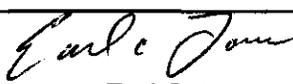


INSPECTOR NOTES COVER SHEET

Licensee/Certificate Holder	Babcock & Wilcox Nuclear Operations Group, Inc.
Licensee/Certificate Holder contact/address	Sandra Williams Sr. Transportation Administrator Nuclear Operations Group, Inc. P.O. Box 785 Lynchburg, VA 24505-0785
Docket No.	71-0088
Inspection Report No.	2012201
Inspection Dates	January 30 – February 2, 2012
Inspection Location	Nuclear Operations Group, Inc., Lynchburg, VA
Inspectors	Earl Love Jim Pearson Jon Woodfield
Summary of Findings and Actions	<p>The purpose of the inspection is to assess BWNOG's compliance with 10 CFR Parts 21 and 71, and to verify that the transportation package(s) which BWNOG is registered as the primary design holder (CoC holder) of, can be verified to comply with Part 71 design, procurement, fabrication, repair, maintenance, and use requirements. The inspection shall assess BWNOG 10 CFR Part 71 activities for compliance to their NRC-approved QA program and that the packaging(s) they use for transport of radioactive material are being properly used and maintained. Further, the inspection shall evaluate BWNOG's Corrective Actions taken as a result of the November 13-17, 2006 Inspection in which 3 violations occurred.</p> <p>Overall, BWNOG's implementation of their NRC-approved Part 71 Quality Assurance Program was assessed to be adequate. Based on the inspection findings, no violations were identified.</p>
Lead Inspector Signature/Date	 Earl C. Love 3/16/2012
Inspector Notes Approval Branch Chief Signature/Date	 Christian J. Araguas 3/21/2012

SAFETY INSPECTION REPORT AND COMPLIANCE INSPECTION

1. CERTIFICATE/QUALITY ASSURANCE PROGRAM (QAP) HOLDER:

Babcock & Wilcox Nuclear Operations Group, Inc.
P.O. Box 785
Lynchburg, VA 24505-0785

2. NRC/REGIONAL OFFICE:

Headquarters
U. S. Nuclear Regulatory Commission
Mail Stop EBB-3-D-02M
Washington, DC 20555-0001

REPORT NUMBER(S)

3. CERTIFICATE/QAP DOCKET NUMBER(S)

71-0088

4. INSPECTION LOCATION

Lynchburg, VA

5. DATE(S) OF INSPECTION

01/30/2012 - 02/02/2012

CERTIFICATE/QUALITY ASSURANCE PROGRAM HOLDER:

The inspection was an examination of the activities conducted under your QAP as they relate to compliance with the Nuclear Regulatory Commission (NRC) rules and regulations and the conditions of your QAP Approval and/or Certificate(s) of Compliance. The inspection consisted of selective examinations of procedures and representative records, interviews with personnel, and observations by the inspector. The inspection findings are as follows:

- 1. Based on the inspection findings, no violations were identified.
- 2. Previous violation(s) closed.
- 3. The violation(s), specifically described to you by the inspector as non-cited violations, are not being cited because they were self-identified, non-repetitive, and corrective action was or is being taken, and the remaining criteria in the NRC Enforcement Policy, to exercise discretion, were satisfied.

Non-cited violation(s) was/were discussed involving the following requirement(s) and Corrective Action(s):

- 4. During this inspection, certain of your activities, as described below and/or attached, were in violation of NRC requirements and are being cited in accordance with NRC Enforcement Policy. This form is a NOTICE OF VIOLATION, which may be subject to posting in accordance with 10 CFR 19.11.
(Violations and Corrective Actions)

Statement of Corrective Actions

I hereby state that, within 30 days, the actions described by me to the Inspector will be taken to correct the violations identified. This statement of corrective actions is made in accordance with the requirements of 10 CFR 2.201 (corrective steps already taken, corrective steps which will be taken, date when full compliance will be achieved). I understand that no further written response to NRC will be required, unless specifically requested.

TITLE	PRINTED NAME	SIGNATURE	DATE
CERTIFICATE/QAP REPRESENTATIVE	Sandra Williams	<i>Sandra Williams</i>	2/7/2012
NRC INSPECTOR	Earl C. Love	<i>Earl C. Love</i>	2/6/2012
BRANCH CHIEF	Christian J. Araguz	<i>Christian J. Araguz</i>	2/6/2012

INSPECTOR NOTES: APPLICABLE PORTIONS OF 02.01 THROUGH 02.10 OF IP 86001 WERE PERFORMED DURING THE INSPECTION WITH RESULTS DOCUMENTED BELOW:

02.02 Verify that the Certificate of Compliance (CoC) holder's activities related to transportation packagings are being conducted in accordance with the CoC, as well as the NRC-approved QA program, and that implementing procedures are in place and effective.

