



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**  
REGION II  
245 PEACHTREE CENTER AVENUE NE, SUITE 1200  
ATLANTA, GEORGIA 30303-1257

October 30, 2012

EN 48091

Mr. B.J. Burch  
General Manager  
Babcock and Wilcox  
Nuclear Operations Group, Inc.  
P.O. Box 785  
Lynchburg, VA 24505-0785

**SUBJECT: BABCOCK AND WILCOX NUCLEAR OPERATIONS GROUP, INC. – NUCLEAR REGULATORY COMMISSION INTEGRATED INSPECTION REPORT 70-27/2012-004 AND NOTICE OF VIOLATION**

Dear Mr. Burch:

This refers to the inspections conducted from July 1 through September 30, 2012, at the Babcock and Wilcox (B&W) Nuclear Operations Group (NOG), Inc. facility in Lynchburg, VA. The purpose of the inspections was to determine whether activities authorized under the license were conducted safely and in accordance with Nuclear Regulatory Commission (NRC) requirements. The enclosed report presents the results of the inspections. The findings were discussed with members of your staff at exit meetings held on July 12, August 23, September 20 and October 1, 2012, for this integrated inspection report.

During the inspections, the NRC staff examined activities conducted under your license as they related to public health and safety and to confirm compliance with the Commission's rules and regulations, and with the conditions of your license. Areas examined during the inspections are identified in the enclosed report. Within these areas, the inspections consisted of selected examination of procedures and representative records, observations of activities, and interviews with personnel.

Based on the results of these inspections, the NRC has determined that one Severity Level IV violation of NRC requirements occurred. This violation was evaluated in accordance with the NRC Enforcement Policy. The current Enforcement Policy is included on the NRC's Web site at (<http://www.nrc.gov/about-nrc/regulatory/enforcement/enforce-pol.html>).

The violation is cited in the enclosed Notice of Violation (Notice) and the circumstances surrounding it is described in detail in the subject inspection report. The violation is being cited in the Notice because it was identified by the NRC.

You are required to respond to this letter and should follow the instructions specified in the enclosed Notice when preparing your response. If you have additional information that you believe the NRC should consider, you may provide it in your response to the Notice. The NRC review of your response to the Notice will also determine whether further enforcement action is necessary to ensure compliance with regulatory requirements.

In addition to the violation discussed above, a violation was also identified and treated as a Non-Cited Violation (NCV), consistent with Section 2.3.2 of the Enforcement Policy. The NCV is described in the subject inspection report. If you contest the violation, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001, with copies to: (1) the Regional Administrator, Region II; (2) the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and (3) the resident inspector at the B&W NOG facility.

In accordance with Title 10 of the Code of Federal Regulations (10 CFR) Section 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosures, and your response, if you choose to provide one, 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>. To the extent possible, your response should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the public without redaction.

Should you have any questions concerning these inspections, please contact us.

Sincerely,

*/RA/*

Alan J. Blamey, Chief  
Fuel Facility Inspection Branch 1  
Division of Fuel Facility Inspection

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

Enclosures:

1. Notice of Violation
2. NRC Inspection Report 70-27/2012-004  
w/Attachment: Supplementary Information

cc w/encls: (See page 3)

You are required to respond to this letter and should follow the instructions specified in the enclosed Notice when preparing your response. If you have additional information that you believe the NRC should consider, you may provide it in your response to the Notice. The NRC review of your response to the Notice will also determine whether further enforcement action is necessary to ensure compliance with regulatory requirements.

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X PUBLICLY AVAILABLE     NON-PUBLICLY AVAILABLE     SENSITIVE    X NON-SENSITIVE  
 ADAMS:  Yes    ACCESSION NUMBER: ML12305A173    X SUNSI REVIEW COMPLETE X FORM 665 ATTACHED

OFFICE	RII:DFFI	RII:DFFI	RII:DFFI	RII:DFFI	RII:DFFI	RII:DFFI	RII:DFFI
SIGNATURE	/RA/	/RA/	Via email	NPitoniak for	DH for	/RA/	Via email
NAME	RGibson	RPrince	JFisher	SMendez	MCrespo	DHartland	GSmith
DATE	11/ /2012	11/ /2012	11/ /2012	11/ /2012	11/ /2012	11/ /2012	11/ /2012
E-MAIL COPY?	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO

B. Burch

3

cc w/encls:

Charles A. England, Manager  
Licensing and Safety Analysis  
Babcock and Wilcox  
Nuclear Operations Group, Inc.  
P.O. Box 785  
Lynchburg, VA 24505-0785

Steve Harrison, Director  
Division of Radiological Health  
Department of Health  
109 Governor Street, Room 730  
Richmond, VA 23219

Letter to Mr. B. J. Burch from Alan J. Blamey dated October 30, 2012

SUBJECT: BABCOCK AND WILCOX NUCLEAR OPERATIONS GROUP, INC. – NUCLEAR  
REGULATORY COMMISSION INTEGRATED INSPECTION REPORT 70-27/2012-  
004 AND NOTICE OF VIOLATION

Distribution w/encls:

PUBLIC

A. Blamey, RII

M. Crespo, RII

D. Hartland, RII

R. Johnson, NMSS

S. Subosits, RII

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K. Ramsey, NMSS

## NOTICE OF VIOLATION

B&W NOG  
Lynchburg, VA

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

During an NRC inspection conducted from July 1, through September 30, 2012, a violation of NRC requirements was identified. In accordance with the NRC Enforcement Policy, the violation is listed below:

Safety Condition S-1 of NRC license SNM-42 authorizes the use of nuclear materials in accordance with Chapters 1 through 11 of the License Application submitted on March 31, 2011, and supplements thereto.

Chapter 5.1.2 of the License Application requires, in part, that activities at B&W NOG involving special nuclear material shall be performed in accordance with limits and controls established by Nuclear Criticality Safety (NCS). The administrative limits are provided in the area on NCS postings, in operating procedures, or both.

Section E of OP-0061234, "Maintenance in Uranium Recovery, Downblend and SFF/PDL Facility," Revision (Rev.) 44 requires, in part that containers less than 2.5 liters generated from maintenance activities be maintained in the Uranium Recovery facility with a fifteen-inch edge-to-edge spacing.

Section J, of OP- 0061135, "Waste Handling and Disposal Enrichment Blending and Uranium Recovery Facility," Rev. 32, requires, in part, that containers less than 2.5 liters of unknown U-235 content stored on the floor temporarily maintain a spacing of fifteen inches from all other fuel.

