August 20, 2007

Ms. Andrea Sterdis, Manager
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Nuclear Power Plants
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SUBJECT: RESPONSE TO WESTINGHOUSE ELECTRIC COMPANY AP1000 PIPING DESIGN ACCEPTANCE CRITERIA PLAN LETTER OF APRIL 26, 2007

Dear Ms. Sterdis:

This letter is to inform you that the Nuclear Regulatory Commission (NRC) has insufficient information to allow resolution of the piping Design Acceptance Criteria (DAC) or to close Combined Operating License (COL) Information Items 3.6-1, which addresses your pipe break hazard analysis or 3.9.8-2, which allows for NRC audit of design specifications and design reports.

In your letter of April 26, 2007, you summarized the AP1000 piping status and schedule and proposed that the NRC audit the design during the week of August 13, 2007. Prior to submitting the April 26, 2007, letter, Westinghouse Electric Company (Westinghouse), through AP1000 Standard Combined License Technical Report (TR) 13, APP-GW-GLR-013, requested that the NRC conclude that the DAC were resolved and delete the contents of Table 1-2 in the AP1000 Design Control Document (DCD) Introduction, which lists the piping DAC. Table 1-2 outlines 28 different commitments with regard to methodology which the NRC was to verify were met prior to fuel load. Based on our review of TR 13 and the description of design completion provided by your staff during a June 26-27, 2007, meeting, insufficient information is available to amend the DCD to resolve all DAC commitments as requested or to conduct an audit.

During the June 26 through June 27, 2007, meeting, your staff described the status of the 40 of 138 piping design packages you consider to be complete. NRC staff reviewed the stress reports for three of the completed packages, including the packages for the automatic depressurization system stage 4 line, the pressurizer surge line, and main steam line Train A. The NRC staff found the packages to be generally incomplete. Design Reports, as required in Table 1-2, which would serve to demonstrate that the functional and design requirements as stipulated in the design specification are met, were not available. The Design Report needed to address DAC is the version developed to support construction. Based on discussions with Westinghouse during the June 26 through June 27, 2007, meeting, this document was referred to as “Revision 0" of the Design Report. The stress reports that were available were not in an auditable form since they lacked a comprehensive description of the design methodologies and criteria, as well as the design analysis results. In addition, the required piping support design, the thermal stratification analysis, the pipe break hazard analysis, fatigue analysis, and the safety-related valve analysis, all required in Table 1-2, have not been adequately documented

in the reports. Further, the packages had not been revised to reflect the revised, bounding seismic response spectra for soil sites.

As defined in SECY-92-053, DAC are a set of prescribed limits, parameters, procedures, and attributes upon which the NRC relies in making a final safety determination subject only to satisfactory design implementation and verification through the appropriate inspections, tests, analyses, and acceptance criteria (ITAAC). DAC were meant to exist until the design is complete such that it can be verified as part of the ITAAC to demonstrate that the as-built facility conforms to the certified design.

In order to resolve DAC and amend the DCD as requested, Westinghouse will need to complete the design to a point that the commitments described in Table 1-2 are met. At that point, the DCD can be revised as requested. This level of verification is necessary to assure that the final, as-built piping design and analyses can be completed. This level of design is further described in Section C.I.3.12 of Regulatory Guide 1.206, “Combined License Applications for Nuclear Power Plants, “ June 2007.

Other options available would be to complete the design to the point required by Table 1-2, at which point a COL applicant would request NRC staff review. This could occur after a COL application (COLA) is submitted or after the COL is issued, but before the plant is constructed. NRC would be able to document resolution of DAC at that point such that it could be used for subsequent COLAs, and ITAAC as written would still be required to review the as-built aspects of the design. Another option would defer resolution of DAC without requiring completion of the design called for in the Table 1-2 commitments such that later NRC review of the completed design would be required.

In addition to piping design, NRC staff discussed the pipe break hazards analysis and component design during the meeting on June 26 through June 27, 2007. Pipe break hazards analysis was a topic in TRs 6 (APP-GW-GLR-021) and 7 (APP-GW-GLR-074). Specifically, in TR 7, Westinghouse stated that the report addresses and documents, on a generic basis, design activities required to complete the COL Information Item in Section 3.6.4.1 of the AP1000 DCD. Westinghouse also stated that a pipe break hazards analysis is part of piping design. The NRC staff noted that numerous areas in TR 7 are incomplete and are deferred to a later stage of design. The pipe break hazards analysis will need to be completed before the DAC and COL Information Item 3.6-1 can be closed.

With regard to component design, based on the discussion during the meeting on June 26 through June 27, 2007, the NRC staff understands that much of the design is complete. After Westinghouse provides the complete list of ASME Class 1, 2, and 3 components with a schedule and status for design specification and reports, the NRC staff will determine when an audit can be conducted to determine whether the component portion of COL Information Item 3.9.8-2 can be closed as requested in the collection of reports that make up TR 11. If all design reports cannot be provided due to the practice of not requiring the design reports until after the procurement process takes place, a request should be made to move the design review of those reports to ITAAC. After successful audit of the existing design and modification of ITAAC

to address the design that will be completed later, based on the existence of DAC, COL Information Item 3.9.8-2 could be closed.

Please contact me at (301) 415-1199, if you have any other questions on this issue.

Sincerely,

/RA/

David B. Matthews, Director
Division of New Reactor Licensing
Office of New Reactors

cc: Project No. 740

to address the design that will be completed later, based on the existence of DAC, the COL Information Item could be closed.

Please contact me at (301) 415-1199, if you have any other questions on this issue.

Sincerely,

/RA/

David B. Matthews, Director
Division of New Reactor Licensing
Office of New Reactors

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