The inspection focused on how Babcock & Wilcox Nuclear Operations Group, Inc. (BWNOC) is implementing its NRC-approved QA program with respect to procurement, maintenance, repair, and use of transportation packages for transport of radioactive material. The team verified that BWNOC's activities were being conducted in accordance with the CoC's and QA program and that implementing procedures were in place and effective. The inspectors reviewed the CoCs, drawings, site packaging operating, and maintenance procedures for the following packagings:

<u>Model #</u>	<u>Package ID#</u>	<u>CoC / rev.</u>	<u>Expiration date</u>	<u>SAR / rev. Date</u>
UNC-2600	USA/5086/B(U)F	5086 rev. 13	November 30, 2014	October 2009
5X22	USA/9250/B(U)F-85	9250 rev. 11	October 31, 2014	July 2009

02.03 Verify that provisions are in place for reporting defects which could cause a substantial safety hazard, as required by 10 CFR Part 21.

The team reviewed BWNOC Quality Work Instruction (QWI) 13.1.3 revision 4, "10 CFR21 Reporting" and noted the procedure to be well written with detailed responsibilities for individuals associated with Part 21 reporting. The procedure contains defined time limits for each individual to act in the chain of reporting so that reporting is made within the overall timeframe.

The team also reviewed a sample of procurement documents for the purchase of important to safety, Category A components from vendors. The team discussed with procurement personnel the Part 21 purchase order condition statement in order to verify that vendors understood reporting requirements. BWNOC quality engineering personnel stated that for a vendor or sub-vendor to be on the BWNOC approved vendor list (AVL), they had to be audited by BWNOC. As part of an audit, the vendor or sub-vendor had to demonstrate that they understood reporting requirements. The team reviewed audit documents and determined that Part 21 reporting requirements with the vendors/sub-vendors was adequate.

The team found the Part 21 reporting procedure fully met the requirements of the regulations with no concerns. The team also found that the review of the sample procurement documentation along with the quality engineering audit documentation of vendors demonstrated that the vendors also understood their responsibilities under Part 21 reporting requirements.

BWNOC has three individual facilities at their complex in Lynchburg, Virginia. The team found the Part 21 Postings to be at visible locations in all three facilities for all BWNOC employees to read, with no concerns.

02.04 Interview selected personnel and review selected design documentation to determine that adequate design controls are implemented.

No new transportation package design efforts were in process or planned. The inspector reviewed procedures for design control and design change control. QWI-5.1.11, "Drawing

Control System," and QWI-14.1.7, "Design Drawing Compliance Review," are used to control changes to drawings. The inspector reviewed a sample of problem reports, and interviewed personnel responsible for design control of the CoCs for transportation packagings. The team reviewed BWNOG QWI 5.1.12 revision 23, "Change Management." This BWNOG procedure is used to change procedures, drawings, initiate drawings and revise all documents and discussed the BWNOG change management process with the Senior Transportation Administrator (STA). The team walked through change request CR-1030516 with the STA as an example of the process. CR-1030516 was associated with corrective action report CA200902759. The CR was to correct packaging 5X22 fabrication drawings to agree with the SARP/CoC drawing. The SARP/CoC drawing had been previously revised to remove the use of lock washers and only permit the use of flat washers. The team found the BWNOG change management procedure to be well written, organized with individual roles and responsibilities defined, and the implementation of the procedure to fully meet the requirements of the regulations with no concerns.

The team reviewed BWNOG QWI 5.1.1 revision 8, "Control of Plan Lists," for Documents and discussed the BWNOG document control revision process with the BWNOG Senior Transportation Administrator. BWNOG controls their documents through a computer database system. Users of controlled documents, procedures, quality work instructions, drawings, etc., must access the computer database system at a computer station and check the "Plan Lists" to verify the currently active revision for a document. New documents or revised documents must be fully approved before they can be placed on the computer based plan list. All hard copy approved documents are to be sent to the central document control (CDC) for storage. The team found the BWNOG documentation control procedure to be well written, organized with individual roles and responsibilities defined, and the implementation of the procedure to fully meet the requirements of the regulations with no concerns.

02.05 Review selected drawings, procedures, and records, and observe selected activities being performed to determine that maintenance activities meet SARP design requirements documented in the CoC.

The inspector reviewed the CoCs and associated drawings for the UNC-2600 and 5X22 transportation packagings as well as site packaging operating and maintenance procedures to ensure that they incorporated all aspects of the operating and maintenance procedures referenced in the CoCs for the packagings for which BWNOG holds the CoC.