Contrary to the above, on August 22, 2012, the inspector identified that Uranium Recovery personnel had placed two pairs of containers of unknown quantities of special nuclear material less than 2.5 liters on the floor of Bay 14A with edge-to-edge spacing that was less than fifteen inches apart

This is a Severity Level IV violation (Section 6.2).

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

Enclosure 1

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.

Because your response will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> to the extent possible, it should not include any personal privacy, proprietary or safeguards information so that it can be made available to the public without redaction. If personal privacy or proprietary information is necessary to provide an acceptable response, then please provide a bracketed copy of your response that identifies the information that should be protected and a redacted copy of your response that deletes such information. If you request withholding of such material, you must specifically identify the portions of your response that you seek to have withheld and provide in detail the bases for your claim of withholding (e.g., explain why the disclosure of information will create an unwarranted invasion of personal privacy or provide the information required by 10 CFR 2.390(b) to support a request for withholding confidential commercial or financial information). If safeguards information is necessary to provide an acceptable response, please provide the level of protection described in 10 CFR 73.21.

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

Dated this 30<sup>th</sup> day of October 2012

U. S. NUCLEAR REGULATORY COMMISSION  
REGION II

Docket No.: 70-27

License No.: SNM-42

Report No.: 70-27/2012-004

Licensee: Babcock and Wilcox

Facility: Lynchburg Facility

Location: Lynchburg, VA 24505

Dates: July 1, through September 30, 2012

Inspectors: S. Subosits, Senior Resident Inspector  
R. Gibson, Senior Fuel Facilities Inspector (Section C.4)  
M. Crespo, Senior Fuel Facilities Inspector (Section B.1)  
G. Smith, Senior Resident Inspector (Section A.1)  
R. Prince, Fuel Facility Inspector (Section C.1)  
S. Mendez, Fuel Facility Inspector (Sections C.2 and C.3)  
J. Fisher, Fuel Facility Inspector (Section B.2)  
N. Pitoniak, Fuel Facility Inspector-In-Training (Sections C.2 and C.3)

Approved by: A. Blamey, Chief  
Fuel Facility Inspection Branch 1  
Division of Fuel Facility Inspection



## **EXECUTIVE SUMMARY**

Babcock and Wilcox  
NRC Integrated Inspection Report 70-27/2012-004  
July 1 – September 30, 2012

Inspections were conducted by the resident and regional inspectors during normal and off normal shifts in the areas of safety operations, radiological controls, and facility support. The inspectors performed a selective examination of licensee activities that were accomplished by direct observation of safety-significant activities and equipment, tours of the facility, interviews and discussions with licensee personnel, and a review of facility records.

### **Safety Operations**

- The items relied on for safety reviewed were properly implemented in order to perform their intended safety function in accordance with the license application and regulatory requirements. (Paragraph A.1)
- A violation was identified for a failure to maintain required spacing between containers stored on the Uranium Recovery floor. (Paragraph A.2)
- The licensee adequately implemented the fire protection elements reviewed and area housekeeping was maintained in accordance with fire safety requirements for special nuclear material processing areas, equipment, and storage areas. (Paragraph A.3)

### **Radiological Controls**

- The Radiation Protection program was implemented in accordance with the license application and regulatory requirements. (Paragraph B.1)
- The Environmental Protection program was implemented in accordance with the license application and regulatory requirements. (Paragraph B.2)

### **Facility Support**

- A non-cited violation was noted in the area of maintenance and surveillance of safety controls regarding the failure to perform an adequate post-modification test prior to placing a furnace temperature controller in service. (Paragraph C.1)
- An Unresolved Item was identified to review the licensee's extent of condition on change requests that were approved by the Originator in order to assess if any of those instances resulted in an inadequate procedure revision. (Paragraph C.2)
- The Operator Training/Retraining program was implemented in accordance with the license and regulatory requirements. (Paragraph C.3)
- The permanent plant modifications reviewed were implemented in accordance with the license and regulatory requirements. (Paragraph C.4)

- The licensee's emergency response organization adequately implemented emergency response actions in response to two separate chemical spill events at the facility (Paragraph C.5)

**Special Topics**

- The licensee adequately implemented corrective actions for a previous violation involving failure to identify an accident sequence for a credible Uranium Recovery accident scenario in the ISA. (Paragraph D.1)
- One reportable event occurred during the inspection period and the results of the follow-up inspection are documented in Inspection Report 70-27/2012-204. (Paragraph D.2)

**Attachment**

Key Points of Contact

List of Items Opened, Closed, and Discussed

Inspection Procedures Used

Documents Reviewed

List of Acronyms

## **REPORT DETAILS**

### **Summary of Plant Status**

During the inspection period, routine fuel manufacturing operations and maintenance activities were conducted in the fuel processing areas and in the Research Test Reactors and Targets (RTRT) facility. Routine operations were also conducted in the Uranium Recovery (UR) facility.

#### **A. Safety Operations**

##### **1. Plant Operations (Inspection Procedure (IP) 88135)**

###### **a. Inspection Scope and Observations**

The inspectors performed routine tours of the facility's manufacturing areas housing special nuclear material (SNM), reviewed shift turnover logsheets, and observed a shift turnover meeting. The inspectors interviewed operators, front-line managers, material control and accounting technicians, and process engineering personnel regarding issues with plant equipment and to verify the status of the process operations.

The inspectors observed operations in progress in the UR, Filler, and RTRT areas throughout the inspection period. The inspectors determined that the SNM processing workstations in service at the time of walkdowns in the Filler and RTRT areas were operated in accordance with operating procedures (OPs). The inspectors verified that leaks in the UR area were cleaned up in accordance with facility spill and leak response procedures.

During the inspection period, the inspectors interviewed five operators. Each of the operators and technicians interviewed demonstrated adequate knowledge of the nuclear criticality safety (NCS) posting requirements and the procedures associated with their assigned duties.

The inspectors conducted a safety system walkdown review of portions of the RTRT Fuel Manufacturing process area and the Low Level Dissolving process. The inspectors reviewed the safety significant controls and support systems related to the processing of SNM. The inspectors verified that the existing configurations of the systems were correct and that items relied on for safety (IROFS) were available and reliable to perform their function when needed to comply with the performance requirements of 10 CFR 70.61.

The inspectors reviewed six controls designated as IROFS as documented in the integrated safety analysis (ISA) and Safety Analysis Report (SAR) 15.6 for the Low Level Dissolver area and SAR 15.22 for the RTRT Fuel Manufacturing process, including supporting NCS evaluations and NCS releases, and verified their implementation in the field. During the walk downs, the inspectors verified that the IROFS controls for the two areas were properly implemented by reviewing the system configuration in the field and discussing the requirements of applicable operating procedures and NCS postings with operations personnel in the area.

