



UNITED STATES
NUCLEAR REGULATORY COMMISSION

REGION II
SAM NUNN ATLANTA FEDERAL CENTER
61 FORSYTH STREET SW SUITE 23T85
ATLANTA, GEORGIA 30303-8931

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July 12, 2004

BWX Technologies, Inc.
ATTN: Mr. W. D. Nash, Vice President
and General Manager
Nuclear Products Division
P. O. Box 785
Lynchburg, VA 24505-0785

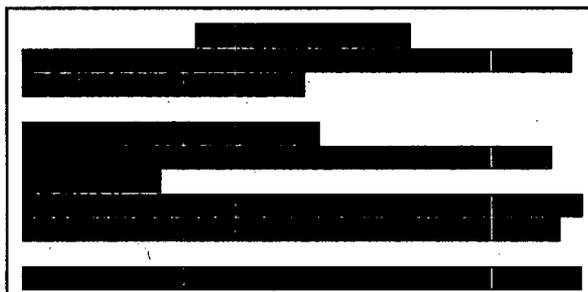
SUBJECT: NRC INSPECTION REPORT NO. 70-27/2004-004 AND NOTICE OF VIOLATION

Dear Mr. Nash:

This refers to the inspection conducted from May 2 through June 12, 2004, at the Nuclear Products Division facility. The purpose of the inspection was to determine whether activities authorized by the license were conducted safely and in accordance with NRC requirements. At the conclusion of the inspection, the findings were discussed with those members of your staff identified in the enclosed report.

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 observation of activities in progress.

Within the scope of the inspection, certain of your activities appeared to be in violation of NRC requirements, as specified in the enclosed Notice of Violation (Notice). The NRC has concluded that information regarding the reason for the violation, the corrective actions taken and planned to correct the violation and prevent recurrence is already adequately addressed on the docket in the enclosed inspection report. Therefore, you are not required to respond to this violation unless the description therein does not accurately reflect your corrective actions or your position. In that case, or if you choose to provide additional information, you should follow the instructions specified in the enclosed Notice.



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Should you have any questions concerning this letter, please contact us.

Sincerely,

/RA/

David A. Ayres, Chief
Fuel Facility Inspection Branch 1
Division of Fuel Facility Inspection

Docket No. 70-27
License No. SNM-42

- Enclosures: 1. Notice of Violation [REDACTED])
2. NRC Inspection Report (Part 1) [REDACTED]
3. NRC Inspection Report (Part 2) [REDACTED])

cc w/encls:
Leah R. Morrell
Manager, Licensing and Safety Analysis
BWX Technologies
P. O. Box 785
Lynchburg, VA 24505-0785

Distribution w/encls: (See Page 3)

[REDACTED]



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Distribution w/encls:

- D. Ayres, RII
- A. Boland, RII
- B. Gleaves, NMSS
- A. Gooden, RII
- J. Lubinski, NMSS
- G. Wertz, RII
- B. Westreich, NSIR

PUBLIC DOCUMENT (circle one): YES NO

OFFICE	RII:DFFI	RII:DFFI	RII:DFFI		
SIGNATURE			da (for)		
NAME	GWertz:vyg	AGooden	Classifier		
DATE	4/ /2008	4/ /2008	4/ /2008	4/ /2008	4/ /2008
E-MAIL COPY?	YES NO	YES NO	YES NO	YES NO	YES NO

OFFICIAL RECORD COPY DOCUMENT NAME: C:\ORPCheckout\FileNET\ML041940214.wpd



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NOTICE OF VIOLATION

BWX Technologies, Inc.
Lynchburg, Virginia

Docket No. 70-27
License No. SNM-42

During an NRC inspection conducted on May 2 through June 12, 2004, a violation of NRC requirements was identified. In accordance with the "General Statement of Policy and Procedures for NRC Enforcement Actions," NUREG-1600, the violation is listed below:

Safety Condition S-1 of NRC license SNM-42 authorizes the use of nuclear materials in accordance with Chapter 1-8 of the License Application submitted on July 14, 1995, and supplements thereto. Section 2.7 of the License Application states that activities at the site involving licensed material are conducted in accordance with written and approved procedures. Quality Work Instruction 15.1.5, "Shipment of Radioactive Materials," requires the radioactive material shipping program to be described in procedures written in accordance with applicable requirements.