The team noted that packagings are routinely maintained prior to use, satisfying the annual maintenance requirement. The team reviewed a sample of maintenance and operational reports of packagings to ensure that acceptance and maintenance tests were performed satisfying requirements of each Safety Analysis Report (SAR). In addition, the team interviewed facility managers, inspectors, and reviewed various generic work packages to ensure completion of annual maintenance requirements. No violations were noted.

02.06 Observe activities affecting safety aspects of the packaging (such as maintenance and/or testing) to verify that they are performed in accordance with approved methods, procedures, and Specifications.

The inspection of maintenance controls focused on activities associated with two frequently used packagings. The inspector reviewed maintenance logs of twenty seven (27) Model 5X22 containers, inspection records of eleven (11) of the most recently maintained 5X22 containers, and operations records on three (3) UNC-2600 packagings. The team verified that inspections

and loading operations were comprehensive, that attributes were appropriately inspected, and that maintenance and loading results were adequately recorded on the applicable forms and data sheets as defined and required within BWNOG's procedures.

The team inspected BWNOG's designated and controlled materials storage area and noted adequate controls. The area was locked against unauthorized entry. The team noted that components (i.e., a limited number of gaskets, and bolts) were stored in such a manner as to prevent damage and that all the components were suitably identified and tagged with acceptance stickers. No concerns were identified.

02.07 Review selected drawings and records, and interview selected personnel, to verify that the procurement specifications for materials, equipment, and services received by the QA program holder meet the design requirements.

The team reviewed BWNOG QWI 6.1.2, Revision 4, "Evaluation of New Subcontractors," and QWI 6.1.10, Revision 3, "Approved Subcontractors," and noted that both procedures provided adequate guidance and acceptance criteria. In addition, the team reviewed BWNOG's surveillance reports of Accurate Machine Products and Skolnik Industries, Inc. for materials and services, respectively. No issues were identified during the Accurate surveillance and five areas of minor procedural weaknesses were identified during the Skolnik surveillance and being tracked for resolution as part of BWNOG corrective action program.

02.08 Review selected records and interview selected personnel to verify that a nonconformance control program is effectively implemented, and that corrective actions for identified deficiencies are technically sound and completed in a timely manner.

The inspection focused on how BWNOG is implementing its NRC-approved QA program with respect to procurement, maintenance, repair, and use of transportation packages for transport of radioactive material. The team determined that there have been no recent fabrication related activities for packaging CoCs. BWNOG's Quality Assurance Plan (QAP) for Shipping Program revision 19 and operating procedure OP-1001324 revision 8, "Inspection of Fissile and Type B Shipping Containers and Spare Parts," addresses control of nonconforming materials, parts, or components. The team reviewed how BWNOG was currently processing some nonconforming packaging parts and determined compliance to its QAP for processing nonconformances.

The team reviewed OP-1001324 and noted provisions for processing nonconformances discovered during inspection of packaging and spare parts and compared the processes for addressing nonconformances discussed in the QAP and OP against the requirements in 10 CFR 71.131, Nonconforming materials, parts, or components and determined nonconformance controls were adequate. The team also verified the physical segregation and marking of actual nonconforming transportation packaging parts.

The team noted a self-identified nonconforming condition during the assembly of a important to safety Category B locking ring clamp used to to secure the drum lid to its container. Specifically, the clamp ends interfered with torquing of a security bolt. BWNOG inspected 179 rings for proper closure and found 132 to be acceptable. The team noted of the 47 discrepant rings several were kept and marked "Do Not Use" and segregated for testing and evaluation. According to BWNOG, the remaining rings were placed in metal recycle bins on January 9, 2012. BWNOG initiated corrective action CA201200294 to determine a root cause and prevent re-occurrence prior to procuring replacement rings. The team determined that the ongoing

engineering evaluation was comprehensive and that BWNOG's initiation of its corrective action report was marginally prompt.

The team reviewed QWI 14.1.1 revision 24, "Preventive/Corrective Action System." The procedure provides guidance to all personnel for initiating, facilitating, reviewing, investigating, and responding to Preventive/Corrective Actions (P/CAs) associated with level 1, 2, or 3 events requiring tracking and trending, immediate actions, and/or appropriate long term corrective actions. The P/CA system is intended as an improvement tool to assure that the causes of discovered problems are corrected and to prevent future events/problems that may adversely affect product, product support, process, safety, customer confidence, or regulatory compliance. The team noted that the procedure provides a list of the BWNOG forms needed to write a preventive/corrective action report, process it and bring it to resolution. The procedure also discusses performing corrective action report tracking and trending. Trending of the P/CA system data by a Quality Analyst is done biannually with reports to management.

The team reviewed the P/CA reports written due to the previous NRC inspection findings and their resolution and found them adequate to address the issues.

