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Your ref: Docket No. 52-006
Our ref: DCP_NRC_003084

November 12, 2010

SUBJECT: REPLY TO NOTICE OF VIOLATION CITED IN NRC INSPECTION REPORT
NO.: 05200006/2010-203 dated October 28, 2010

Westinghouse acknowledges receipt of the NRC Inspection Report Number 05200006/2010-203 dated October 28, 2010 and the Notice of Violation: 05200006/2010-203-01. Westinghouse takes any notice of violation received from the NRC seriously and is taking appropriate actions to completely resolve these issues in a timely manner, and is committed to be in compliance with the provisions of Title 10, the *Code of Federal Regulations* (CFR), Section 50.150, "Aircraft impact assessment".

Westinghouse also values the results from this thorough review of the aircraft impact assessment (AIA) as it validates our overall implementation of applicable industry guidelines and regulations to ensure the robustness of the AP1000 design. In consideration of NRC comments made both during the inspection and in the exit meeting, Westinghouse immediately initiated corrective actions to resolve the specific issues identified in the Notice of Violation (NOV).

As requested, details of corrective actions associated with each of the issues that contributed to the NOV are described below and demonstrate the use of realistic analyses in the AIA.

Summary of Issues Contributing to the NOV and Immediate Corrective Actions

1. Need to include a second impact scenario that was performed on the Auxiliary Building South wall - The additional Auxiliary Building South wall scenario, including a description of the scenario and corresponding damage maps, was added to Section 5.1.8 in Westinghouse document APP-1000-GEC-002, resulting in Revision 2. This revision was completed prior to the conclusion of the inspection. The inspection team reviewed the revised scenario and found it to be accurate and complete. Corrective Action Status: COMPLETE

2. Need to improve the fire damage analysis for the spread of fire into the annulus region - Analysis has been completed to take credit for the additional 18" of concrete on the inside wall of the shield building, which conservatively exceeds the screening criteria in NEI 07-13. Additionally, a design change has been completed to ensure that the necessary penetrations and doors in the shield building wall contain 5psid seals on the inside of the shield wall. Westinghouse APP-1000-GEC-002 has been revised to require all personnel access penetrations through the shield building wall to meet necessary requirements. With 5psid seals and no damage to the inside of the shield building wall, there is no fire propagation expected. Westinghouse document APP-1000-GEC-002 has been updated.

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to Revision 3 in order to reflect the design changes described and is available for NRC review. Corrective Action Status: COMPLETE

3. Need to provide a technical justification for crediting a water tank and Turbine Building equipment in damage footprint analyses – Since the water tank and Turbine Building were actual obstructions in the scenario, Westinghouse viewed this analysis as realistic. Upon consideration of the NRC inspection results, Westinghouse agrees that the documented technical justification for including the mitigating affects of the intervening water tank and the Turbine Building Equipment was insufficient to support a conclusion in the assessment. During the inspection, Westinghouse re-analyzed the scenario to not take credit for these two obstructions, even though they exist, and demonstrated the acceptability of this revised, more conservative scenario. This revised scenario was included in Revision 2 of Westinghouse document APP-1000-GEC-002 prior to the conclusion of the inspection. The NRC inspection team reviewed the results of this revised scenario and found it acceptable. Corrective Action Status: COMPLETE

4. Correctly credit 3-hour rated fire barriers to prevent the propagation of fire into adjacent spaces - Westinghouse agrees that 1-hour and 2-hour rated fire barriers were inappropriately credited for stopping fire propagation into adjacent spaces. During the inspection, the assessment was revised to credit only 3-hour rated fire barriers for each impact scenario, and the results were documented in Revision 2 of APP-1000-GEC-002 prior to the conclusion of the inspection. The NRC inspection team reviewed the results of this revised scenario and found it acceptable. Corrective Action Status: COMPLETE

5. Need to adequately assess the vibration effects on the shield plate support structure - Westinghouse has incorporated the shield plate and supporting structures into the shield building LS-DYNA model. Both air inlet and cylindrical wall impact analyses were performed with the updated model to determine the nonlinear response to the shield plate. Details of this analysis are documented in Westinghouse APP-1000-S2C-167, R0, and show that the maximum ratio of stress/ultimate tensile strength of the material is in the cross sectional member (92%) and below the elongation maximum of the material (5.6% versus a material allowable of 20%). The analysis demonstrates the Westinghouse design shows adequate margin since these material properties are not exceeded. Westinghouse APP-1000-S2C-167 is available for NRC Review. Corrective Action Status: COMPLETE

