

December 3, 2003

Mr. Ronald P. Vijuk  
Manager of Passive Plant Engineering  
AP1000 Project  
Westinghouse Electric Company  
Post Office Box 355  
Pittsburgh, Pennsylvania 15230-0355

SUBJECT: NEW OPEN ITEM - AP1000 DESIGN CERTIFICATION REVIEW (TAC NOS.  
MB9693 AND MB9695)

Dear Mr. Vijuk:

By letter dated March 28, 2002, Westinghouse Electric Company (Westinghouse) submitted its application for final design approval and standard design certification for the AP1000 advanced plant design. On June 16, 2003, the Nuclear Regulatory Commission (NRC) staff issued the draft safety evaluation report (DSER) for the AP1000 design. The DSER identified 174 open items that needed resolution prior to issuance of the final safety evaluation report (FSER) for the AP1000 design. The NRC staff is continuing a detailed review of your design certification application to ensure that the information is sufficiently complete to enable the NRC staff to reach a final conclusion on all safety questions associated with the design before the certification is granted.

The NRC staff has determined that additional information is necessary to continue the review. One additional open item is included in the enclosure to this letter. The topic covered in this open item focuses on additional debris that can be caused by chemical reactions in the containment. Specifically, the issue is associated with DSER Section 6.2.1.8.3. This open item was sent to you via electronic mail on November 12, 2003.

Please contact one of the following members of the AP1000 project management team if you have any questions or comments concerning this matter: Mr. John Segala (Lead Project Manager) at (301) 415-1858, [jps1@nrc.gov](mailto:jps1@nrc.gov); Mr. Joseph Colaccino at (301) 415-2753, [jxc1@nrc.gov](mailto:jxc1@nrc.gov); or Ms. Joelle Starefos at (301) 415-8488, [jls1@nrc.gov](mailto:jls1@nrc.gov).

Sincerely,

*/RA/*

Joelle L. Starefos, Project Manager  
New Reactors Section  
New, Research and Test Reactors Program  
Division of Regulatory Improvement Programs  
Office of Nuclear Reactor Regulation

Docket No. 52-006

Enclosure: New Open Item Associated with AP1000 DSER Section 6.2.1.8.3

cc: See next page

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DATE	11/26/03	11/26/03	11/26/03	11/26/03

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**New Open Item Associated with AP1000  
Draft Safety Evaluation Report (DSER) Section 6.2.1.8.3**

**Open Item 6.2.1.8.3-4**

The NRC staff has been developing Revision 3 to Regulatory Guide 1.82, "Water Sources For Long-term Recirculation Cooling Following a Loss-of-coolant Accident." During that review, the staff has identified concerns related to additional debris that can be caused by chemical reactions in the containment. The staff is requesting that the applicant address the following chemical effects as they relate to head loss calculations provided in the responses to Open Items 6.2.1.8.2-1, 6.2.1.8.3-1, and 6.2.1.8.3-3.

- a. To minimize potential debris caused by chemical reaction of the pool water with metals in the containment, exposure of bare metal surfaces (e.g., scaffolding) to containment cooling water through spray impingement or immersion should be minimized either by removal or by chemical-resistant protection (e.g., coatings or jackets).
- b. In addition to debris generated by jet forces from the pipe rupture, debris created by the resulting containment environment (thermal and chemical) should be considered in the analyses. Examples of this type of debris would be disbondment of coatings in the form of chips and particulates or formation of chemical debris (precipitants) caused by chemical reactions in the pool.

AP 1000

cc:

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