The inspectors verified that essential support systems such as enclosure ventilation were operational and that adequate lighting was available to aid in the identification of safety or process hazards with the gloveboxes in RTRT and the process enclosure for the low level dissolver. The inspectors also verified that valves in the dissolver system reviewed were positioned correctly and did not show obvious signs of leakage.

b. Conclusion

No findings of significance were identified.

2. Nuclear Criticality Safety (IP 88135)

a. Inspection Scope and Observations

During daily tours of the Filler, UR, and the general shop floor areas, the inspectors verified that NCS controls and postings were in place and available to perform their intended functions. The inspectors reviewed a sample of three NCS-related IROFS in the UR area for implementation in the field. During their observations, the inspectors noted that the IROFS were properly implemented and that operations personnel complied with NCS posting requirements in the UR area. The inspectors also reviewed for accuracy five SNM mass log tracking sheets in SFF and RTRT and found the mass log entries matched the as-found inventories of the corresponding glovebox workstations.

The inspectors reviewed an NCS Safety Concern Analysis (NCS-2012-149) for an NCS issue identified in the UR area when an NCS engineer questioned the presence of solids in the high-level dissolving process product stream. A material specification IROFS for high-level dissolver product solutions required that solids be filtered out of the high-level dissolver contents prior to transfer to downstream columns. The UR area suspended dissolving operations and the licensee's NCS staff analyzed the condition.

The NCS concern analysis showed that the material specification IROFS was degraded, but that geometry of the columns and fixed spacing controls remained available to meet the performance requirements of 10 CFR 70.61. With a conservative amount of solids assumed present, the analysis also showed that under different combinations of interspersed moderation the license k-effective limit was not exceeded for credible upset conditions. The inspectors assessed the conclusions and determined that the NCS performance requirements were met.

Failure to Maintain Proper Spacing on Containers in the Uranium Recovery Floor Area

*Introduction:* An NRC-identified Severity Level IV violation of the B&W NOG license was identified on August 22, 2012, when the inspectors discovered two instances where containers less than 2.5 liters were stored on the UR area floor with improper edge-to-edge spacing. UR Operations generated a relatively large quantity of process solids during the most recent UR campaign with material from the Department of Energy's Y-12 Facility. As a result, significant material cleanouts of process and storage vessels occurred in August and September of 2012, in the UR area. These cleanout activities performed by UR maintenance and operations personnel resulted in the generation of a

multitude of bottles less than 2.5 liters that contained mostly process residues. UR area personnel began storing the containers temporarily on the area floors due to storage rack space availability being challenged at the time of the incident.

Section 5.1.2 of the License Application required, in part, that activities at B&W NOG involving SNM be conducted in accordance with limits and controls established by NCS. The administrative limits and controls were provided in the operating areas on NCS postings, in operating procedures, or both. Contrary to this requirement, UR personnel failed to adhere to a NCS spacing requirement intended to ensure against aggregating containers of unknown quantities of special nuclear material in close proximity to one another on the floor of the UR processing area.

*Description:* On August 22, 2012, the inspectors discovered two instances of containers less than 2.5 liters spaced less than 15 inches apart on the Bay 14A UR area floor. The inspectors brought the issue to the attention of the UR area supervisor on duty. The inspectors questioned the spacing requirement as NCS Posting 15-05-012 indicated the spacing requirement could be found in applicable operating procedures or NCS posting.

The inspectors verified that OP-0061135 and OP-0061234 contained the fifteen-inch spacing requirement for containers less than 2.5 liters applicable to storage on the UR area floor. Subsequently, the area supervisor contacted the UR Operations Unit Manager regarding the condition and the NCS staff was contacted as well. The containers were re-positioned by area personnel with the proper fifteen-inch spacing on the floor based on guidance received from NCS.

On August 27, 2012, a post-event critique was conducted to develop an event timeline, identify factors such as procedures, training and supervision that contributed to the event, and propose corrective actions to prevent a recurrence of the incident. A Level 2 corrective action (CA) CA201202482 was initiated by the licensee as well.

*Analysis:* The failure to follow an NCS procedural requirement for an operation with SNM was a violation of NRC requirements. The issue was more than minor because when the inspectors questioned four personnel assigned to the area, each individual believed that the spacing requirement for containers placed on the area floor was 12 inches and, at the time of discovery, the SNM content of the containers in violation of the spacing requirement was not known. The licensee later counted all the containers that were stored on the floor at the time of discovery and none of the containers exceeded administrative mass limits.

The inspectors evaluated this issue in accordance with the enforcement policy and the enforcement manual and noted that the violation was of very low safety significance because the performance criteria of 10 CFR 70.61 were always maintained. The as-found spacing of the containers did not adversely affect other relevant NCS IROFS such as mass or container geometry.

*Enforcement:* Chapter 5.1.2 of the License Application for License SNM-42 stated, in part, that activities at B&W NOG involving licensed material shall be conducted in accordance with written and approved procedures. Contrary to the above, on August 22, 2012, UR personnel placed two pairs of containers that were less than 2.5 liters in volume each, on the floor of Bay 14A with edge-to-edge spacing that was less than fifteen inches apart. As a result of the action, the spacing requirement of fifteen inches was not met for four containers of unknown SNM quantity.

In accordance with the NRC Enforcement Policy, violations that are less serious, but are of more than minor concern and resulted in no or relatively inappreciable potential safety or security consequences, are characterized as Severity Level IV violations. The failure to follow an NCS requirement for storage of SNM as required by the facility license is a Severity Level IV violation (VIO) of NRC requirements and will be tracked as VIO 70-2012/2012-004-01: Failure to Adhere to a Nuclear Criticality Safety Spacing Requirement in the Uranium Recovery Area.

b. Conclusion

One Severity Level IV violation of NRC requirements was identified.

3. Fire Safety (IP 88135)

a. Inspection Scope and Observations

During daily plant tours, the inspectors verified that transient combustibles were being adequately controlled and minimized in the Filler, RTRT, and Bay 8A areas. The inspectors conducted fire safety tours for the of Bay 12A and Waste Operations storage areas. The inspectors reviewed the control of transient combustible material and ignition sources and fire detection and suppression capabilities in the areas. No compliance or regulatory issues were noted in the areas reviewed with respect to fire protection equipment. The inspectors verified that housekeeping in the areas reviewed was sufficient to minimize the risk of fire.

b. Conclusion

No violations of NRC requirements were identified.