Applicable requirements for use of the MTR-D shipping container were specified by Competent Authority Certification for Radioactive Materials Package Design Certificate USA/0611/B(U)F-85, Revision 0, and were reviewed and approved for use by the licensee in accordance with Radioactive Material Shipping procedure, RMS-08, "Fissile Material Authorizations," Attachment 19, "Container Specification and Inspection Report for Certificate of Competent Authority 0611, German Model MTR-D, Rev. 0." Included in the certification was handling instruction, HA-02-04, which specified that the container lid closure bolts were to be torqued to 40 newton-meters.

Contrary to the above, RMS-08 failed to incorporate the container lid closure requirement referenced in the above certification. As a result of an inadequate review, RMS-08 failed to specify that the operators should tighten the closure bolts to the required certification torque value.

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

The NRC has concluded that information regarding the reasons for the violation, the corrective actions taken and planned to correct the violation and prevent recurrence and the date when full compliance will be achieved is already adequately addressed on the docket in the enclosed inspection report. However, you are required to submit a written statement or explanation pursuant to 10 CFR 2.201 if the description therein does not accurately reflect your corrective actions or your position. In that case, or if you choose to respond, clearly mark your response as a "Reply to a Notice of Violation," and send it to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, D.C. 20555 with a copy to the Regional Administrator, Region II, within 30 days of the date of the letter transmitting this Notice of Violation (Notice).

[REDACTED]

Enclosure 1

[REDACTED]

[REDACTED]

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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, United States Nuclear Regulatory Commission, Washington, DC 20555-0001.

Your response will be considered sensitive information and will not be made available for public inspection in the NRC Public Document Room or in the NRC's document system (ADAMS).

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

Dated this 12th day of July 2004

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[REDACTED]

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U. S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket No.: 70-27

License No.: SNM-42

Report No.: 70-27/2004-004

Licensee: BWX Technologies, Inc.

Facility: Nuclear Products Division

Location: Lynchburg, Virginia

Dates: May 2 through June 12, 2004

Inspector: G. Wertz, Senior Resident Inspector
M. Baker, Headquarters Inspector

Approved by: David A. Ayres, Chief
Fuel Facilities Inspection Branch. 1
Division of Fuel Facility Inspection

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NRC INSPECTION REPORT 70-27/2004-04 (PART 1)

EXECUTIVE SUMMARY

BWX Technologies, Inc., Nuclear Products Division

This inspection included periodic observations conducted by the senior resident inspector during normal and off-normal shifts in the area of facility operations. A specialized inspection and review of documentation was conducted in the area of fire safety (May 10 through 14). The inspection results are included in Part 1 of this report.

Plant Operations

- The facility was operated safely and in accordance with regulatory and license requirements. The Emergency Operations Center and associated equipment were maintained in a state of readiness. Maintenance work was performed in accordance with radiation work permit requirements. Housekeeping was adequate to ensure routes of egress were clear in case of an emergency (Paragraph 2.a).
- Nuclear criticality safety control devices and measures were properly implemented (Paragraph 2.b).

Management Organization and Controls

- Quality Assurance audits of Nuclear Criticality Safety and [REDACTED] were extensive and detailed in their review of procedural and safety requirements. Corrective actions were appropriately identified, assigned a responsible manager, and tracked to completion (Paragraph 3).
- A weakness was identified in the [REDACTED] due to a repetitive problem associated with maintaining the current revisions of [REDACTED] (Paragraph 3).

Maintenance and Surveillance

- The repair of a low level radioactive liquid waste valve in the [REDACTED] was performed effectively and in accordance with the approved procedure. Workers were cognizant of the radiation hazards and pre-planned their work in order to minimize radiation exposure (Paragraph 4).

Fire Safety

- The licensee adequately maintained plant conditions within the design bases and performance capabilities of the existing engineered fire protection systems to minimize the risk and potential consequences of a fire in the fuel manufacturing buildings (Paragraph 5.a).
- [REDACTED]

- Inspection, testing, and maintenance of key fire protection components were adequately implemented to ensure the availability and reliability for performance of their intended safety functions (Paragraph 5.b).
- The Pre-Fire Plan was adequate for its intended purpose. The licensee had established emergency response equipment and staff to suppress a fire (Paragraph 5.c).
- Combustibles were controlled to minimize potential fire severity and propagation (Paragraph 5.d).
- The licensee's response to a minor roof fire was prompt and consistent with site emergency response procedures. Corrective actions required to prevent a recurrence were appropriate (Paragraph 5.e).
- The licensee's completed and planned corrective actions for a fire main leak were appropriate and adequate to ensure the integrity of the fire suppression system (Paragraph 5.e).

