



**babcock & wilcox nuclear operations group**

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August 11, 2011  
11-061

U.S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, DC 20555-0001

References: 1. License No. SNM-42, Docket 70-27  
2. Letter dated July 15, 2011, Margie Kotzalas (NRC) to R.P Cochrane (B&W),  
NRC Inspection Report No.70-0027/2011-203 and Notice of Violation

Subject: Reply to a Notice of Violation in Inspection Report No. 70-0027/2011-203

Dear Sir or Madam:

Pursuant to the provisions of 10 CFR 2.201, Babcock & Wilcox Nuclear Operations Group, Inc. ("B&W NOG"), Lynchburg facility, is providing this written statement of explanation to the U.S. Nuclear Regulatory Commission ("NRC") in reply to the Notice of Violation that was received by letter dated July 15, 2011 (Reference 2). B&W NOG's reply is provided in the enclosure.

If there are any questions in this regard, please contact Barry Cole at 434.522.5665.

Sincerely,

Roger Cochrane  
Vice President and General Manager  
Babcock & Wilcox Nuclear Operations Group Inc., Lynchburg

Enclosure

cc: NRC, M. Baker, Senior Project Manager  
NRC, Resident Inspector  
NRC, Region II, Regional Administrator

IEO?  
RGM II

# ENCLOSURE

**REPLY TO NOTICE OF VIOLATION****Violation: 70-0027/2011-203-01**

During a Nuclear Regulatory Commission (NRC) inspection from June 13 through 16, 2011, a violation of NRC requirements was identified. In accordance with the NRC Enforcement Policy, the violation is listed below:

10 CFR 70.61(a) states, in part, that each licensee shall evaluate, in the integrated safety analysis performed in accordance with 10 CFR 70.62, its compliance with the performance requirements in paragraphs (b), (c), and (d) of this section.

10 CFR 70.61(d) states, in part, that the risk of nuclear criticality accidents must be limited by assuring that under normal and credible abnormal conditions, all nuclear processes are subcritical, including use of an approved margin of subcriticality for safety.

Contrary to the above, on and before February 2, 2011, the licensee failed to limit the risk of a nuclear criticality accident in the container control area (CCA) in uranium recovery. Specifically, the licensee failed to prohibit unfavorable geometry containers into the CCA by procedure and independent verification had failed to identify the utility box in the uranium recovery area.

**Reason For Violation:**

On February 2, 2011, a portable vise cart holding four metal hardware cabinets with slide-out plastic trays was found in the Uranium Recovery (UR) Container Control Area (CCA). These trays, when treated as a single unit, exceeded the NCS limiting condition of operation (twenty-four liter container) because there were no drain holes in the trays. It was deemed credible that an overhead leak of special nuclear material-bearing solution could fill the trays. At the time of discovery, the area was already shutdown for modification work related to the removal of Raschig ring filled vessels.

The container was immediately removed from the CCA and an extent of condition sampling review of containers was performed. Liquid special nuclear material (SNM) processing operations were shutdown for UR and the adjacent Specialty Fuel Facility (SFF). An event critique was conducted on February 4, 2011. The issue was characterized as a Level-One Corrective Action which requires formal investigation to determine causal factors and corrective actions to prevent recurrence. More than seventy-eight potential unfavorable geometry containers were reviewed to determine extent of condition. Of these, two were found to have no holes or openings that would allow solution to drain. UR Management was notified. One container, a toolbox, was removed from the CCA. The other container, a flammable liquids storage cabinet, was bolted down at a location where there are no SNM solution transfer lines.

At the time of discovery, there were two items relied on for safety (IROFS) to prevent a nuclear criticality accident from occurring. The IROFS were:

- Unfavorable geometry containers are prohibited in the CCA by procedure and independent verification.
- Recovery system equipment is designed and installed to contain less 2.5 liters of solution.

The first IROFS, prohibiting unfavorable geometry containers in the CCA by procedure and independent verification, failed because placement of the utility box in the CCA was not prevented or detected.

The second IROFS, Recovery system equipment is designed and installed to contain less 2.5 liters of solution, was maintained.

Subsequent investigation revealed the portable vise cart and metal hardware cabinets had been in the CCA for some time. Previous extent of condition reviews had failed to identify the cabinets as unfavorable geometry containers. These missed opportunities to remove the cabinets from the CCA indicated a weakness in the extent of condition review process. The investigation identified this weakness as a root cause requiring corrective actions to prevent recurrence.

### **Corrective Steps Which Have Been Taken and the Results Achieved:**

Revise QWI 14.1.1, "Preventative/Corrective Action System" to provide improved guidance on the execution of extent of condition reviews.

Completed on: April 14, 2011

Documented instructions on how to perform extent of condition and extent of cause reviews are now available for reference. The information has improved the quality and consistency of the reviews.

Provide training per revisions to QWI 14.1.1 on how to conduct extent of condition reviews.

Completed on: July 12, 2011

The training presented the documented instructions and provided a forum for questions and answers.

Evaluate other equipment in the CCA as necessary. Implement additional IROFS and management measures as appropriate. Implement inspections to ensure unfavorable geometry equipment is properly controlled and maintained to assure compliance with CCA requirements on an ongoing basis prior to restart of operations in the CCA.

Completed on: June 13, 2011

The Container Control program was strengthened as a result of these changes.

### **Corrective Steps That Will Be Taken To Avoid Further Violations:**

Complete an extent of cause review to confirm the adequacy of the extent of condition reviews associated with events reported under 10 CFR 70, Appendix A, (a) and (b), to the NRC since January 1, 2006, per the improved guidance of QWI 14.1.1.

To be completed by: October 15, 2011

### **Date When Full Compliance Will Be Achieved:**

Full compliance will be achieved by October 15, 2011