In reference to the notice of violation A.1, A.3, and A.5 dated December 20, 2006, BWNOG responded by issuing Corrective Action (CA) BWX_2012919 to document a revision to the inspection procedures RMS-02 and RMS-16. This change included specifying an inspection of the outer closure bolts, a requirement for application of lubricant to the bolt threads, and the inspection of the o-rings and flange closure faces for foreign matter. The inspection team reviewed the procedures and verified the changes were made.

In reference to the notice of violation A.2 dated December 20, 2006, BWNOG determined that a procedure change was not required. The 2006 inspection noted that the ring seal bolt on the UNC-2600 container did not have the proper markings for a Grade 5 bolt as required for the CoC drawing. As a result, the inspection team found that the procedure was not adequate to ensure compliance with the CoC requirement. BWNOG issued CA BWX_2012914 and determined that a change to the procedure was not needed. Drawing B-2600-2 requires that cage assembly bolts to be SAE Grade 5. This requirement is not applicable to the ring seal bolts. BWNOG stated they do not carry any replacement parts for the cage assembly bolts and if a replacement was needed, they intend to use another package or replace the bolt by using a cage assembly SAE Grade 5 bolt from another package.

In reference to the notice of violation A.4 (CA BWX_2012 757), BWNOG adequately revised its audit plan process to ensure the eighteen (18) quality criteria elements of NQA-1-1997 (Reference: Subpart H, 10 CFR Part 71) are evaluated within a two year period.

In reference to notice of violation B dated December 20, 2006, BWNOG has placed the active SARPs into the electronic document management system. The inspection team verified that the SARPs for the UBE-1, UBE-2, 5X22, and UNC-2600 packages were placed in the electronic management system.

In reference to notice of violation C dated December 20, 2006, BWNOG issued CA BWX_2012890 to document that BWNOG did not have a pre-selection evaluation requirement. The inspection team verified that QWI 6.1.13 was revised to add a pre-selection evaluation of QA plans for all suppliers.

Overall, the team found QWI 14.1.1 Preventive/Corrective Action System procedure to be well written, organized with individual roles and responsibilities defined, and the implementation of the procedure to fully meet the requirements of the regulations with no concerns.

2.09 Review selected records and procedures, interview selected personnel, and observe selected activities affecting the safety aspects of the packaging to verify that individuals performing activities affecting quality are properly trained and qualified, and to verify that management and QA staff are cognizant and provide appropriate oversight.

The team reviewed procedural guidance for inspection personnel training, qualification and certification and reviewed samples of qualification records for inspectors performing inspections of packagings in use. The team noted that the records of qualification were documented on form Q-39-G0068, Revision 2, "Qualification Record – Shipping Container Inspection," as required by procedure: OP-1001 324, Revision 8, "Operating Procedure for Inspection of Fissile and Type B Shipping Containers and Spare Parts (u)." In addition, the team reviewed documents supporting visual acuity testing, Form N-527, Revision 00, "Eye Test Summary Form for Non-Security Employees."

The team interviewed BWNOG's Senior Transportation Administrator and Research Test Reactor and Targets Front Line Supervisor and determined that their level of knowledge for control of inspection staff for Part 71 activities was satisfactory.

The team noted that BWNOG transportation group effectively tracks and implements periodic training requirements. In addition, the team reviewed BWNOG procedure: RMS-24, Revision 6, "Manual Leak Testing of Shipping Containers" and RMS-17, Revision 11, "Training." The team noted adequate personnel and test requirements were included in the procedures.

2.10 Verify that audits of the QA Program and activities affecting the safety aspects of the packaging are scheduled have been performed as scheduled, and that identified deficiencies have been satisfactorily resolved in a timely manner.

The team reviewed BWNOG QWI 17.1.2, Revision 16, "Internal Quality Audits," to determine the training and qualification requirements for BWNOG lead auditors. The team noted that section 9.0 of the QWI provides the requirements and acceptance criteria which were used to review the sample of BWNOG lead auditors chosen during the inspection. All results were adequate for initial training, testing, qualification, certification and recertification. The team also noted that continued proficiency maintained as described in BWNOG's materials license (SNM-42), Chapter 1, Section 1.11.

The team reviewed BWNOG audit schedules for 2008, 2011, and 2012 which all listed the responsible party (Lead Auditor), subject area of the audit, audit due date, and audit identifier. The team also reviewed meeting minutes describing discussion of audit results occurring between audit personnel and the BWNOG organization. The attendees for these discussion included management. A sample of three (3) audit reports from 2008, 2009, and 2011 were reviewed for compliance to QWI, 17.1.2 for audit performance and control. The team also reviewed external audit reports of Skolnik Industries, Inc. and Accurate Machine Products. Based on a review of audits and corrective action process, the team determined that BWNOG activities affecting the safety of the packaging are scheduled, performed as scheduled, and deficiencies have been satisfactorily resolved in a timely manner. No issues were noted.