Transportation

- A violation was identified when a radioactive material shipping container was not loaded in accordance with the Certificate of Competent Authority for the container. Following NRC identification, the licensee took appropriate actions to incorporate the torque requirement into the loading procedure and properly torqued the lid closure bolts. Otherwise, the fuel assemblies were properly loaded for international transport (Paragraph 6).

Attachment:

Partial Listing of Persons Contacted
List of Items Opened, Closed and Discussed
Inspection Procedures Used
List of Acronyms

[REDACTED]

[REDACTED]

REPORT DETAILS

1. Summary of Plant Status

Routine fuel manufacturing operations and maintenance activities were conducted in the [REDACTED] processes, and in the [REDACTED] [REDACTED] facility.

2. Plant Operations (Temporary Instruction (TI) 2600/006)

a. Conduct of Operations - Routine Observations

(1) Inspection Scope

The inspector toured the licensee's facilities to observe various operational and work activities. Observed activities were assessed to determine if the facility was operated safely and in accordance with license and regulatory requirements. The inspector also checked the Emergency Operations Center (EOC) and associated equipment to determine if the facility was maintained in a state of readiness.

Housekeeping associated with the storage of equipment and materials throughout the facility was also reviewed for any significant potential hazards. The inspector performed a routine fire safety tour to verify that fire hazards were minimized especially in locations containing hazardous chemicals or [REDACTED] nuclear materials.

The inspector reviewed various operational procedures and records, radiation work permits (RWP), and nuclear criticality safety (NCS) postings, to determine if operations were performed safely and in accordance with approved plant procedures and postings.

(2) Observations and Findings

The inspector observed that specific operations were performed safely and in accordance with approved plant procedures and postings. Discussions with operations personnel confirmed an understanding of the procedural and posting requirements. The inspector verified that the EOC and associated equipment were maintained in a state of readiness.

Outside areas were toured and inspected. No conditions that could create an undesirable situation or hazard in the event of adverse weather (high winds, cold weather, or flooding), or blocked evacuation pathways were observed. During tours of the facility, the inspector noted radiological signs, postings, and procedures were properly posted or readily available. The inspector observed conditions and determined that equipment and devices used to confine and contain radioactive contamination and

[REDACTED]

airborne radioactivity in fuel processing, UR, and other material access areas (MAA) were in proper working condition, and that personal protective clothing and dosimetry were issued and properly worn. During process area tours, the inspector noted that emergency egress routes were adequately clear of debris.

(3) Conclusions

The facility was operated safely and in accordance with regulatory and license requirements. The EOC and associated equipment were maintained in a state of readiness. Maintenance work was performed in accordance with radiation work permit requirements. Housekeeping was adequate to ensure routes of egress were clear in case of an emergency.

b. Implementation of Process Safety Controls

(1) Inspection Scope

The inspector reviewed nuclear criticality control devices and measures in effect during the inspection period in order to assess the effectiveness of the licensee's program for prevention of an inadvertent criticality.

(2) Observations and Findings

The inspector toured fuel processing, storage, and recovery areas and observed that personnel complied with approved, written NCS limits and controls, especially in areas where the licensee was using administrative controls rather than passive or active engineering controls. The inspector verified NCS limits were posted and available to the operators. During tours of [REDACTED] areas of the facility, the inspector observed proper spacing practices and controls, use of storage locations, and identification of special nuclear material (SNM).

(3) Conclusions

NCS control devices and measures were properly implemented.

3. Management Organization and Controls (TI 2600/006)

a. Quality Assurance Audit Review

(1) Inspection Scope

SNM-42, License Application, Section 2.8.1.5, "Quality Assurance Audits" required the performance of quarterly internal Quality Assurance (QA) audits. License Application, Section 2.8.3.3, "QA Audit Reports" required QA audit findings to be evaluated for corrective actions, and tracked to completion. The inspector reviewed three QA audit

[REDACTED]

reports, including the corrective actions, in order to assess the effectiveness of the licensee's QA audit program.

