRIGA Reactors Division of General Atomics – ESI (Electronic Systems, Inc.) and dated June 2008 containing, among other things, Appendix A entitled "LEU (30/20) Startup Plan," which detailed:
  - Initial Criticality
  - Critical Mass and Criticality Conditions for the 30/20 LEU Core
  - Initial Control Rod Calibration Tests
  - Final Core Loading/Final Rod Calibrations
  - Calorimetric Reactor Power Calibration
  - Initial Approach to Full Power
  - Pulsing Mode of Operation
- Letter from the Nuclear Regulatory Commission to the Licensee – "Issuance of Order Modifying License No. R-76 to Convert from High- to Low-Enriched Uranium Fuel (Amendment No. 20) – Washington State University TRIGA Reactor," EA-08-250, dated September 4, 2008

b. Observations and Findings

The inspector verified that RSC membership satisfied TS requirements and that the RSC had semiannual meetings as required. Review of the committee meeting minutes indicated that the RSC provided appropriate guidance and direction for reactor operations, and ensured suitable use and oversight of the reactor.

Review of the committee meeting minutes also indicated that the RSC had met to consider the HEU to LEU Conversion Plan and related documents prepared by General Atomics. In September 2008, the RSC reviewed and approved the Conversion Plan and associated procedures as required.

c. Conclusions

The RSC approved the conversion from the use of HEU to LEU fuel as described in the Conversion Plan which had been prepared by General Atomics.

### 3. Operations Prior To and Following Conversion to LEU Fuel

#### a. Inspection Scope (IP 69001)

The inspector reviewed selected aspects of the following to verify compliance with TS Sections 3 and 4, applicable facility procedures, and special Conversion procedures:

- Staffing for operations as recorded on the Reactor Log sheets
- Observation of selected test operations activities on October 14 & 15, 2008
- Reactor Operating Log (O.1) sheets from September and October 2008, entitled "WSU Nuclear Radiation Center Reactor Log," Nuclear Radiation Center Form No. 22, latest form Revision (Rev.) dated March 2004
- Selected entries on Reactor Start-Up Checkoff (O.3) forms entitled WSU Nuclear Radiation Center Form No. 34, "WSU Reactor Start-Up Checkoff," latest form Rev. dated January 2, 2007
- WSU Nuclear Radiation Center Standard Operating Procedure (SOP) No. 1, "Standard Procedure for Use of the Reactor," dated November 29, 2006
- WSU Nuclear Radiation Center SOP No. 4, "Standard Procedure for Startup, Operation, and Shutdown of the Reactor," dated September 30, 2005
- Licensee Fuel Conversion Plan entitled, "Safety Analysis for the HEU to LEU Conversion of the Washington State University Reactor," prepared by TRIGA Reactors Division of General Atomics – ESI and dated June 2008 containing, among other things, Appendix A entitled "LEU (30/20) Startup Plan," with the following associated procedures:
  - Conversion SOP No. 1, "Relocating Wet Fuel Storage Racks for Core Unloading"
  - Conversion SOP No. 2, "WSU Nuclear Radiation Center Reactor Unload Plan for the Conversion to LEU"
  - Conversion SOP No. 3, "WSU Nuclear Radiation Center Reactor LEU Assembly and Transport Plan"
  - Conversion SOP No. 4, "WSU Nuclear Radiation Center Reactor Reload Plan for the Conversion to LEU"
  - Conversion SOP No. 5, "Core 35-A Reactor Restart Procedure"
- Letter from the Nuclear Regulatory Commission to the Licensee – "Issuance of Order Modifying License No. R-76 to Convert from High- to Low-Enriched Uranium Fuel (Amendment No. 20) – Washington State University TRIGA Reactor," EA-08-250, dated September 4, 2008

#### b. Observations and Findings

Routine reactor operations using HEU fuel were terminated on September 19, 2008, when the reactor was shut down. Following a cool down period which lasted over the weekend, graphite reflector and fuel cluster unloading of the core began on September 22, 2008. Once all the graphite and fuel had been removed from the core, the licensee began to reload graphite reflectors back into the core. Some new graphite reflectors and some previously used reflectors were used in this process.