**B. Radiological Controls**

1. Radiation Protection (IP 88030 and IP 88135)

a. Inspection Scope and Observations

The inspectors reviewed recently modified licensee procedures, inspected radiological surveillance equipment for operability and calibration status, and reviewed instrumentation calibration records. The inspectors observed personnel calibrating instruments and performing source response checks on personnel contamination monitoring equipment located at controlled area exit locations. The inspectors determined that the performance of radiological monitoring instruments and equipment were in accordance with license requirements and licensee procedures.

The inspectors reviewed the 2011 annual As Low As Reasonably Achievable (ALARA) report, dated May 2012, and determined that the licensee met the requirements of 10 CFR 20.1101. The inspectors noted that for 2011, annual exposures were maintained below the regulatory limit of 5 rem per year. The maximum total effective dose equivalent result for 2011 was 1.409 rem, attributed to an employee from the Lynchburg Technology Center (LTC).

The inspectors reviewed the 2011 personnel dosimeter results as submitted to B&W NOG by their contractor, a National Voluntary Laboratory Accreditation Program (NVLAP) accredited laboratory, and determined that the lens dose equivalent and shallow dose equivalent results were less than the regulatory limit of 15 rem and 50 rem per year, respectively. The inspectors verified that records were maintained in accordance with 10 CFR 20.2106.

The inspectors toured several areas, including the Filler area, X-ray operations, LTC, and the UR area and verified that radiological signs and postings accurately reflected radiological conditions within the posted area. Areas were posted in accordance with 10 CFR Part 20.

The inspectors reviewed radiological survey records and determined that surveys adequately evaluated the magnitude and extent of radiation and contamination levels in accordance with 10 CFR 20.1501. The inspectors reviewed the "Alpha Fixed Air Sampling Weekly Reports for 2012" for the Filler area for accuracy and completeness. The inspectors determined that air sample results were properly analyzed and associated personnel exposures documented in accordance with approved procedures. The inspector also reviewed the inventory and leak test records for radioactive sealed sources.

The inspectors reviewed entries in the corrective action system for Radiation Protection (RP) and Radiation Safety Incident Notices (RSINs) since January 2012 and determined that corrective actions associated with each entry were adequate. The inspector also reviewed the internal audits of part of the RP program for the first three quarters of 2012 and noted that the findings were properly entered into the corrective action program (CAP).

During tours of radiologically controlled areas, the inspectors verified workers complied with RP procedural requirements contained in area operating procedures. The inspectors observed plant personnel as they removed protective clothing at controlled area step-off pads. The inspectors also observed plant employees as they performed exit monitoring at the UR and Filler area exits and verified that monitoring instructions were followed at the exit points. The inspectors noted that RP personnel changed out personal air sampling device filter papers at the end of shifts in the areas of the plant requiring personal air sampling as required by internal RP procedures.

The inspectors reviewed two Radiological Work Permits (RWPs) concerning work activities for the UR controlled area. The RWPs contained appropriate instructions and were posted in the work areas for employees' review and observation. Workers in those areas signed onto the applicable RWP, verifying their knowledge of the entry requirements. The inspectors noted that, for the portions of work activities observed, plant workers wore the required dosimetry and performed tasks in accordance with the RWP guidance. The inspectors also noted that RP staff toured the controlled areas during the performance of RWP activities and ensured protective clothing and equipment requirements of the RWP were followed by the individuals performing work.

b. Conclusion

No violations of NRC requirements were identified during the inspection.

## 2. Effluent Control and Environmental Protection (IP 88045)

### a. Inspection Scope and Observations

The inspectors reviewed program changes and procedures revised since the last inspection and verified that the program and procedures were in accordance with license requirements. The inspectors reviewed an internal audit and verified that the audit focused on license application requirements.

The inspectors observed the collection of airborne stack samples including impinger samples and air filters. The inspectors interviewed staff on the analytical technique used and verified that the detectors were calibrated. The inspectors reviewed a sample of airborne effluent results and verified that the licensee was in compliance with its license application. The inspectors observed the collection of ambient air filters from sampling stations and verified that the results were in accordance with the license application.

The inspectors performed a walk down of the Waste Water Treatment Facility, interviewed staff about the process and the settling ponds, and observed the liquid effluent outfall to the James River. The inspectors verified that the liquid effluents were being monitored for radioisotope constituents associated with the source material being processed. The inspectors reviewed daily liquid effluent results and verified that they were below the associated action levels.

The inspectors reviewed the most recent semi-annual effluent report and determined that the licensee was in compliance with 10 CFR 70.59. The inspectors interviewed the analytical laboratory staff on the detection methodology of the gaseous and liquid effluents and determined that quality control techniques were being properly utilized.

The inspectors reviewed the public dose assessment and determined that the total dose to the individual likely to receive the highest dose from the licensed operation did not exceed the regulatory limit in 2011. The inspectors reviewed the airborne portion of the public dose assessment and verified that result was in compliance with the ALARA constraint required by 10 CFR 20.1101(d). The inspectors reviewed the liquid portion of the public dose assessment and verified that the assumptions utilized in the calculation were appropriate.

The inspectors reviewed the 2011 and current 2012 environmental sampling results for soil, sediment, vegetation, surface water, and groundwater. The inspectors verified that the sampling was conducted at or greater than the frequency required in the license application. The inspectors verified that the action levels present in approved procedures were consistent with the license application requirements. The inspectors compared the results to the required action levels and verified that investigations had been conducted for areas of elevated sediment results. The inspectors observed sampling locations and interviewed technicians to verify that the liquid sampling conducted by the LTC technicians was consistent with approved procedures.

### b. Conclusion

No violations of NRC requirements were identified.



**C. Facility Support****1. Maintenance and Surveillance of Safety Controls (IP 88025)****a. Inspection Scope and Observations**

The inspectors interviewed the UR Unit Manager and two Front Line Managers (FLMs) with responsibilities in the UR area to verify that maintenance and surveillance program activities for IROFS and other safety controls were adequate to assure that IROFS and controls were available and reliable to perform their safety function when needed.

The inspectors verified that the licensee's work control program had provisions to ensure the adequate pre-job planning, scheduling, and preparation of work orders to support maintenance and surveillance activities. The inspectors reviewed maintenance and surveillance work orders for accuracy and to ensure that test packages challenged and verified operability of IROFS and safety controls. Completed work orders were adequately reviewed prior to returning equipment to service.

The inspectors reviewed the training and qualification program for UR maintenance personnel and found that qualifications were current. Training and qualification records were available, and the program was being implemented in accordance with the license requirements.

