August 1, 2006

Ms. Andrea Sterdis, Manager
Licensing and Customer Interface
Regulatory Affairs and Standardization
Westinghouse Electric Company
Nuclear Power Plants
P.O. Box 355
Pittsburgh, PA 15230-0355

SUBJECT: WESTINGHOUSE AP1000 COMBINED LICENSE (COL) PRE-APPLICATION TECHNICAL REPORT 32 - REQUEST FOR ADDITIONAL INFORMATION (TAC NO. MD1432)

Dear Ms. Sterdis:

By letter dated April 5, 2006 (DCP/NRC1729), you submitted AP1000 Technical Report 32, "Zinc Addition," which described the addition of a zinc addition system to the AP1000 design. The NRC staff has reviewed the report, and has determined that additional information is required. Our questions are provided in the Enclosure. We discussed these issues with your staff on July 28, 2006. Your staff indicated that you would attempt to provide your response by September 8, 2006.

Please contact me at (301) 415-1313, if you have any other questions on these issues.

Sincerely,

/RA/

Steven D. Bloom, Senior Project Manager
AP1000/EPR Projects Branch
Division of New Reactor Licensing
Office of Nuclear Reactor Regulation

Project No. 740

Enclosure: Request for Additional Information

cc w/encl: See next page

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ADAMS ACCESSION NO.: ML062130077

OFFICE	NAPB: PM	NAPB: BC
NAME	SBloom	SCoffin
DATE	08/01/06	08/01/06

OFFICIAL RECORD COPY

REQUEST FOR ADDITIONAL INFORMATION

WESTINGHOUSE AP1000 DOCUMENT NO. APP-GW-GLN-002, Rev 0

TECHNICAL REPORT 32 - ZINC ADDITION

PROJECT NUMBER 740

TR32-1 The document states that zinc addition to the reactor control system (RCS) water inhibits general corrosion and primary water stress corrosion cracking (PWSCC) in primary system materials and components. The document also states that zinc exists as a divalent cation in the corrosion film that protects the metal from corrosion. The staff requests that Westinghouse provide information as to how the presence of zinc in the oxide layer mitigates corrosion and PWSCC.

TR32-2 Provide information regarding the interaction of zinc ions and neutron radiation. Specifically, what is the effect of neutron radiation on the stability of zinc ions and with respect to the reduction in zinc ion concentration due to exposure to neutron radiation? Identify the reactor vessel internal (RVI) component locations where there can be a reduction in zinc ion concentrations due to exposure to neutron radiation and describe any relevant consequences of such a reduction.

TR32-3 Provide information as to how the availability of zinc in various locations of the RVI components can be assessed and identify the variables that can be measured to assess the zinc availability at various locations in RVI components.

TR32-4 Provide information (if available) regarding the effect of zinc on PWSCC crack growth rates in PWR RVI components.

TR32-5 Provide information related to the effect of inadvertent loss of zinc addition for certain durations on PWSCC of the PWR RVI components. Provide information related to the time frame for which loss of zinc addition capability will not affect PWSCC crack growth rates.

TR32-6 In Nuclear Fuel Section on page 3 of the submittal, Westinghouse states that zinc addition to the RCS water can result in the formation of a thin dark deposit on the surface of the fuel rods. The staff requests that Westinghouse provide information regarding the effect of thermal cycles on the stability (spalling) of these thin dark deposits on the surface of the fuel rods.

ENCLOSURE