On September 29, 2008, a fuel cluster, containing a new 30/20 instrumented fuel element and three new regular 30/20 LEU fuel elements, was loaded into the reactor core. Fuel loading operations, following a specifically developed and approved sequence, continued during the first week in October and the licensee used 1/M Plots

to monitor and maintain control over this process in their approach to critical. On October 7, with 79 fuel elements loaded, initial criticality was achieved as had been expected. By October 8 all required fuel had been successfully loaded into the core.

Since October 8, reactor test operations have continued following written procedures and in accordance with TS requirements. The inspector verified that the log entries required to be made by the TS and procedures were logged and cross referenced with other logs and/or forms and that TS operational limits had not been exceeded. Shift staffing satisfied the minimum requirements for duty and on-call personnel.

The inspector conducted observations of the reactor staff on October 14 and 15, 2008. The inspector noted that the licensed reactor operators were knowledgeable and competent. Observation of operational activities also confirmed that reactor operations, including start-ups, routine operations, and shutdowns, were carried out in accordance with written procedures and TS requirements. Adherence to procedures was acceptable.

It was noted that the licensee was required by the NRC Order to submit a Reactor Startup Report to the NRC within 6 months following return of the converted reactor to normal operation. As of the date of this inspection, this was still pending but the licensee was fully aware of this requirement and was planning to make this submission when all testing had been completed and the reactor was returned to routine operations.

c. Conclusions

The operational activities were found to be consistent with applicable TS and procedural requirements.

**4. Fuel Handling for Conversion to Low-Enriched Fuel**

a. Inspection Scope (IP 69001)

The inspector reviewed selected aspects of the following to ensure that the licensee was complying with TS Sections 4.4, 5.1, and 5.2:

- Core Change Log (O.6)
- SNM (Special Nuclear Material) Log
- Core Reactivity Parameters Log (O.7)
- WSU Special Nuclear Material Physical Inventory Log sheets for 2008
- WSU Nuclear Radiation Center Reactor Log sheets for September and October 2008
- WSU Nuclear Radiation Center Administrative Procedure No. 9, "Special Nuclear Material Accountability Plan," dated May 1989
- WSU Nuclear Radiation Center SOP No. 7, "Standard Procedure for Core Changes and Fuel Movement," dated August 25, 2005
- WSU Nuclear Radiation Center SOP No. 8, "Standard Procedure for Control Element Maintenance, Removal, and Replacement," dated February 17, 1995
- Licensee Fuel Conversion Plan entitled, "Safety Analysis for the HEU to LEU Conversion of the Washington State University Reactor," prepared by TRIGA Reactors Division of General Atomics – ESI and dated June 2008 containing,

among other things, Appendix A entitled "LEU (30/20) Startup Plan," with the associated procedures:

- Conversion SOP No. 1, "Relocating Wet Fuel Storage Racks for Core Unloading"
- Conversion SOP No. 2, "WSU Nuclear Radiation Center Reactor Unload Plan for the Conversion to LEU"
- Conversion SOP No. 3, "WSU Nuclear Radiation Center Reactor LEU Assembly and Transport Plan"
- Conversion SOP No. 4, "WSU Nuclear Radiation Center Reactor Reload Plan for the Conversion to LEU"
- Conversion SOP No. 5, "Core 35-A Reactor Restart Procedure"
- Letter from the Nuclear Regulatory Commission to the Licensee – "Issuance of Order Modifying License No. R-76 to Convert from High- to Low-Enriched Uranium Fuel (Amendment No. 20) – Washington State University TRIGA Reactor," EA-08-250, dated September 4, 2008

b. Observations and Findings

The inspector noted that, when the new LEU fuel elements had been received at the facility, each element was inspected for imperfections as required. The elements were then stored in a secure location until the conversion process was initiated. The fuel conversion process involved transferring the elements from storage to the Pool Room where they were assembled into fuel clusters. The clusters were then loaded into the core and placed in specifically assigned locations.

