May 24, 2007

Dr. Patrick D. Gallagher, Director
NIST Center for Neutron Research
National Institute of Standards and Technology
U.S. Department of Commerce
100 Bureau Drive, Mail Stop 8561
Gaithersburg, MD 20899-8561

SUBJECT: NRC INSPECTION REPORT NO. 50-184/2007-201

Dear Dr. Gallagher:

This letter refers to a routine inspection conducted from April 27 to May 3, 2007, at your Research Reactor Facility. The inspection included a review of activities authorized for your facility. The enclosed report presents the results of that inspection.

Areas examined during the inspection are identified in the report. Within these areas, the inspection consisted of selective examinations of procedures and representative records, interviews with personnel, and observations of activities in progress. Based on the results of this inspection, no safety concerns or noncompliance with NRC requirements were identified. No response to this letter is required.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure 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 Web site at http://www.nrc.gov/reading-rm/adams.html.

Should you have any questions concerning this inspection, please contact Marcus H. Voth at 301-415-1210.

Sincerely,

/RA/

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

Docket No. 50-184
License No. TR-5

Enclosure: NRC Inspection Report No. 50-184/2007-201

cc w/enclosure: See next page

Letter to Patrick D. Gallagher from Johnny Eads dated : May 24, 2007

SUBJECT: NRC INSPECTION REPORT NO. 50-184/2007-201

cc:

Environmental Program Manager III
Radiological Health Program
Air & Radiation Management Adm.
Maryland Dept of the Environment
1800 Washington Blvd
Suite 750
Baltimore, MD 21230-1724

Director, Department of State Planning
301 West Preston Street
Baltimore, MD 21201

Director, Air & Radiation Management Adm.
Maryland Dept of the Environment
1800 Washington Blvd., Suite 710
Baltimore, MD 21230

Director, Department of Natural Resources
Power Plant Siting Program
Energy and Coastal Zone Administration
Tawes State Office Building
Annapolis, MD 21401

Marilyn J. Praisner, President
Montgomery County Council
100 Maryland Avenue
Rockville, MD 20850

Dr. Wade Richards, Manager of Operations
and Engineering
NIST Center for Neutron Research
National Institute of Standards and Technology
U.S. Department of Commerce
100 Bureau Drive, Mail Stop 8561
Gaithersburg, MD 20899-8561

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

Dr. Patrick D. Gallagher, Director
NIST Center for Neutron Research
National Institute of Standards and Technology
U.S. Department of Commerce
100 Bureau Drive, Mail Stop 8561
Gaithersburg, MD 20899-8561

SUBJECT: NRC INSPECTION REPORT NO. 50-184/2007-201

Dear Dr. Gallagher:

This letter refers to a routine inspection conducted from April 27 to May 3, 2007, at your Research Reactor Facility. The inspection included a review of activities authorized for your facility. The enclosed report presents the results of that inspection.

Areas examined during the inspection are identified in the report. Within these areas, the inspection consisted of selective examinations of procedures and representative records, interviews with personnel, and observations of activities in progress. Based on the results of this inspection, no safety concerns or noncompliance with NRC requirements were identified. No response to this letter is required.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure 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 Web site at http://www.nrc.gov/reading-rm/adams.html.

Should you have any questions concerning this inspection, please contact Marcus H. Voth at 301-415-1210.

Sincerely,

/RA/

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

Docket No. 50-184
License No. TR-5

Enclosure: NRC Inspection Report No. 50-184/2007-201
cc w/enclosure: See next page

Distribution

PUBLIC PRTB r/f RidsNrrDprPrtb AAdams
RidsOgcMailCenter BDavis (cover letter only)(O5-A4)

ACCESSION NO.: ML071430004 **TEMPLATE #: NRR-106**

OFFICE	PRTB:RI	PRTB:LA	PRTB:BC
NAME	MVoth:rxf	EHylton	JEads
DATE	05/18/2007	05/ 24 /2007	05/ 24 /2007