The inspectors observed maintenance work activities on selected systems and processes and determined that work activities were conducted in accordance with licensee requirements and approved procedures. Workers were knowledgeable of work order requirements and lock-out/tag-outs were properly placed in-the-field. The inspectors noted effective coordination among work groups.

The inspectors reviewed licensee evaluations of failed functional checks for IROFS that had occurred since the last inspection. The inspectors noted that failed functional checks were entered into the licensee's corrective action program. Corrective actions associated with failed functional checks were reviewed for adequacy and safety significance.

The inspectors noted an incident in which the licensee had replaced a furnace temperature controller in the Specialty Fuels Facility (SFF) area and returned the furnace to service without performing all the required functional tests. The controller was a designated IROFS. Upon subsequent IROFS testing, the licensee discovered that the recently replaced controller was not the correct model and would not initiate a furnace shutdown upon detection of high temperature. Three additional furnace IROFS temperature controllers were available and capable of performing their intended function.

Prior to this event, calibration activities in the SFF area could be performed without the need to generate a specific work order. The inspectors noted that the corrective action implemented by the licensee included a requirement for calibration of safety controls to be performed under a work order. The work order process incorporated functional testing requirements for IROFS in work instructions.

The inspectors determined that the incident was of very low safety significance as the performance requirements of 10 CFR 70.61 were met and the corrective action implemented in CA201201613 was adequate to prevent a recurrence. The failure to

perform an adequate post-modification functional test of an IROFS prior to returning it to service is a violation of NRC requirements. This non-repetitive, licensee-identified and corrected violation is being treated as a Non-Cited Violation (NCV), consistent with section 2.3.2 of the NRC Enforcement Policy (NCV 70-27/2012-004-02: Failure to Perform an Adequate Post-Modification Functional Test on Furnace Temperature Controller).

The inspectors also reviewed the licensee's CAP to verify that performance issues relating to the maintenance and surveillance of IROFS and safety controls were entered into the CAP and evaluated the adequacy of corrective actions taken. The inspectors noted that in all cases reviewed effective corrective actions were taken when a safety control failed a functional test or was degraded. The inspectors verified that post-maintenance testing and calibrations as specified by the licensee requirements were adequately performed prior to restoring equipment to operational status with the exception of the one case noted above in NCV 70-27/2012-004-02.

b. Conclusion

One non-cited violation of NRC requirements was identified.

2. Management Organization and Controls (IP 88005)

a. Inspection Scope and Observations

The inspectors interviewed six senior managers, middle managers, and supervisors to verify that the management team understood the plant policy for safety and management responsibilities as defined by the license. The inspectors reviewed changes in personnel that occurred within the past year. Several senior management personnel changes were identified. The inspectors verified through record review and interviews that the personnel selected met the qualifications as required by the license application. Through interviews, the inspectors verified that the newly appointed individuals were aware of and implementing their assigned responsibilities and functions.

The inspectors reviewed the licensee's control of procedures through discussions with licensee staff. The inspectors reviewed three procedures that were revised in the past year to assess whether they were reviewed and approved in accordance with the licensee's procedure development and review requirements in the license application and approved procedures.

The inspectors identified one procedure revision that was originated and approved by the same individual, contrary to License Application SNM-42, Section 11.4, which stated that activities at B&W NOG involving licensed material shall be conducted in accordance with written and approved procedures. QWI 5.1.12, "Change Management," stated in multiple instances that the approver of a procedure revision shall not be the same person as the originator. The licensee identified a similar occurrence in review of additional procedures.

The inspectors identified an Unresolved Item (URI) regarding the licensee's further review to determine the extent of condition on procedure changes that were approved by the originator and to assess if any of those instances resulted in an inadequate

procedure revision or change. This item will be tracked as URI 70-27/2012-004-03: Procedure Revisions Not Performed in accordance with Requirements.

The inspectors reviewed the licensee's problem identification and resolution program to determine if the program was being conducted in accordance with approved procedures and the license application. The inspectors observed a Corrective Action Review Board (CARB) management meeting in which the safety significance and classification was assigned to each item in the CAP.

The inspectors reviewed recent event and incident investigations conducted by the licensee and determined that the events were classified and significance level assigned per approved procedures. The inspectors also reviewed a sample of items entered into the licensee's CA system. The inspectors reviewed forty three corrective actions in the licensee's CA system to ensure that items pertinent to safety, security, and non-conforming conditions were identified, investigated as necessary, and tracked to closure. The inspectors verified that the issues of most safety significance were properly identified and reviewed for apparent causes.

The inspectors noted that, for those issues requiring extent of condition / extent of cause reviews, the reviews were completed and documented in the applicable CAs. The inspectors verified that appropriate corrective actions to prevent recurrence were identified in the CAs reviewed and tracked to completion in accordance with the licensee's CA system implementing procedure, Quality Work Instruction 14.1.1.

The inspectors reviewed the internal and external audits of the following programs: Radiation Safety, Criticality Safety, Chemical & Industrial Safety, Environmental, Fire & Explosion Protection and Emergency Preparedness and determined that the audits were conducted at the frequency required by the license. The inspectors reviewed safety committee meeting minutes and verified that the committees were operating per the requirements of the license and implementing procedures. The inspectors verified that the licensee's quality assurance program was being implemented in accordance with the license application.

b. Conclusion

An URI was identified for the licensee to determine the extent of condition on procedure changes that were approved by the Originator and to assess if any of those instances resulted in an inadequate procedure revision. No other findings of significance were identified.

3. Operator Training/Retraining (IP 88010)

a. Inspection Scope and Observations

The inspectors reviewed the Operator Training program for compliance with license requirements. The inspectors interviewed the licensee staff on changes to the training program in the past year and reviewed applicable procedure revisions. The inspectors determined that changes made were in accordance with the license application. The inspectors reviewed training program procedures and determined that training and qualification were implemented as required by the license application.

The inspectors discussed and observed training with selected staff in a variety of positions. The inspectors observed classroom training for the NCS area. The inspectors interviewed staff members on the content of the training material presented. The inspectors interviewed the training instructors on training content, qualification requirements, and acceptance/remediation criteria and determined that the training was in accordance with the license application and approved procedures.

The inspectors reviewed two lesson plans and 20 examinations for operations personnel. The inspectors verified that key points from the lesson plans were incorporated into the examinations. The inspectors determined that trainee understanding and command of learning objectives were evaluated as required by the license application. The inspectors evaluated changes in selected examinations to verify that the examination adequately tested the skill levels of the staff. The inspectors reviewed radiation protection lesson plans and determined that the training class included the requirements in 10 CFR 19.12.

b. Conclusion

No violations of NRC requirements were identified.