Standard facility procedures and special Conversion procedures used by the licensee for fuel movement ensured controlled operations for unloading the old core and loading the new core, Core 35-A, which was a mixed core of new 30/20 LEU fuel elements and 8.5/20 standard LEU fuel elements. A detailed plan for performing the fuel unloading and new fuel reloading had been developed and approved prior to the fuel movement operations as required by the TS. Through records review and interviews with licensee staff, the inspector determined that the unloading and reloading had proceeded as required by the applicable procedures and that all the information was properly documented.

The inspector noted that the data recorded for fuel movements that had been conducted during the conversion operations were acceptable and were required to be cross referenced in the operations logs. Log entries, indicating fuel movements, were completed under the direct supervision of an SRO as required. Through records review and interviews with licensee personnel, the inspector determined that the various fuel movement operations had been conducted in accordance with the standard facility procedures and the special Conversion SOPs.

c. Conclusions

The fuel handling activities and documentation were as required by facility TS, facility procedures, and special Conversion procedures.

## 5. Maintenance and Surveillance Following Conversion

### a. Inspection Scope (IP 69001)

To verify compliance with TS Sections 3, 4, and 5, the inspector reviewed selected aspects of:

- Control Element Calibration Log (O.4)
- Control Element Inspection Log (O.5)
- Core Reactivity Parameters Log (O.7)
- 1/M Plot developed during fuel loading
- Power Calibration Log forms (in O.2) for 2007 and 2008
- WSU Nuclear Radiation Center Reactor Operating Log (O.1) sheets for September and October 2008
- WSU Nuclear Radiation Center SOP No. 4, "Standard Procedure for Startup, Operation, and Shutdown of the Reactor," dated September 30, 2005
- WSU Nuclear Radiation Center SOP No. 5, "Standard Procedure for Performing Preventive Maintenance on the Reactor and Associated Equipment," dated September 29, 2005
- WSU Nuclear Radiation Center SOP No. 8, "Standard Procedure for Control Element Maintenance, Removal, and Replacement," dated February 17, 1995
- WSU Nuclear Radiation Center SOP No. 13, "Standard Procedure for Performing Power Calibrations," dated September 30, 2005
- WSU Nuclear Radiation Center SOP No. 15, "Standard Procedure for Control Element Calibration," dated December 4, 2003
- Licensee Fuel Conversion Plan entitled, "Safety Analysis for the HEU to LEU Conversion of the Washington State University Reactor," prepared by TRIGA Reactors Division of General Atomics – ESI and dated June 2008 containing, among other things, Appendix A entitled "LEU (30/20) Startup Plan," with the associated procedures:
  - Conversion SOP No. 1, "Relocating Wet Fuel Storage Racks for Core Unloading"
  - Conversion SOP No. 2, "WSU Nuclear Radiation Center Reactor Unload Plan for the Conversion to LEU"
  - Conversion SOP No. 3, "WSU Nuclear Radiation Center Reactor LEU Assembly and Transport Plan"
  - Conversion SOP No. 4, "WSU Nuclear Radiation Center Reactor Reload Plan for the Conversion to LEU"
  - Conversion SOP No. 5, "Core 35-A Reactor Restart Procedure" which contained instructions on the following:
    - + Rod Drop Blade Worth Estimation by the Negative Period Method
    - + Blade or Control Rod Calibrations in accordance with WSU Nuclear Radiation Center SOP No. 15
    - + Perform Shutdown Margin calculations in accordance with WSU Nuclear Radiation Center SOP No. 5 and Determine Core Excess
    - + Calorimetric Power Calibrations at 25% and 75% Power
    - + 125% Power SCRAM Check
    - + Pulsing Checks and Procedure Set Points

b. Observations and Findings

(1) Maintenance

The Inspector noted that routine and preventive maintenance required by the Conversion Plan was controlled by, and documented in, the maintenance or reactor operations logs consistent with the TS and licensee procedures. Verifications and operational systems checks were performed following completion of the maintenance to ensure system operability before the equipment was returned to service.