6. Need to perform an impact analysis for a potential plant vulnerability on the Auxiliary Building - A design change has been processed to add a steel door to the outer wall of the Annex Building. This door's connections to the Annex Building wall are held to the same acceptance criteria as the wall itself. The analysis of this door was performed to determine the required thickness necessary to be considered equivalent to the wall in which it is located. This analysis was performed using formulas and analysis methods from NEI 07-03 Section 2.1.2.4 and DOE-STD-3014-2006 Section 6.3.2.2. A safety factor of 100% was then added to the calculated values. The design of the three oversized security doors located on the east wall of room 40357, the east wall of room 12351, and the shield building wall on the west side of room 12351 are now designated as key design features for the protection against the physical and fire damage resulting from the impact of a large commercial aircraft. As will be documented in RAI-SRP19F-AIA-01 R3, these key design features will be included in Section 19F.4.2 of the Design Control Document (DCD) that will be submitted for the design certification amendment request. Also, Westinghouse document APP-1000-GEC-002, Revision 3, now reflects the design changes described above and specifies minimum thickness for the other existing doors and their connections to eliminate this potential vulnerability. Westinghouse document APP-1000-GEC-002 is available for NRC review. Corrective Action Status: Design

change is complete and the AIA has been updated. RAI-SRP19F-AIA-01, R3 with DCD mark-ups will be issued prior to November 19, 2010.

7. Need to revise the Design Control Document (DCD) to list all walls credited in the AIA as 5 psid rated barriers to prevent the spread of fire – Westinghouse acknowledges that not all five walls credited in Westinghouse document APP-1000-GEC-002 were identified in the AP1000 DCD. During the inspection, RAI-SRP19F-AIA-09, R1 was issued to identify changes to the DCD to include each of the five walls that were credited as 5psid rated barriers. The inspection team reviewed the revised scenarios and found them to be accurate and complete. As part of the extent of condition review discussed below, Westinghouse identified 4 additional walls that should be included in the analysis. The analysis has been revised accordingly and Westinghouse document APP-1000-GEC-002 has been updated to Revision 3. In addition, the changes will be included in Section 9.5.1.2.1.1 of the DCD to identify these walls consistent with the revised analysis, as documented in RAI-SRP19F-AIA-09 R2. The changes discussed above will be included in the DCD to be submitted for the design certification amendment request. Corrective Action Status: Extent of condition is complete and RAI-SRP19F-AIA-09, R2 with DCD mark-ups will be issued prior to November 19, 2010.

Corrective Steps to Avoid Future Violations

As part of the Westinghouse corrective action process, action was taken immediately to ensure all specific issues were addressed. As discussed above, Westinghouse has completed all analyses, identified necessary design changes, and has updated the AIA as appropriate to resolve each specific issue associated with the NOV. The resolution of the issues will also be included in Revision 18 of the DCD, as described above pending final review and acceptance of the RAI responses that will be provided by November 19, 2010. Further, in support of this response to the NOV, Westinghouse has completed a corrective action investigation that: 1) evaluated activities that supported the development of the AIA; 2) assessed the contributing causes to the issues identified by the inspection; and 3) performed an extent of condition review to determine if the AIA contained any additional issues similar to those identified during the inspection.

Reason for the NOV: The investigation identified several activities that were accomplished prior to the inspection to provide assurance that the guidelines were being implemented appropriately. These activities included an independent peer review that involved the Electric Power Research Institute (EPRI) and a Westinghouse self-assessment that used the NRC inspection procedure IP37804 as the basis for the assessment. These activities were considered appropriate in recognition of the first-of-a-kind application of the NEI guidelines and lack of industry experience in interpreting and applying the guidelines. While those activities resulted in improvements to the AIA, the underlying cause that contributed to the limited number of issues identified in the inspection report related to misinterpretation of the guidelines in NEI 07-13 attributed to first-of-a-kind application and limited experience interpreting these guidelines consistent with NRC expectations. This led to a small number of engineering assumptions that were challenged during the inspection.

Extent of Condition: The extent of condition review found one additional case related to issue #7 discussed above. Specifically, 4 additional walls that should be included in the DCD and analysis were identified. The analysis has been revised accordingly and documented in Westinghouse APP-1000-GEC-002 R3. In addition, the response to NRC Request for Additional Information (RAI) RAI-SRP19F-AIA-09 R2 will be issued to identify changes to Section 9.5.1.2.1.1 of the DCD to identify these walls consistent with the revised analysis. Overall, Westinghouse concludes that the issues

identified were isolated cases and there are no systemic or process issues requiring further corrective action.

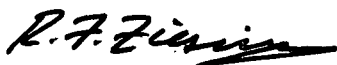
Future Action: Westinghouse considers that all needed corrective actions have been taken to resolve the issues identified by the subject NRC NOV. As a follow-up action beyond the scope of the NOV, Westinghouse will perform an effectiveness review of the corrective actions within 1 year to validate the corrective actions have been effectively implemented.

Conclusion

Westinghouse considers this response as objective evidence to provide sufficient information regarding the corrective actions to satisfactorily resolve the issues identified by the subject NOV. Given the extensive reviews prior to inspection, the inspection itself with resulting corrective actions, and the additional extent of condition review performed, Westinghouse considers the current AIA demonstrates, using realistic analyses, the robustness of the AP1000 design, properly implements NEI 07-13 guidance and complies with 10 CFR 50.150(a)(1).

Any additional questions related to this response should be addressed to R. F. Ziesing, Director, U.S. Licensing, Westinghouse Electric Company LLC, 1000 Westinghouse Drive, Suite 115, Cranberry Township, Pennsylvania 16066.

Very truly yours,



R. F. Ziesing, Director
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