OFFICIAL RECORD COPY

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

Docket No:	50-184
License No:	TR-5
Report No:	50-184/2007-201
Licensee:	National Institute of Standards and Technology (NIST)
Facility:	National Bureau of Standards Reactor (NBSR)
Location:	Gaithersburg, Maryland
Dates:	April 27 to May 3, 2007
Inspector:	Marcus H. Voth, Lead Inspector Daniel S. Collins Johnny H. Eads Jennifer M. Golder
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

National Institute of Standards and Technology
Research Reactor Facility
NRC Inspection Report No.: 50-184/2007-201

This routine, announced inspection included on-site review of the licensee's programs concerning organization and staffing, operations and maintenance; review and audit functions and design changes; experiments; procedures; surveillance; fuel movement; reactor operator licenses, requalification and medical examinations; emergency preparedness; radiation protection; effluent and environmental monitoring; and transportation. Specific findings in each of these areas include:

Organization and Operations and Maintenance Activities

- The inspector found the operations and maintenance activities reviewed to be adequate. The organization and staffing met license requirements.

Review and Audit and Design Change Functions

- The inspector found that the Safety Evaluation Committee was functioning in accordance with license requirements and that the design review process was fulfilling license and regulatory requirements.

Experiments

- The elements of the licensee's experimental program which the inspector reviewed were in compliance with regulatory and license requirements.

Procedures

- The inspector found the procedures selected for his review to fulfill license requirements.

Surveillance

- The inspector determined that the surveillance program was being effectively executed.

Fuel Movement

- The licensee's fuel handling program was being executed in accordance with license requirements.

Operator Licenses, Requalification and Medical Activities

- The licensee's requalification program for licensed reactor operators was being conducted in accordance with the requalification plan and regulatory requirements.

Emergency Preparedness

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

Radiation Protection

- The licensee's radiation protection program was in compliance with regulatory and license requirements.

Effluent and Environmental Monitoring

- The licensee monitored releases to the environment in accordance with regulatory requirements and reported compliance with regulatory limits.

Transportation Activities

- The licensee now has an approved quality assurance plan for using NRC-certified shipping containers and has contracted for new fuel delivery using a container certified until October 1, 2008.

REPORT DETAILS

Summary of Plant Status

The licensee's National Institute of Standards and Technology (NIST) Center for Neutron Research (NCNR) Test Reactor, a 20-megawatt Class 1 test reactor technically designated as the National Bureau of Standards Reactor (NBSR), was operated continuously at full power throughout the inspection in support of laboratory experiments and various types of research, primarily neutron beam experimentation.

1. Organization and Operation and Maintenance Activities

a. Inspection Scope (Inspection Procedure [IP] 69006)

To verify that the licensee was operating the reactor and conducting operations in accordance with the requirements specified in Sections 2 and 3 of the NBSR Technical Specifications (TS), the inspector reviewed selected portions of the following:

- Reactor Console Logbook No. 123, November 6, 2006 to February 13, 2007
- Reactor Console Logbook No. 124, February 13, 2007 to present
- Reactor Shift Supervisor Logbook No. 33
- Operations Report No. 59 for the NBSR, Annual Report for the Period from January 1, 2006 through December 31, 2006, issued March 20, 2007
- Administrative Rules (AR)
- Technical Specification Procedures

To verify that the licensee was complying with the requirements specified in Section 7.1 of the NBSR TS, the inspector reviewed aspects of the following:

- Organizational Diagram
- List of Senior Operators
- Administrative Rules 1.0, Responsibilities of Operations Personnel
- AR 2.0, Personnel Requirements

b. Observations and Findings

The operating logs and records were clear and provided an indication of operational activities. The Chief of Reactor Operations reviewed the log books weekly. The logs and records indicated that the shift staffing was as required by TS 7.1.