4. Permanent Plant Modifications (IP 88070)

a. Inspection Scope and Observations

The inspectors performed a review of the ISA changes and permanent plant modifications (PPMs) that were made during the last year in RTRT, SFF, UR, and the fuel manufacturing areas. The inspectors reviewed six change request (CR) packages, which included four safety evaluation requests (SERs). The reviewed changes involved modifications of accident sequences, SARs, IROFS, management measures, procedures, technical basis documents, and temporary operating procedures. The inspectors verified that the modifications were performed and authorized according to the applicable procedures and in compliance with 10 CFR 70.62 and 70.72.

In addition, the modifications were reviewed to ensure that any potential changes to an accident sequence were properly addressed. The inspectors walked down and reviewed PPMs to verify that the "as built" drawings agreed with the field configuration when applicable. For the reviewed PPMs, the inspectors verified that operating procedures were updated to reflect the modifications and that training on the modifications was provided, as necessary. The inspectors verified that the licensee had management measures in place to ensure that IROFS affected by facility changes were capable of performing their intended safety function before approving the modification for operation.

b. Conclusion

No violations of NRC requirements were identified.

5. Emergency Preparedness (IP 88135)

a. Inspection Scope and Observations

At 2:45 a.m. on July 24, 2012, a spill of approximately 60 gallons of aluminum nitrate from the Chemical Preparation room on the outside of the Uranium Recovery controlled area occurred. The spill initially was believed to be nitric acid and the on-shift shift emergency team was contacted to respond to the event. Soda Ash was applied to neutralize the spill.

The Emergency Operations Center (EOC) was activated at approximately 4:20 a.m. to assist in coordinating the response to the spill. The inspectors responded to the EOC activation at the site, discussed the status of the response with licensee management and reviewed the emergency event flow chart for hazardous materials releases. The inspectors determined that, since radioactive material was not involved in the spill and the concentration of aluminum nitrate or nitric acid did not exceed the reportable quantity limits guidance in the emergency plan, an event declaration to the NRC Headquarters Operations Center was not required.

The inspectors also determined that emergency response personnel took precautions to prevent migration of the spill and verified that the spill did not enter any storm drains or other liquid release pathways. Samples of the spill taken verified that no radioactive material was present. After the spill was cleaned up, approximately 800 gallons of nitric acid remained in the diked area inside the Chemical Preparation Room.

A post-incident review team (PIRT) was formed and a Level 2 corrective action (CA201202097) was initiated to track the licensee's event follow-up and corrective actions. The EOC activation was terminated at 6:19 a.m. The licensee suspended UR operations to investigate and perform a cleanup of the affected area.

The inspectors reviewed the incident after the cleanup had been completed and noted that the licensee found the stem of an automatic valve had stuck open allowing a siphon of aluminum nitrate from the storage tank in the facility's tank farm area to the UR chemical preparation room scrub solution makeup tank. The siphon was due to the elevation and liquid level difference between the tanks, and the makeup tank overflowed as a result. The licensee performed an extent of condition and found two other locations where a single valve failure could present similar concerns with a vessel overflow.

The inspectors noted the licensee's corrective actions to ensure against single valve failures such as occurred in this incident were focused on adding manual valves to the system lineups and require closing of the valves as part of the UR process shutdown checklist. The inspector also noted that the licensee was assessing the feasibility of providing an alarm for the chemical preparation area dike that would ensure a response from Security during the hours when the UR facility was shutdown and unoccupied.

On September 27, 2012, at approximately 12:30 a.m., a leak of a mixture of hydrochloric acid /hydrofluoric acid was discovered by plant personnel in the Bay 10 acid treatment area. SNM or other radioactive material was not handled or processed in this area. The leak, which emanated from an apparent failed pressure gauge, sprayed onto the wall and into the diked area within the Bay 10 acid treatment area. Approximately 20 gallons of the acid mixture migrated to the adjacent quality control dimensional inspection area which did handle SNM-bearing components. No SNM-bearing components were affected by the migration of the leak.

The third shift emergency team was contacted to respond and to neutralize the spill. The EOC was also activated at 12:48 a.m. and employees in the adjacent work areas were subsequently evacuated away from the area. The inspectors responded to the EOC and reviewed the incident status with licensee management in the EOC. The inspectors reviewed the emergency plan and emergency event flow chart for hazardous materials releases. The inspectors observed the perimeter of the incident scene and verified that the spill did not migrate outside of the facility building or other liquid release pathways. The inspectors verified that licensed material was not involved and, as a result, an event declaration to the NRC Headquarters Operation Center was not required per the licensee's emergency plan.

One individual was treated for potential chemical exposure as a precaution, and no personnel injuries occurred as a result of the event and subsequent response. At 5:11 a.m., the EOC activation was terminated. A Level 2 corrective action (CA201202839) was initiated to determine the cause of the leak and identify corrective actions to prevent recurrence.

b. Conclusion

No violations of NRC requirements were identified.

**D. Special Topics**

1. Follow-up on Previously Identified Issues

a. (CLOSED) VIO 70-27/2011-005-05: Failure to Identify a Potential Credible Accident Sequence in the ISA for a Red Oil Explosion in UR

The licensee has implemented adequate corrective actions to address the red oil accident sequence and apply adequate IROFS and management measures to meet the performance requirements. The licensee took credit for previously designated IROFS in criticality safety scenarios for the red oil scenario and lowered an operational pressure and designated it as an IROFS. The affected system remained out-of-service pending a modification to a three inch extraction system. Based on the documentation reviewed and the modification pending, this item is considered closed.

2. Event Follow-up

a. (CLOSED) Event Notification (EN) 48091: Licensee Event Report (LER) 70-27/2012-004-04, "Metallurgical Sample Pans Exceeded Volume Limit"

On July 10, 2012, during a routine quarterly audit, a NCS engineer identified that the sample pans which were used to transport and store metallographic samples containing uranium-235 exceeded the volume control limit. The sample pans were located in the Metallographic Laboratory, and the volume of the sample pans was an IROFS. The licensee notified the NRC in accordance with 10 CFR Part 70 Appendix A(b)(1) for an unanalyzed condition in EN 48091.

The licensee determined that although an IROFS was lost (the bread pan volume), other administrative IROFS (e.g., operator control of mass, operator control of interspersed moderation) were available at the time of discovery of the condition to ensure the risk of

a criticality remained highly unlikely. However, further evaluation of the as-found condition of the sample pans indicated that the k-effective limit may have been exceeded which was not in accordance with the performance requirements of 10 CFR 70.61.