(2) Observations and Findings

The QA audits involved: 1st Quarter 2004 Emergency Drill; Facility and Process Changes; and, NCS evaluations. The audits were performed in accordance with Quality Work Instruction 17.1.2, "Internal Audit Program." The inspector noted that the audit included review of an NRC-generated issue (availability of emergency preparedness manuals at the offsite EOC) and identification of one corrective action (CA) 2004-015 for outdated Emergency Preparedness Manual (EPM) documents in the EOC and Alternate EOC. The QA findings were assigned a responsible manager and entered into the licensee's commitment tracking system. The inspector reviewed selected findings and noted commitments were completed within the specified due date. The inspector concluded that the QA audits provided a comprehensive review of compliance to process, procedure and change management requirements in Emergency Preparedness, Facility Change and NCS functional areas.

However, the inspector noticed that the completion date for CA 2004-015 was 2006 and was concerned about the potential for recurrence of outdated EPM documents and the associated impact on emergency response. Contributing to the inspector's concern was that the problem appeared repetitive since it had recurred following a QA audit in 2003 (documented in CA-2003-055). The inspector reviewed controlled EPM documents in the EOC and Alternate EOC and identified several EPM notification forms and a copy of the Incident Assessment Flow Chart past their current revisions. In addition, the Lynchburg Technology Center (LTC) Pre-Fire Plan appeared past its required annual update as the cover page indicated that the last review was done December 2002. The inspector discussed these discrepancies with the safety manager who immediately removed the outdated EPM documents. A safety specialist indicated that the LTC Pre-Fire Plan had been reviewed as required in December 2003, but due to pending changes, the cover page had not been revised to reflect the review. Although use of any of the outdated EPM documents would not have reduced the effectiveness of the licensee's emergency response, the inspector concluded that the repetitive nature of the inadequate control of EPM documents had the potential to adversely affect emergency response and was a program weakness. The licensee entered the issue into the corrective action program as CA 2004-349.

(3) Conclusions

QA audits of NCS and [REDACTED] were extensive in their review of procedural and NCS requirements. Corrective actions were appropriately identified, assigned a responsible manager, and tracked to completion.

A weakness was identified in the Emergency Preparedness program due to a repetitive problem associated with maintaining the current revisions of EPM documents in the EOC and Alternate EOC.

4. **Maintenance and Surveillance (TI 2600/006)**

a. **Inspection Scope**

On May 5, an unexpected leak occurred on low-level radioactive (LLR) liquid waste valve, RP-01, located in the [REDACTED] Building. The inspector reviewed the repair activities and discussed the radiation protection provisions with the maintenance workers in order to assess the effectiveness of the licensee's maintenance program. In addition, the inspector reviewed the process operations active at the time of the leak.

b. **Observations and Findings**

[REDACTED]. Radiation protection took proper actions to minimize the amount of plant-generated effluent reaching the valve. The workers were cognizant of the potential radiological hazards posed by the leakage and acted to minimize their work duration by pre-staging replacement materials (bolts, gaskets) and pre-planning the repair which the inspector concluded was a good practice of minimizing exposure to radiation. The workers wore the necessary protective clothing and radiation monitoring (breathing zone) devices as specified in Environmental Protection (EP) procedure, EP-313, "General Maintenance for Low Level Radioactive Waste Treatment Operations." Radiation postings were consistent with radiation hazard and post-work surveys indicated minimal contamination in the work area.

The valve leaked during operation designed to flush acidic LLR effluent through an in-line radiation monitor as a corrective action (to CA 2003-0304) to reduce the monitor's background radiation readings. The flush was performed in accordance with procedure Radiation Protection (RP) 08-15, "Calibration and Maintenance of In-line Liquid Waste Monitors." The inspector reviewed the flush with the radiation control (RC) operator noting that, although the activity was adequately described by RP 08-15, some minor procedural discrepancies were observed (valve identification and drawing accuracy). The issues were discussed with the RP manager who planned to revise the procedure and drawing.

c. **Conclusions**

The repair of a LLR liquid waste valve in the [REDACTED] Building was performed effectively and in accordance with the approved procedure. Workers were cognizant of the radiation hazards and pre-planned their work in order to minimize radiation exposure.