Through review of Reactor Shift Supervisor Logbook No. 33, the inspector learned that on January 12, 2007, while the reactor was operating, the licensee installed new starting batteries on both emergency diesel generators (EDG) during the same shift. The Console Logbook No. 123 entries for that same day

and shift made no mention of these maintenance activities, and the surveillance records for that day did not contain any tests of the EDGs' automatic start capability. The facility records did not indicate that the automatic start capability of the EDGs was tested until January 15, 2007, when the monthly EDG test was performed per TS 5.8.1.

The inspector questioned the licensee regarding work control throughout the maintenance process and post-maintenance testing to verify compliance with TS 3.10 which requires the operability of at least one EDG while the reactor is operating. The licensee explained that while not explicitly stated in the procedures or logs, it is understood among operators that part of the process of replacing batteries is to verify proper voltage across the EDG starter terminals as the post-maintenance determination of operability.

The licensee stated that there had been no organizational changes implemented since the last NRC announced inspection in November of 2006. The inspector determined that the licensee's Administrative Rules are consistent with the requirements of TS 7.1. The inspector noted, however, that the licensee's recall list of Senior Reactor Operators (SRO) had not been updated to reflect a recent departure of an SRO; the licensee informed the lead inspector that the list had been updated within two hours of the inspection exit briefing.

c. Conclusion

The inspector found the operations and maintenance activities reviewed to be adequate. The organization and staffing met license requirements.

2. Review and Audit and Design Change Functions

a. Inspection Scope (IP 69007)

The inspector reviewed the following to verify compliance with regulatory and license requirements:

- NCNR Safety Evaluation Committee (SEC) Minutes of Meeting No. 361, September 18, 2006
- Special Approval for Sample Irradiation in RT-2 Under Irradiation Request #25-331, D. Brown (Chairman, SEC Irradiations Subcommittee) through R. Lindstrom (Chairman, SEC) to P. Gallagher, July 17, 2006
- Recommendation for the Design Stage Experiment Review, J. Dura (Chairman, SEC Beam Tube Experiment Subcommittee) to P. Gallagher (NCNR Director), July 21, 2006
- Experiment Proposal 435: Neutron Imagining Facility (NIF) at RT-2 and Report on Hydrogen Safety for Fuel Cell Experiment, Memo from R. Lindstrom to P. Gallagher, February 16, 2006
- Experiment Proposal 436: Neutron Spin Rotation Experiment Running on NG-6 End Station, Memo from R. Lindstrom to P. Gallagher, March 9, 2006
- Engineering Change Notice (ECN) #491, Modification of Fuel Element Transfer Head, November 7, 2006

b. Observations and Findings

The inspector met with the outgoing chairman of the SEC, Dr. R. Lindstrom (who retired from NIST at the end of the week of the inspection), and the incoming chairman and current vice chairman of the committee, Dr. D. Gilliam. The transition appeared well planned.

The inspector reviewed the SEC documents identified above which indicated that the committee was performing its responsibilities pursuant to TS 7.2. The inspector also performed a cursory review of the entire ECN file with special emphasis on ECN #491 which addressed root causes of problems periodically experienced with fuel element transfer heads. The ECN process was found to effectively screen design changes pursuant to the requirement of 10 CFR 50.59.

c. Conclusion

The inspector found that the SEC was functioning in accordance with license requirements and that the design review process was fulfilling license and regulatory requirements.

3. Experiments

a. Inspection Scope (IP 69005)

The inspector reviewed the following to verify that the licensee was complying with the requirements of TS Section 4.0:

- Approved Rabbit System Operators, March 8, 2007
- Approved Irradiation Requests file
- Rabbit Request List
- Approved Irradiation Request/Proposal 2S437 and 2S438 by R. Lindstrom for the Irradiation of Al-28, N-14, Mg-27, Si-31, Cl-38 and Ca-49, August 3, 2006
- Reactor Console Logbook No. 123, November 6, 2006 through February 13, 2007

b. Observations and Findings

The inspector reviewed the above documents as a sample of the licensee's experimental program. The first document was certification of four individuals as having sufficient training and knowledge to perform rabbit system operations. The Rabbit Request List was a manual in the control room listing limitations on each of the materials, quantities, and irradiation times that have been approved for each experimental facility. This constituted an historic record of approved conditions whereby reactor operators could verify that requested experiments were within approved limits. While new facilities were continuously being evaluated for new experiments, most experiments were performed under the umbrellas established for previous experiments.