The licensee performed additional analysis and determined that the k-effective limit was not exceeded and the performance requirements of 10 CFR 70.61 were maintained. The licensee concluded that a conservative approach was initially taken in evaluating the event in order to ensure compliance with the specified time periods established in the regulations. A re-analysis using an approved approach described in the license calculated a k-effective value less than the limit in the license. As a result, EN 48091 was retracted by the licensee on August 10, 2012.

As a follow-up, NCS inspectors reviewed the event during a routine inspection during the week of July 16-19, 2012, and the results of the inspection are documented in Inspection Report 70-27/2012-204. LER 70-27/2012-004-04 is considered closed.

**E. Exit Meeting**

On July 12, August 23, September 20, and October 1, 2012, the inspectors presented the inspection results to B.J. Burch and members of his staff. No dissenting comments were received from the licensee. Proprietary information was discussed but not included in the report.

## SUPPLEMENTARY INFORMATION

### 1. KEY POINTS OF CONTACT

<u>Name</u>	<u>Title</u>
J. Burch	General Manager
J. Calvert	Industrial Health and Safety Manager
G. Camper	Operations Department Manager
J. Cantrell	Quality Control Manager
C. England	Licensing Manager
M. Hicks	Quality Control Department Manager
B. Kidd	Human Performance Training Coordinator
K. Kirby	Licensing Engineer
D. Spangler	Nuclear Safety and Licensing Manager
J. VanDebogart	Manager, Division Training
K. Conway	Radiation Protection Manager
D. Spangler	Nuclear Safety & Licensing Manager
D. Ward	ESH&S Department Manager
D. Faidley	Nuclear Criticality Safety Manager
T. Cayton	Technologist, CMMS Coordinator
T. England	Manager of Licensing and Safety Controls
J. Jamerson	Front Line Manager – UPRR
D. Miller	Unit Manager Uranium Recovery
T. Moss	Quality Engineering Lead Auditor
S. Niedzialek	Unit Manager
M. Turek	Process Engineer

### 2. LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

#### Opened

70-27/2012-004-01	VIO	Failure to Adhere to a Nuclear Criticality Safety Spacing Requirement in the Uranium Recovery Area (Paragraph A.2)
70-27/2012-004-03	URI	Procedure Revisions Not Performed in accordance with Requirements (Paragraph C.2)

#### Opened & Closed

70-27/2012-004-02	NCV	Failure to Perform Adequate Post-Modification on Furnace Temperature Controller (Paragraph C.1)
70-27/2012-004-04	LER	EN 48091: "Metallurgical Sample Pans Exceeded Volume Limit." (Paragraph D.2)

#### Closed

70-27/2011-005-05	VIO	Failure to Identify a Potential Credible Accident Sequence in the ISA for a Red Oil Explosion in Uranium Recovery (Paragraph D.1)
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### 3. INSPECTION PROCEDURES USED

IP 88005, Management Organization and Controls  
 IP 88010, Operator Training / Retraining  
 IP 88025, Maintenance and Surveillance of Safety Controls  
 IP 88030, Radiation Protection  
 IP 88045, Effluent Control and Environmental Protection  
 IP 88070, Permanent Plant Modifications  
 IP 88135, Resident Inspection Program for Category I Fuel Cycle Facilities

### 4. DOCUMENTS REVIEWED

#### Records:

Internal Audit of Licensing, Nuclear Criticality Safety, Radiation Protection, and Emergency Preparedness, dated December 19, 2011

Internal Audit of Radiation Protection and Nuclear Criticality Safety, dated July 31, 2012

HS-2010-024, Red Oil formation in recovery primary and tertiary evaporator system, dated January 27, 2010

HS-2011-131, Review of prior evaluation for the formation of red oil in the recovery evaporator systems, due to NRC URI, dated October 11, 2011

HS-2012016, "Red Oil" evaluation for the Conversion (SFF) evaporator system, dated January 16, 2012

HS-2012-033, "Red Oil" evaluation for the 3-inch Extraction Process, dated February 20, 2012

MLP-2012-005, RP Audits, Inspections – 4<sup>th</sup> Quarter 2011, dated January 16, 2012

MLP-2012-017, RP Audits, Inspections – 1<sup>st</sup> Quarter 2012, dated April 10, 2012

MLP-2012-030, RP Audits, Inspections – 2<sup>nd</sup> Quarter 2012, dated August 3, 2012

NCS-2012-001, NCS Violation and Observation Summary – 4<sup>th</sup> Quarter 2011, dated January 16, 2012

NCS-2012-012, NCS Violation and Observation Trending Report – year end 2011, dated January 25, 2012

NCS-2012-057, NCS Violation and Observation Summary – 1<sup>st</sup> Quarter 2012, dated April 26, 2012

NCS-2012-113, NCS Violation and Observation Summary – 2<sup>nd</sup> Quarter 2012, dated July 25, 2012

Qualification Records for the 2 most recently qualified operators

Quarterly Mt. Athos Site Environment Audit Assessment Report, dated December 13, 2011

Quarterly Mt. Athos Site Environment Audit Assessment Report, dated May 1, 2012

Training and examination records for 20 Operations personnel

SAR 15.5, High Level Dissolution, Weigh Columns. Rev. 100, dated November 8, 2011

SAR 15.6, Low Level Dissolution Process in Uranium Recovery, Rev. 55, dated October 25, 2011

SAR 15.12, Liquid and Solid Waste Handling Processes in Uranium Recovery, Rev. 57, dated November 30, 2011

SAR 15.22, RTRT/Fuel Powder & Compact Fabrication, Rev. 65, dated December 21, 2011

#### Procedures:

RP-02, "Contamination Control," Rev. 9, dated September 15, 2012

RP-11, "Radiation Protection Training," Rev. 11, dated May 15, 2011

RP-01-04, "Radiation Protection Evaluation of Safety Evaluation Requests," Rev. 19, dated September 10, 2012

QWI 5.1.12, Rev. 23, Change Management

QWI 5.1.12, Attachment 1, Rev. 13, Risk Level Definition

QWI 5.1.12, Attachment 6, Rev. 3, Change Request Template User Guide

QWI 5.1.12, Attachment 7, Preparation of Repair Approval Requests

QWI 9.1.6, Rev. 2, Control of Processes, Special Processes, and Tests

QWI 9.1.7, Rev. 9, Preventive/Predictive Maintenance and Safety Related Controls Safety Program

QWI 14.1.1, Rev. 24 Preventive/Corrective Action System

OP-1016812, Rev. 2, Operating Procedure for UPRR Use of the Plant Maintenance Module