5. **Fire Safety (Inspection Procedures (IP) 88055 and 88065)**

a. **Engineered Fire Protection Systems**

1. **Inspection Scope**

The inspector interviewed licensee staff, reviewed documentation, and evaluated plant conditions to ensure that they were within the design bases and performance capabilities of engineered fire protection systems. The inspector performed walkdowns and visual examinations of systems in plant areas where licensed material was stored and handled.

2. **Observations and Findings**

The inspector verified that automatic sprinkler systems were in service with no apparent impairments or material conditions of concern. Potential fire hazards in the sprinkler-protected areas were within the design bases discussed in the Integrated Safety Assessment (ISA), and would not challenge the performance capabilities to contain or suppress a fire. Control of hazards in areas adjacent to the sprinkler-protected areas was adequate to minimize the spread of a significant fire.

The automatic fire detection system for the fuel manufacturing process buildings was operable. Smoke detectors provided adequate coverage for early detection of a fire. The inspector observed no apparent material conditions of concern.

3. **Conclusions**

The licensee adequately maintained plant conditions within the design bases and performance capabilities of the existing engineered fire protection systems to minimize the risk and potential consequences of a fire in the fuel manufacturing buildings.

b. **Inspection, Testing, and Maintenance of Fire Protection Equipment**

1. **Inspection Scope**

The inspector performed walkdown inspections, interviewed licensee staff, and examined selected records for inspection, testing, and maintenance of key fire protection systems and equipment (including but not limited to fire hoses, diesel fire pumps, hose houses, sprinkler risers, standpipes, and portable extinguishers).

2. **Observations and Findings**

The inspector verified that the frequency and scope of activities were in accordance with National Fire Protection Association 25, "Inspection, Testing, and Maintenance of Water-based Fire Protection Systems."

The inspector confirmed that hose houses were furnished with hose in sufficient lengths and diameters, as well as the necessary wrenches, nozzles, and ancillary equipment in satisfactory condition.

3. Conclusions

Inspection, testing, and maintenance of key fire protection components were adequately implemented to ensure the availability and reliability for performance of their intended safety functions.

c. Fire Protection Response

1. Inspection Scope

The inspector interviewed selected licensee staff regarding the anticipated actions in the event of a fire at the facility, and examined selected fire protection response documentation and equipment.

2. Observations and Findings

The Nuclear Products Division (NPD) Pre-Fire Plan was accurate and represented as-found plant conditions. Controlled copies of the NPD Pre-Fire Plan were current. The inspector examined current copies of mutual aid agreements with both Concord Volunteer Fire Department and Lynchburg General Hospital, and confirmed that the distance and response time for support from the Concord Volunteer Fire Department agreed with those listed in the ISA documents.

The inspector confirmed that second and third shift security personnel had successfully completed Alternate Emergency Director training in February 2004, in order to ensure adequate availability of Emergency Directors during back shifts. The inspector confirmed that the emergency response vehicles were properly maintained and stocked with the required equipment. The inspector confirmed that battery powered emergency lighting equipment and exits were installed and maintained in compliance with 29 CFR 1910.37.

3. Conclusions

The Pre-Fire Plan was adequate for its intended purpose. The licensee had established emergency response equipment and staff to suppress a fire.

d. Control of Combustibles (88055)

1. Inspection Scope

The inspector reviewed safety procedures and performed walkdowns of various plant areas to assess the adequacy of the licensee's control of combustible material.

2. Observations and Findings

The inspector verified that flammable liquids were properly stored in appropriate cabinets. Storage of bulk quantities of flammable liquids and solvents was in designated outdoor locations in accordance with the Safety Manual and ISA documentation.

The inspector confirmed that cutting, welding, and grinding were performed in the designated shop areas. Portable fire extinguishers and metal fire extinguishing agents were located at appropriate locations within the fuel manufacturing buildings.

Housekeeping was adequate to control transient combustibles below levels which could result in a significant fire. During area tours, the inspector confirmed that the quantity of combustible material was generally below that which could cause a flashover (i.e., ignition of all combustibles within a room).

3. Conclusions

Combustibles were properly controlled to minimize potential fire severity and propagation.

e. Incident Investigation Review (IP 88065)

1. Inspection Scope

The inspector reviewed the circumstances and corrective actions for CA-2004-279 (involving a small roof fire on May 5, 2004) and CA-2004-061 (involving a fire main leak on January 27, 2004). The inspector interviewed licensee staff and reviewed various corrective action documents (Unusual Incident Reports, Ignition Source Permit, and detailed descriptions) in order to assess the effectiveness of the licensee's root cause and corrective actions.