In reviewing the reactor log the inspector verified that an experiment performed in the R1 experimental facility on February 10, 2007 was done in accordance with the limitations recorded for the 2S336 class of experiment.

c. Conclusions

The elements of the licensee's experimental program which the inspector reviewed were in compliance with regulatory and license requirements.

4. Procedures

a. Inspection Scope (IP 69008)

The inspector reviewed the following to verify compliance with the requirements of TS 7.4:

- Administrative Rules for the NBSR
- NBSR Emergency Instruction Manual, Figure 6.3, Emergency Organization Phone Numbers, October 23, 2006
- TS Procedure (TSP) 5.8.1, Auto-Starting of Each Diesel Generator Under Partial Load, issued August 7, 2006
- TSP 5.8.2, Testing of Operable Diesel Generator when one Diesel Generator is Inoperable, issued July 27, 2004
- TSP 5.8.3, Reactor Emergency Power Testing Procedure, issued December 20, 1995
- TSP 5.8.4, Voltage and Specific Gravity of each Cell in the Station Battery, issued April 23, 1999
- TSP 5.8.4A, Battery Test discharge, issued April 23, 1999

b. Observations and Findings

The inspector found that the licensee maintained procedures in accordance with a set of administrative rules. Included were procedures for responses to annunciator alarms, TS procedures, emergency instructions, and a series of operating and refueling procedures. The inspector verified that the emergency contacts list included the correct phone number for the NRC Operations Center. The inspector chose a small set of procedures for an in-depth review to verify that the TS were supported appropriately by implementing procedures. The procedures selected during this inspection were those related to the emergency diesel generators because of the operational review of the battery replacement discussed in Section 1 of this report. The inspector found the procedures referenced to adequately serve that function.

c. Conclusions

The inspector found the procedures selected for his review to fulfill license requirements.

5. Surveillance

a. Inspection Scope (IP 69010)

The inspector reviewed the following to verify compliance with surveillance requirements stated in the TS Section 5.0:

- Surveillance Test Master List
- Surveillance Master Lists, November 2006 through April 2007
- TS Procedures
- TSP 5.8.1, Auto-Starting of Each Diesel Generator Under Partial Load, issued August 7, 2006
- TSP 5.8.2, Testing of Operable Diesel Generator when one Diesel Generator is Inoperable, issued July 27, 2004
- TSP 5.8.3, Reactor Emergency Power Testing Procedure, issued December 20, 1995
- TSP 5.8.4, Voltage and Specific Gravity of each Cell in the Station Battery, issued April 23, 1999
- TSP 5.8.4A, Battery Test discharge, issued April 23, 1999

b. Observations and Findings

The inspector made checks for completeness of the licensee's surveillance program. For each TS surveillance requirement randomly selected, the inspector verified that a corresponding requirement existed in the licensee's master list with an accompanying procedure to perform the surveillance in an appropriate manner. The inspector also did this for the diesel generator tests as discussed in Sections 1 and 4 of this report. The inspector also reviewed the master list which tracked surveillance tests to assure completeness. During the interval reviewed, November 2006 to April 2007, no missed surveillances were found.

c. Conclusions

The inspector determined that the surveillance program was being effectively executed.