(2) Surveillance

The Inspector determined that the various checks, tests, and verifications required by the Conversion Plan and for TS required Limiting Conditions for Operations (LCOs) were completed as required. These included Blade Worth Estimations, Control Rod Calibrations, Shutdown Margin calculations, Core Excess determinations, and Calorimetric Power Calibrations. On October 15, 2008, the inspector observed as the licensee carefully completed the 125% power SCRAM check as required. All observed and recorded results reviewed by the inspector were within prescribed TS and procedure parameters and in close agreement with expected results.

c. Conclusions

The maintenance logs, records, performance, and reviews satisfied TS and procedure requirements. The surveillance checks and LCO verifications satisfied TS requirements and licensee administrative controls.

**6. Procedures**

a. Inspection Scope (IP 69001)

The inspector reviewed selected aspects of the following to verify that the licensee was complying with the requirements of TS Sections 6.5.4 and 6.8:

- Selected administrative and standard operating procedures
- Administrative controls as outlined in WSU Nuclear Radiation Center Administrative Procedure No. 2, "Approval, Revision, and Review of Standard Operating Procedures," (not dated)
- Licensee Fuel Conversion Plan entitled, "Safety Analysis for the HEU to LEU Conversion of the Washington State University Reactor," prepared by TRIGA Reactors Division of General Atomics – ESI and dated June 2008 containing, among other things, Appendix A entitled "LEU (30/20) Startup Plan," with the associated procedures:
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- Conversion SOP No. 4, "WSU Nuclear Radiation Center Reactor Reload Plan for the Conversion to LEU"
- Conversion SOP No. 5, "Core 35-A Reactor Restart Procedure"

The inspector also observed the use and implementation of procedures by licensee personnel.

b. Observations and Findings

Procedures were available for those tasks and activities specified in the TS. In addition, as noted above, procedures had been prepared for the conversion from HEU to LEU fuel. These procedures, Conversion Procedures No. 1-5, were reviewed and approved by the RSC as required by the TS and were signed by the Acting Chair of the RSC on September 10, 2008.

Training of personnel on procedures and the conversion operations was verified and appeared to be acceptable. Through observation of reactor operations and the 125% power SCRAM check, the inspector verified that personnel conducted procedural and TS activities in accordance with applicable procedures.

c. Conclusions

Procedural review, revision, control, and implementation satisfied TS requirements.

**7. Radiation Protection Program**

a. Inspection Scope (IP 69001)

The inspector reviewed the following to verify compliance with 10 CFR Parts 19 and 20, TS Sections 3.7, 5.4, and 6.8, and procedural requirements:

- Nuclear Radiation Center dosimetry records for 2008
- Radiation and contamination survey records completed during the conversion period and documented on the appropriate forms
- WSU Nuclear Radiation Center SOP No. 10, "Standard Procedure for Health Physics Surveys," last revised August 25, 2005
- WSU Nuclear Radiation Center Administrative Procedure, "Radiation Protection Program," dated August 2001 and the ALARA Policy outlined therein
- Washington State University Radiation Protection Program Manual dated March 15, 1994

The inspector also toured the facility and observed the use of dosimetry and radiation monitoring equipment. Licensee personnel were interviewed and radiological signs and postings were observed as well.

b. Observations and Findings

(1) Surveys

The inspector reviewed selected weekly general area radiation and contamination surveys of the Pool Room and the Beam Room conducted during the conversion operations. Various special surveys were also completed during replacement of the pulse rod. The surveys had been completed by licensee personnel as required by WSU Nuclear Radiation Center SOP No. 10. The results were documented on the appropriate forms and evaluated as required. No anomalies were noted.