2. Observations and Findings

The inspector examined the location of the roof fire and determined that the incident investigation report appeared to accurately reflect the event. The inspector confirmed that the licensee's response was consistent with plant safety procedures, including: "Initial Emergency Assessment Flow Chart;" Quality Work Instruction (QWI)-14.1.4,

“Unusual Incident Reports;” QWI-14.1.10, “Classification & Notification Criteria for Unusual Incidents;” and, ISA 15.27, “Fuel Element Fabrication Processes.”

The inspector reviewed the ignition source permit for the roofing repair and determined that the work and fire hazards had been properly evaluated. The fire resulted when sparks were drawn into combustible roofing material through a structural penetration (for a support pedestal) due to the negative air pressure of the building’s interior ventilation system. The roofers were unaware of the smoldering situation until the odor was detected by workers inside the building. The emergency team responded promptly and removed roofing cover until the smoldering material was exposed and extinguished. The inspector discussed the corrective actions with roofing supervisor who indicated that all roofing penetrations would be checked and sealed, if necessary, before further hot work was performed. The inspector determined the corrective action was adequate.

Based on interviews with licensee staff from both Industrial Engineering and Industrial Health & Safety departments, the inspector determined that the initial event response for the fire main leak was appropriate. The cause of the fire main leak was due to a loss of normal electrical power which caused both diesel-driven fire pumps to start and over-pressurized a section of the fire suppression piping. Immediate corrective actions included a restriction on hot work in the area affected by the fire main leak (non-radiological) until replacement of the fire main was completed. Longer term corrective actions include implementation of improved monitoring of fire suppression system activation and operation, and completion of a detailed system evaluation by an independent fire safety consultant. Although the longer term corrective actions were still pending, the inspector concluded the completed actions were appropriate to ensure the integrity of the fire suppression system.

3. Conclusions

The licensee's response to a minor roof fire was prompt and consistent with site emergency response procedures. Corrective actions required to prevent a recurrence were appropriate.

The licensee's completed and planned corrective actions for a fire main leak were appropriate and adequate to ensure the integrity of the fire suppression system.

6. Transportation (TI 2600/006)

a. Inspection Scope

The inspector observed the licensee's initial use of radioactive material package MTR-D transportation cask, in preparation for international shipment of four fuel assemblies. The inspector reviewed the U.S. Department of Transportation Competent Authority Certification (CAC) for Radioactive Materials Package Design Certificate

USA/0611/B(U)F-85, Revision 0, and the licensee's loading procedure in order to assess the adequacy of the loading process.

b. Observations and Findings

The use of the MTR-D transport cask was evaluated and approved in accordance with Safety Evaluation Request (SER) 03-089, "MTR-D Shipping Container." Instructions for transportation preparation, including loading, closure, labeling, and marking, required by both the CAC and SER, were delineated in Radioactive Material Shipping (RMS) procedure, RMS-08, "Fissile Material Authorizations," Attachment 19, "Container Specification and Inspection Report (CSIR) for Certificate of Competent Authority 0611, German Model MTR-D, Rev. 0." The inspector reviewed the CSIR and observed the operators load the authorized fuel assemblies. The inspector noted proper compliance with CSIR requirements by the operators. NCS postings controlling SNM in the fuel handling area had been properly revised to allow use of the MTR-D cask. Radiation surveys and inspection requirements were satisfied before and after fuel loading. Tamperproofing and labeling requirements were also properly performed.

The inspector reviewed handling instructions, HA-02-04, and noted that all the requirements were included in the CSIR with one exception. HA-02-04 container lid closure instructions included a specific bolt torque requirement (of 40 newton-meters) which was not listed in the CSIR (which only specified "tighten"). The inspector discussed the discrepancy with the transportation specialist who recognized the oversight and added the torque requirement to the CSIR. The inspector observed proper tightening of the container lid closure bolts to the specified torque.