6. Fuel Movement

a. Inspection Scope (IP 69009)

The inspector reviewed the following to verify compliance with Sections 3.7 and 3.8 of the licensee's TS:

- Operating Instruction (OI) 6.1, Fueling and Defueling Procedures, issued December 14, 2006
- OI 6.2, Operation th the Fuel Transfer System, issued January 14, 2005
- OI 6.3, Operation of the Spent Fuel Cutting Saw, issued April 23, 1999
- Reactor Console Logbook No. 121, May 7, 2006 to August 7, 2006
- Reactor Console Logbook No. 122, August 7, 2006 to November 5, 2006
- Reactor Console Logbook No. 123, November 6, 2006 to February 13, 2007
- Core Loading and D_2O Samples Record Book

b. Observations and Findings

The inspector selected fuel movements to investigate based on related activities discussed elsewhere in this report. Specifically, fuel movements were performed on March 27, 2006, so as to reduce dose in the vicinity of the R-2 experimental facility. This allowed work on the R-2 facility to proceed with the implementation

of As Low As Reasonable Achievable (ALARA) radiation exposure practices. The second topic for review was the fuel element transfer head design improvement. October 19, 2006, was one of a number of times that operators experienced problems latching fuel element #841; the element was ultimately discharged from service as a spent element on April 16, 2007. (These were the problems that resulted in the head re-design discussed in Section 2 of this report.) While attention was focused on the design improvement, procedure OI6.1, Fueling and Defueling Procedure, was updated. The comprehensive action taken by the licensee to address the latching difficulties demonstrated a proactive attitude toward problem resolution. The licensee demonstrated ALARA principles and proactive problem solving while performing fuel movements in accordance with procedural requirements.

c. Conclusions

The licensee's fuel handling program was being executed in accordance with license requirements.

7. Operator Licenses, Requalification and Medical Activities

a. Inspection Scope (IP 69003)

The inspector reviewed the following to verify compliance with 10 CFR Part 55 and the licensee's operator requalification plan:

- Reactor Operator Requalification Program for the NBSR, April 24, 1975, with amendments through July 8, 1993
- Individual reactor operator personal training and requalification files
- Reading material file for reactor operators
- Memos for Training Records

b. Observations and Findings

The inspector reviewed three randomly selected reactor operator personal training and requalification files. The files contained completed requalification exams, medical examinations, record of required reading material for requalification, and a record of training lectures attended. The required reading material included TS and license changes (if any), procedure changes, and ECNs. Medical examinations were given by a NIST physician who was knowledgeable of Section 7, Medical Certification and Monitoring of Certified Personnel, of ANSI 15.4-1988, Selection and Training of Personnel for Research Reactors. The physician reported results on a form prepared in accordance with the ANSI standard. The inspector found the requalification examination to be of equal or greater difficulty than NRC-administered operator examinations. He reviewed the file of an operator who initially failed a section of the examination and verified that additional training and re-examination was done in accordance with the approved requalification plan.

The Memos for Training recorded attendance at 13 different training sessions offered from February of 2006 to the time of the inspection. Each training session was offered multiple times to include all operators; each session was considered "in progress" until all operators had taken it.

In addition, general requalification training included such topics as transportation of radioactive material, crane operation and rigging, fork truck operation, and security.

c. Conclusions

The licensee's requalification program for licensed reactor operators was being conducted in accordance with the requalification plan and regulatory requirements.

8. Emergency Preparedness

a. Inspection Scope (IP 69011)

In order to verify compliance with the Emergency Plan, the inspector reviewed selected aspects of:

- NBSR Emergency Plan, dated September 30, 1982 with the latest revision dated April 28, 1997
- Emergency Instruction (EI) Manual (i.e., Emergency Plan Implementing Procedures)
- EI Manual, Figure 6.3, "Emergency Organization Phone Numbers," issued October 23, 2006
- Emergency response facilities, supplies, equipment, and instrumentation
- Records documenting annual emergency drills and biennial exercises

b. Observations and Findings

The Emergency Plan (E-Plan) in use at the reactor and support facilities was the same as the last version approved by the NRC. The E-Plan was being audited and reviewed biennially as required. Implementing procedures, contained in the EI Manual, were reviewed and revised as needed to effectively implement the E-Plan. Records indicated that annual drills and biennial exercises had been conducted and critiqued at the frequency required by the E-Plan. The inspector reviewed the list of emergency contact phone numbers and found that it was being maintained current. The inspector also performed a check of the emergency supply cabinet in the lobby and found supplies had been inventoried and instruments were within their calibration period. Emergency response facilities and equipment were being maintained as required. The agreement with the Bethesda Naval Medical Hospital for medical support in case of an emergency, originally signed December 22, 1983, was current and acceptable. Communications capabilities were acceptable with the support groups and were tested periodically.