(2) Postings and Notices

The inspector reviewed the postings at the entrances to various controlled areas including the Control Room, the Pool Room, the Beam Room, and various laboratories in the Nuclear Radiation Center. The postings were acceptable and copies of current survey maps posted at the entrances to the areas indicated the radiation and contamination hazards present. Other postings also showed the industrial hygiene hazards present in the areas. The facility's radioactive material storage areas were noted to be properly posted. No unmarked radioactive material was detected in the facility. Copies of current notices to workers required by 10 CFR Part 19 were posted on various bulletin boards throughout the facility including in the stairway leading to the Control Room, in the Reactor Shop area, and in the Conference Room as well.

(3) Dosimetry

The inspector determined that the licensee was provided optically stimulated luminescent (OSL) dosimeters for whole body monitoring of beta and gamma radiation exposure (with an additional component to measure neutron radiation). The licensee was also provided thermoluminescent dosimeter (TLD) finger rings for extremity monitoring. The dosimetry was supplied by the campus Radiation Safety Office and processed by a National Voluntary Laboratory Accreditation Program (NVLAP) accredited vendor (Landauer).

Records of the OSL and TLD results indicating radiological exposures at the facility during the conversion operation were not available during this inspection due to fact that dosimetry for the reactor staff was collected and processed monthly. However, through interviews with reactor staff personnel the inspector determined that the doses received were most likely low because the great majority of the work was performed underwater in the reactor pool and/or with fresh, unirradiated fuel. The records showed that the highest annual whole body exposure received by a single individual through June 2008 was 140 millirem (mrem) deep dose equivalent (DDE). The highest annual extremity exposure for that period was 540 mrem shallow dose equivalent (SDE) and the highest skin or other shallow dose was 149 mrem SDE. The doses received by staff members and those who helped during the conversion will be the subject of review during the next inspection at the facility.

#### (4) Facility Tours

The inspector toured the Control Room, Pool Room, Beam Room, and selected support laboratories and offices. Control of radioactive material and control of access to radiation and high radiation areas were acceptable. The postings and signs for these areas were appropriate.

#### c. Conclusions

The inspector determined that the Radiation Protection Program being implemented by the licensee satisfied regulatory requirements because: 1) surveys were being completed and documented acceptably; 2) postings met regulatory requirements; and 3) personnel dosimetry was being worn as required and doses were within the NRC's regulatory limits.

### **8. Exit Interview**

The inspection scope and results were summarized on October 15, 2008, 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.

## **PARTIAL LIST OF PERSONS CONTACTED**

### **Licensee Personnel**

A. Choiniere	Reactor Operator
C. Hines	Reactor Supervisor
K. Marley	Engineering Technician III and Reactor Operator
J. Smith	Reactor Operator
D. Wall	Director, Nuclear Radiation Center

### **Other Personnel**

J. Cloran	Interim Director, WSU Radiation Safety Office
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## **INSPECTION PROCEDURES USED**

IP 69001	Class II Research and Test Reactors
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## **ITEMS OPENED, CLOSED, AND DISCUSSED**

### **Opened**

None

### **Closed**

None

## **PARTIAL LIST OF ACRONYMS USED**

CFR	Code of Federal Regulations
DDE	Deep dose equivalent
HEU	High enriched uranium
IP	Inspection Procedure
LCO	Limiting Condition for Operations
LEU	Low enriched uranium
mrem	millirem
No.	Number
NRC	Nuclear Regulatory Commission
OSL	Optically stimulated luminescent (dosimeter)
RO	Reactor Operator
RSC	Reactor Safeguards Committee
RSO	Radiation Safety Office
SDE	Shallow dose equivalent
SOP	Standard Operating Procedure
SRO	Senior Reactor Operator
TLD	Thermoluminescent dosimeter
TS	Technical Specifications
WSU	Washington State University