The inspector reviewed the CSIR development process with the responsible transportation specialist who indicated that the lack of a bolt torque specification was an apparent omission as other certificate handling requirements had been captured in the CSIR. The inspector noted that a reviewer had questioned the lack of a torque requirement, but the CSIR originator failed to find any torque information in the certificate and processed the CSIR for approval in order to fulfill a completion deadline. The inspector concluded that omission of the critical torque requirement indicated less than effective attention to detail and an inadequate review of the CSIR. Immediate corrective actions (in CA 2004-352) included revision of the CSIR to incorporate the torque requirement, a review of other CSIR's for proper torque requirements, and training of transportation personnel on the issue. In addition, the inspector discussed the inadequate procedure review with the responsible safety manager who initiated CA 2004-430.

SNM-42, License Application, Section 2.7, required activities involving licensed material to be conducted in accordance with written and approved procedures. QWI 15.1.5, "Shipment of Radioactive Materials," required the radioactive material shipping program to be described in procedures written in accordance with applicable requirements. Both site safety review, SER 03-089, and container certification, CAC 0611, required package

loading in accordance with Handling Instructions, HA-02-04, which specified a torque requirement for the lid closure bolts. Failure to incorporate the lid closure bolt torque requirement into container loading procedure, RMS-08, Attachment 19, CSIR for German Model MTR-D Cask, was a violation (VIO) of NRC requirements and was cited as VIO 70-24/2004-04-01, Failure to Load a SNM Transportation Container in accordance with Applicable Requirements.

c. Conclusions

A violation was identified when a radioactive material shipping container was not loaded in accordance with the Certificate of Competent Authority. Following NRC identification, the licensee took appropriate actions to incorporate the torque requirement into the loading procedure and properly torqued the lid closure bolts. Otherwise, the fuel assemblies were properly loaded for international transport.

7. Exit Meeting

The inspection scope and results were summarized on May 14, and June 18, 2004, with W. Nash, Vice President and General Manager, and other members of the licensee's staff. Although proprietary documents and processes were occasionally reviewed during this inspection, the proprietary nature of these documents or processes was deleted from Part 1 of this report. No dissenting comments were received from the licensee.

[REDACTED]

[REDACTED]

ATTACHMENT

1. **LIST OF PERSONS CONTACTED**

Licensee

C. Abernathy, Supervisor, Nuclear Material Control
T. Artman, Industrial Engineering
W. Baker, Supervisor, Nuclear Materials Control
D. Baldwin, Recovery Operations
D. Bryant, Operations
W. Camm, Industrial Health & Safety
C. Carr, Manager, Administration and Security
J. Compher, Industrial Engineering
B. Davis, Security Specialist
T. Martin, Manager, Security Operations
S. McElroy, Industrial Health & Safety
L. Morrell, Licensing & Safety Analysis
J. Myrick-Jenkins, Industrial Health & Safety
W. Nash, Vice President and General Manager
H. Nicks, Manager, Security
J. Noel, Manager, NRC Security
S. Peters, Recovery Operations
P. Thornton, Industrial Health & Safety
M. Suwala, Manager, Nuclear Materials Control
D. Ward, Manager, Environment, Safety, Health and Safeguards
G. Ware, Mechanical Maintenance

Other licensee employees contacted included engineers, technicians, production staff, security, and office personnel.

2. **LIST OF ITEMS OPENED AND CLOSED**

<u>Item Number</u>	<u>Status</u>	<u>Description</u>
70-24/2004-04-01	Opened/Closed	VIO - Failure to Load a SNM Transportation Container in accordance with Applicable Requirements

3. **INSPECTION PROCEDURES USED**

TI 2600/006	Resident Inspection Program for Category I Fuel Cycle Facilities
IP 88055	Fire Protection
IP 88065	Incident Investigation

[REDACTED]

4. **LIST OF ACRONYMS USED**

CA	Corrective Action
CAC	Competent Authority Certification
CSIR	Container Specification and Inspection Report
EOC	Emergency Operations Center
EP	Environmental Protection
EPM	Emergency Preparedness Manual
IP	Inspection Procedure
ISA	Integrated Safety Analysis
LLR	Low Level Radioactive
LTC	Lynchburg Technology Center
MAA	Materials Access Area
NCS	Nuclear Criticality Safety
NPD	Nuclear Products Division
QA	Quality Assurance
QWI	Quality Work Instruction
RC	Radiation Control
RP	Radiation Protection
RTRT	Research Test Reactor and Targets
RWP	Radiation Work Permit
SER	Safety Evaluation Request
SNM	Special Nuclear Material
TI	Temporary Instruction
UR	Uranium Recovery
VIO	Violation