Licensee personnel summarized a tabletop exercise that was conducted September 20, 2006, during which representatives of first responders, emergency management personnel and emergency support personnel from site, local, state and federal agencies met at the site and discussed their respective roles during a hypothetical emergency scenario. The licensee was conducting drills annually as stipulated in the E-Plan in order to test communications

procedures and check on the response of facility personnel to simulated radiological, industrial hazards, or security problems. The inspector verified that the drills were structured to involve the participation of off-site support agencies and personnel. Critiques were conducted following the drills to discuss and identify any strengths or weaknesses.

c. Conclusions

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

9. Radiation Protection

a. Inspection Scope (IP 69012)

The inspector reviewed the following to verify compliance with regulatory and license requirements:

- Health Physics Training Records for NCNR Personnel for 2006 and 2007
- Emergency Responders Training Records for 2004 and 2006

b. Observations and Findings

The inspector focused his review of radiation protection on activities that were not addressed in the November 2006 inspection and that had occurred since that inspection. The inspector accompanied a licensee health physicist on his routine survey of the experimental facilities. The licensee maintained knowledge of each experiment, anticipating where the highest radiation readings would be expected and what level to expect. Readings were recorded on a log sheet. Licensee personnel reportedly rotated duties periodically so the entire staff remained knowledgeable of conditions. Throughout the tour the inspector verified that warning signs were properly posted; survey instruments were readily available and within calibration; required postings for radiation workers were current and in appropriate places; that workers and facility users exhibited safe radiation work practices; and that ALARA principles were being implemented.

The inspector noted that the thermal shield coolant ring header, which had higher than desired readings in the previous inspection, was about the same, 80 mr/hr on contact and 30 mr/hr at 30 cm. The licensee described steps that had been taken to minimize the exposure to personnel while performing studies to identify the root cause and make a significant improvement. The inspector reviewed records to verify that NCNR workers, facility users and visitors received appropriate training in radiation protection and that consideration of pregnant women existed in the training program. The inspector also reviewed training material used for training emergency responders who may enter the facility and records of attendance in training sessions.

c. Conclusions

The licensee's radiation protection program was in compliance with regulatory and license requirements.

10. Effluent and Environmental Monitoring

a. Inspection Scope (IP 69004)

To verify compliance with TS requirements the inspector reviewed selected aspects of:

- Operations Report No. 59 for the NBSR, Annual Report for the Period from January 1, 2006, through December 31, 2006, issued March 20, 2007
- CY2006 Liquid Radioeffluent Release Data, January 29, 2007
- CY2005 Liquid Radioeffluent Release Data, January 11, 2006
- CY2005 Liquid Releases, December 30, 2005
- Stack Effluent Data, January through March 2007
- Stack Monitoring for Argon, Comparison of Tennelec TC534 and Ludlum Model 375 Stack Monitoring system, J. Tracy to file, February 16, 2006
- Sanitary Sewer Releases, 2006 and 2007
- Tritium Releases vs Quarter/Year, Q1-95 through Q1-07
- Argon Releases vs Quarter/Year, Q1-95 through Q1-07

b. Observations and Findings

The inspector reviewed reported effluent releases to the environment with special attention to trends (increases or decreases) and changes in process monitor responses. Releases reported by the licensee continue to remain at a fraction of release limits and show no unexpected changes.

c. Conclusions

The licensee monitored releases to the environment in accordance with regulatory requirements and reported compliance with regulatory limits.

