AREVA

August 30, 2010
TWW-10-015

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555

Subject: Reply to Notice of Violation - NRC Inspection Report 05200020/2010-202 and Notice of Violation

The purpose of this document is to provide a response to the Inspection Report 05200020/2010-202. Enclosure 1 addresses the Notice of Violation 05200020/2010-202 - 01 identified in enclosure 1 of the Inspection Report.

This enclosure provides (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 to avoid further violations, and (4) the date when full compliance will be achieved.

We will continue to work toward completion of the required actions. Periodic updates can be provided upon request.

If you have any questions, please do not hesitate to contact me at (434) 832-2836 or tara.werner@areva.com.

Sincerely,

Tara W. Werner

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Enclosures

c: Chief, Quality and Vendor Branch 2, Division of Construction Inspection and Operational Programs, Office of New Reactors

IE01

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Enclosure 1

NRC Inspection Report 05200020/2010-202
and Notice of Violation

Reply to Notice of Violation 05200020/2010-202-01

Notice of Violation 05200020/2010-202-01

Criterion III, Design Control, of Appendix B to Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50 states, in part, that measures shall be established to assure that applicable regulatory requirements and the design basis, as defined in §10 CFR 50.2 and as specified in the license application, for those structures, systems, and components to which Appendix B to 10 CFR Part 50 applies are correctly translated into specifications, drawings, procedures, and instructions.

EPR-EN-PR-1002, "Design Control Process," Revision 1, dated April 20, 2010, states that the System Description Document (SDD) shall define the system in sufficient detail to permit verification that the design satisfies the input from the System Design Requirements Document (SDRD).

Contrary to the above, as of July 1, 2010, AREVA Inc. failed to correctly translate the design basis for the Emergency Feedwater System (EFWS) into specifications. Specifically, Section 5.5 of the EFWS SDD incorrectly states that "The EFWS piping within the reactor building, that is *upstream* of the check valve, shall be considered high energy lines." The correct designation should be *downstream* of the check valve as described in Section 2.4.3.1, "Protection from Internal Hazards", of the EFWS SDRD. This issue has been identified as Violation 05200020/2010202-01.

Reason for the Violation

The error was made in Revision 1 of the EFWS design certification SDD (dated 10/25/07) which was not consistent with a change made to Revision 4 of the EFWS SDRD (dated 10/8/07). The change was made to clarify high energy line break (HELB) requirements for the EFWS piping based on Revision 3 of NRC Standard Review Plan (SRP) 10.4.9. Both the SDRD and SDD were being prepared and reviewed in the same time frame by the same engineers. Review of available drafts of Revision 1 of the SDD indicates that the change to Section 5.5 occurred between 7/9/2007 and 8/20/07. A draft copy of Revision 1 of the SDD that included the correct "downstream" wording in Section 5.5 could not be found. The final review of Revision 1 of the design certification SDD performed by the document reviewer and reviews by the interfacing system engineers did not identify the incorrect wording in the revised Section 5.5.

The error was identified in Revision 2 of the EFWS design certification SDD during the NRC Inspection performed in Lynchburg from June 28 to July 1, 2010.

The apparent cause of the wording error was human error in the form of an inadvertent oversight resulting from the preparer's inadequate use of human performance tools; efforts such as Stop, Think, Act, and Review (STAR) and self checking in the preparation of the document may reduce the potential for errors.

The apparent cause of the error not being identified in the review of the document is also human error resulting from an inadequate review of the document. The paragraph containing the incorrect wording had a change bar indicating that a change was made in Revision 1. The subtle nature of the wording change, however, may not have been readily apparent to the reviewer. Contributing causes of the wording error were schedule related stress and distractions associated with the multiple tasks being simultaneously performed at the time.

Corrective Steps that Have Been Taken and the Results Achieved

Condition Report (CR) 2010-4509 was written to document this violation. This CR was classified as a Level 2 CR which required an Apparent Cause Evaluation. The Apparent Cause Evaluation was completed on July 22, 2010. An extent of condition was performed for this violation. A Product Upgrade List (PUL) for the latest SDD identifying the deficiency and the correct wording was completed, in order to ensure that the correct wording of "downstream" is correct in related documents.

Corrective Steps that Will Be Taken to Avoid Further Violations

The following corrective actions will be taken as a result of this violation:

1. Counsel the preparer and the reviewer on the use of human performance tools and stress management.

2. Develop supplemental training for system engineers that is focused on preventing errors made in the preparation and review of technical documents. The training will ensure the following:

   - Describe the details of the wording error discrepancy in the EFWS SDD covered by this CR.
   - Emphasize the potential risk associated with wording discrepancies creating latent errors that can result in plant design or safety concerns.
   - Highlight the design verification guidance and techniques provided in Engineering Guideline EG-16, Design Verification, Revision 000, dated July 9, 2010 in order to ensure that correct terminology is translated into future documents.
   - Discuss additional human performance tools that can be used during the preparation and review of technical documents such as highlighting changes and adding notes for reviewers.

- Communicate this event to all system engineers reminding them to use human performance tools such "Do Not Disturb" (a physical barrier that informs other co-workers that another worker is working on an important project and should not be disturbed) and taking breaks when preparing technical documents, specifically during time periods when there may be stress due to schedule pressure.

3. Revise the existing bullet in Section 4.2.2 of Procedures EPR-EN-PR-1004, Development of System Design Requirements Document, Revision 000, dated October 14, 2008 and EPR-EN-PR-1006, Development of System Description, Revision 000, dated October 14, 2008 to provide added assurance that changes in requirements be verified to upper tier document requirements by including the following information for both the preparer and reviewer: Verify that the technical contents agree with applicable information, *including changes affecting the description or scope of plant or system level design requirements be verified to be in agreement with higher tier documents,* and all interfaces have been reviewed and are correct.

4. Perform an effectiveness review of implementation of corrective actions 1 through 3 above.

Date When Corrective Actions Will Be Completed

December 15, 2010.