OP-1001828, Rev. 28, Operation Procedure for EAS Interlocks and Furnace Testing

OP-0061234, Rev. 44, Operating Procedure for Maintenance

FFD.003, Alcohol Testing, Rev. 8, dated July 14, 2009

FFD.006, NRC Event Reporting for Fitness for Duty Program, Rev. 4, dated March 9, 2009

HS-01-01, B&W Health and Safety Manual, Rev. 5, dated January 24, 2011

HS-01-08, Subcontractor Safety and Environmental Control, Rev. 9, dated February 15, 2012

HS-OP-004, Quarterly General Safety Audit, Rev. 15, dated June 30, 2012

Industrial Health and Safety Manual, Rev. 93, dated June 15, 2012

N-509, Suggestion Observation System (SOS), Rev. 6

NCS-01, Critical Safety Manual Limits and Controls, Rev. 8, dated December 15, 2011

NCS-05, Critical Safety Manual Moderation Control, Rev. 7, dated August 15, 2012

NCSE-03, Nuclear Criticality Safety Audit and Inspection, Rev. 24, dated February 27, 2009

NOG Quality System Manual, Rev. 11, dated November 3, 2010

OP-0220001, Alternate Heat Treatment Operation and Qualification Requirements, Rev. 32

OP-0202501, MFP QC Filler Inspections, Rev. 11

OP-0061121, Primary Evaporator System Operation, Rev. 25

OP-0061123, Contactor Evaporation System, Rev. 22

OP-0061124, Evaporator #6 Operation, Rev. 13

OP-0061135, Waste Handling and Disposal Enrichment Blending & Uranium Recovery Facility, Rev. 32

OP-0061234, Maintenance in Uranium Recovery, Downblend and SFF/PDL Facility, Rev. 44

OP-0061450, General Safety and Safeguards Guidelines – UPRR Area, Rev. 32

QSP 2.1, Environmental, Safety, Health, and Safeguards Program, Rev. 6, dated October 5, 2011

QSP 5.1, Document and Data Control, Rev. 8, dated February 28, 2011

QWI 1.1.1, Quality Assessment, Rev. 5

QWI 2.2.1, Preparation of Quality System Procedures, Instructions, and other Documents, Rev. 14

QWI 5.1.1, Control of Plan Lists for Documents, Rev. 8, dated February 28, 2011

QWI 5.1.4, Operating Procedures, Rev. 13, dated February 28, 2011

QWI 5.1.7, Safety Evaluation Request, Rev. 27

QWI 14.1.1, Preventive/Corrective Action System, Rev. 25

QWI 14.1.5, Commitment Follow-up System, Rev. 12

QWI 14.1.10, Safety Evaluation of Unusual Incidents, Rev. 14

QWI 17.1.1, Environmental, Safety, Health, and Safeguards Audit Programs, Rev. 10

QWI 18.1.1, Safety Training, Rev. 1

QWI 18.1.3, On The Job Training (OJT), Rev. 4

QWI 18.1.4, RTRT Personnel Training and Qualification, Rev. 3

QWI 18.1.08, Uranium Processing Fundamental Training, Rev. 3  
 RP-06, Radiation Work Permits, Rev. 11, dated June 15, 2012  
 RP-08, Environmental Monitoring and Controls, Rev. 9, dated July 15, 2012

Condition Reports Review:

CA201102000, CA201102940, CA201103169, CA201103525, CA201200104,  
 CA201200711, CA201200894, CA201101514, CA201201573, CA201201613,  
 CA201201942, CA201201988, CA201202077, CA201202092, CA201202097,  
 CA201202118, CA201202119, CA201202122, CA201202170, CA201202251,  
 CA201202269, CA201202338, CA201202378, CA201202385, CA201202396,  
 CA201202427, CA201202439, CA201202455, CA201202476, CA201202482,  
 CA201202479, CA201202503, CA201202520, CA201202522, CA201202548,  
 CA201202551, CA201202562, CA201202338, CA201102606, CA201202612,  
 CA201202624, CA201202641, CA201202652, CA201202657, CA201202672,  
 CA201202717, CA201202730, CA201202744, CA201202786, CA201202839,

Change Requests

Change Request 1034468 – Increase the smart crane weight limit  
 Change Request 1034752 – Revise dimensions for RTRT area storage rack trays  
 Change Request 1034969 – Re-inserting scenarios that were inadvertently removed during a previous change request  
 Change Request 1036668 – Locking of pan covers in the Automated Filler storage unit  
 Change Request 1032470 – Replacing the Met Lab bread pan with slightly larger containers  
 Change Request 1034873 – Separators installed on the furnace exhaust WS 145

Safety Evaluation Requests

Safety Evaluation Request 10-057, Phase 1 dated 11/24/10 for adding fuel separator to the work station exhaust line in SFF  
 Safety Evaluation Request 10-020, Phase 5 dated 5/27/10 for storage racks to hold AGR compacts  
 Safety Evaluation Request 10-039, Phase 1 dated 9/13/10 for the addition of fluoride to LLRW process  
 Safety Evaluation Request 10-002, Phase 1 dated 1/26/10 for replacing RTRT sieve shaker enclosure and stand

Other Documents:

Commitment Tracking Program listing  
 Skeptical Thinking Training Brief  
 Novamanage Software Document Control listings  
 Root Cause Investigation reports  
 Human Performance Handbook  
 Near Miss Program records  
 RPTWR #: 2012-004, Corrective Action Trending for 2011, dated February 3, 2012  
 2012 Monthly Safety Training Topic List

**5. ACRONYMS AND INITIALISMS**

ADAMS	NRC's document system
ALARA	As Low As Reasonably Achievable
B&W	Babcock and Wilcox
CA	Corrective Action

CAP	Corrective Action Program
CARB	Corrective Action Review Board
CFR	Code of Federal Regulations
CR	Change Request
EN	Event Notification
EOC	Emergency Operations Center
FLM	Front Line Manager
IP	Inspection Procedure
IROFS	Items Relied On For Safety
ISA	Integrated Safety Analysis
LER	Licensee Event Report
LTC	Lynchburg Technology Center
NCS	Nuclear Criticality Safety
NCV	Non-Cited Violation
NOG	Nuclear Operations Group
NRC	Nuclear Regulatory Commission
NVLAP	National Voluntary Laboratory Accreditation Program
OP	Operating Procedure
PIRT	Post-Incident Review Team
PPM	Permanent Plant Modification
QWI	Quality Work Instruction
Rev.	Revision
RP	Radiation Protection
RSIN	Radiation Safety Incident Notice
UR	Uranium Recovery
URI	Unresolved Item
VIO	Violation