11. Transportation Activities

a. Inspection Scope (IP 86740)

The inspector reviewed the following to assure compliance with the facility license and regulatory requirements:

- R. Lewis, NRC Inspection Report No. 71-0390/2007-201 and Notice of Violation, April 2, 2007

- W. Richards, NIST Packing and Shipping Quality Assurance Program, March 6, 2007

b. Observations and Findings

The NRC inspection report referenced above cited the licensee for shipping unirradiated reactor fuel in a shipping container designed by the licensee without having an approved quality assurance program. In response, the licensee submitted to the NRC the referenced quality assurance program for a registered

user of NRC-approved packages but not a designer or fabricator; the NRC approved this plan. The licensee had contracted a carrier who provided a certified Department of Transportation (DOT) container that is valid until October 1, 2008. The licensee continues to work with its contractor to assure reliable shipment of new reactor fuel after that date.

c. Conclusions

The licensee now has an approved quality assurance plan for using NRC-certified shipping containers and has contracted for new fuel delivery using a container certified until October 1, 2008.

12. Exit Meeting

The inspector presented the inspection results to licensee representatives at the conclusion of the inspection on May 3, 2007. The inspector discussed the observations for each area reviewed. The licensee acknowledged the findings and did not identify as proprietary any of the material provided to or reviewed by the inspector during the routine inspection.

PARTIAL LIST OF PERSONS CONTACTED

Licensee

Paul Bobik	Senior Reactor Operator
P. Brand	Chief of Reactor Engineering
D. Brown	Senior Health Physicist and Irradiation Subcommittee Chairman
F. Clark	Senior Reactor Operator
J. Clark	Health Physicist
G. Deardorff	Health Physics Training Records
C. Drewry	Engineer
P. Gallagher	Director of Center for Neutron Research
D. Gilliam	Incoming Chairman of the Safety Evaluation Committee
R. Lindstrom	Outgoing Chairman of the Safety Evaluation Committee

P. Liposky	Engineer
T. Mengers	Health Physics Group Leader
T. Myers	Chief of Reactor Operations
T. O'Brien	Health Physicist
W. Richards	Chief of Operations and Engineering
J. Tracy	Health Physicist

INSPECTION PROCEDURES USED

IP 69003	Class 1 Research and Test Reactor Operator Licenses, Requalification, and Medical Activities
IP 69004	Class 1 Research and Test Reactor Effluent and Environmental Monitoring
IP 69005	Class 1 Research and Test Reactors Experiments
IP 69006	Class 1 Research and Test Reactors Organization, Operations, and Maintenance Activities
IP 69007	Class 1 Research and Test Reactors Review and Audit and Design Change Functions
IP 69008	Class 1 Research and Test Reactor Procedures
IP 69009	Class 1 Research and Test Reactors Fuel Movement
IP 69010	Class 1 Research and Test Reactors Surveillance
IP 69011	Class 1 Research and Test Reactors Emergency Preparedness
IP 69012	Class 1 Research and Test Reactor Radiation Protection
IP 86740	Inspection of Transportation Activities

ITEMS OPENED, CLOSED, AND DISCUSSED

OPENED:

None

CLOSED:

None

DISCUSSED:

None

LIST OF ACRONYMS USED

10 CFR	Title 10 of the *Code of Federal Regulations*
ADAMS	Agencywide Document Access and Management System
ALARA	As Low As Reasonably Achievable
AR	Administrative Rule
CFR	Code of Federal Regulations
DOT	Department of Transportation
ECN	Engineering Change Notice
EDG	Emergency Diesel Generator
EI	Emergency Instruction
E-Plan	Emergency Plan
HP	Health Physics/Physicist
IP	Inspection Procedure

mr	milli-Roentgen
NBSR	National Bureau of Standards Reactor
NCNR	NIST Center for Neutron Research
NIF	Neutron Imaging Facility
NIST	National Institute for Standards and Technology
NRC	Nuclear Regulatory Commission
OI	Operating Instruction
SEC	Safety Evaluation Committee
SRO	Senior Reactor Operator
TS	Technical Specification
TSP	TS Procedure