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Your ref: Docket No. 52-006
Our ref: DCP_NRC_002840

March 30, 2010

Subject: AP1000 Response to Request for Additional Information (SRP 17)

Westinghouse is submitting a response to the NRC request for additional information (RAI) on SRP Section 17. This RAI response is submitted in support of the AP1000 Design Certification Amendment Application (Docket No. 52-006). The information included in this response is generic and is expected to apply to all COL applications referencing the AP1000 Design Certification and the AP1000 Design Certification Amendment Application.

Enclosure 1 provides the response for the following RAI(s):

RAI-SRP17.4-SPLA-04 R1

Questions or requests for additional information related to the content and preparation of this response should be directed to Westinghouse. Please send copies of such questions or requests to the prospective applicants for combined licenses referencing the AP1000 Design Certification. A representative for each applicant is included on the cc: list of this letter.

Very truly yours,

Robert Sisk, Manager
Licensing and Customer Interface
Regulatory Affairs and Standardization

/Enclosure

1. Response to Request for Additional Information on SRP Section 17

D063
NRO

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ENCLOSURE 1

Response to Request for Additional Information on SRP Section 17

AP1000 TECHNICAL REPORT REVIEW

Response to Request For Additional Information (RAI)

RAI Response Number: RAI-SRP17.4-SPLA-04
Revision: 1

Question:

D-RAP ITAAC should provide assurance that the reliability and availability of risk-significant SSCs are consistent with the certified design (subject to deviations and plant-specific features approved in the COL and reflected in the FSAR) by

- concluding that the list of SSCs within the scope of D-RAP is complete and correct
- concluding that the design products for each risk-significant SSC have been prepared correctly (i.e., were subject to adequate controls)
- describing the activities on which these conclusions are based, as well as the other reliability assurance activities providing confidence that at the time of initial fuel loading, the plant will be as described in the FSAR

Please explain how the proposed D-RAP ITAAC would accomplish this, or propose an alternative that provides reasonable assurance that the plant is designed and will be constructed in a manner that is consistent with the key assumptions and risk insights for risk-significant SSCs within the scope of D-RAP.

Further Clarification from NRC Phone Call 3-8-10:

The NRC staff provided further clarification on what should be included in the D-RAP ITAAC based on what will be updated in ISG-018 when that is issued.

The staff has provided suggested language for future D-RAP ITAAC such as;

Design Commitment: Ensure that the design of systems, structures, and components within the scope of the reliability assurance program (RAP SSCs) is consistent with the risk insights and key assumptions (e.g., SSC design, reliability, and availability).

Inspections, Tests, and Analyses: An analysis will confirm that the design of all RAP SSCs has been completed in accordance with applicable D-RAP activities.

Acceptance Criteria: All RAP SSCs have been designed in accordance with the applicable reliability assurance activities for the D-RAP.

The staff has determined that the D-RAP ITAAC can and should be closed once the initial design has been issued for all SSCs within the scope of the RAP. In the view of the staff, subsequent activities, including approved test acceptance criteria and modifications of the design, are adequately controlled by other activities within the design reliability assurance program. The D-RAP ITAAC verifies that correct scope is established (e.g., SR RAP SSCs

are on the Q-List and some comparable method for ensuring that NSR RAP SSCs are properly controlled). Verification checks that the design documents that were prepared were subject to the specified controls.

Westinghouse Response (Rev. 0):

Westinghouse recognizes that the purpose of the D-RAP is to provide reliability and availability of risk-significant SSCs consistent with the certified AP1000 design. Responses to documented observations are:

- The list of SSCs included within the scope of the D-RAP is documented in the DCD in Tier 1 Table 3.7-1 and Tier 2 Table 17.4-1. This information reflects the analytical results of the AP1000 Probabilistic Risk Assessment (PRA). Slight discrepancies between the equipment listed in Tier 1 Table 3.7-1 and Tier 2 Table 17.4-1 were discovered. A mark-up of Tier 1 Table 3.7-1 is attached to this RAI response. Any changes to the population of SSCs contained within the D-RAP due to site differences will be documented by the license applicant via the COLA process.

- As documented in the paper "About the D-RAP ITAAC RAI to Westinghouse" from the USNRC:

  > For safety-related SSCs, licensees rely on 10 CFR Appendix B programs. These form an acceptable basis for concluding that design products reflect the design as described in the FSAR. Analogous assurance (not necessarily as stringent) is required for non-safety related yet risk-significant SSCs.

  Westinghouse concurs that non-safety related risk-significant SSCs are candidates for quality assurance which will provide confidence that the design products reflect the design described in the FSAR. To this end, Westinghouse will apply increased quality assurance to all non-safety risk-significant SSCs identified in DCD Tier 1 Table 3.7-1 and Tier 2 Table 17.4-1. This program will be in accordance with Tier 2 Table 17-1 "Quality Assurance Program Requirements for Structures, Systems, and Components Important to Investment Protection."

- Inspections, tests, and analyses that ensure the AP1000 is constructed in accordance with the certified design will be performed in accordance with system-level acceptance criteria documented in Tier 1 Chapter 2 of the AP1000 DCD. A report will be generated by the site licensing department verifying that all the equipment listed in the DCD Tier 1 Table 3.7-1 has been designed, procured, manufactured, transported, stored (on-site or in-place), and installed in accordance with quality programs.

In compliance with the aforementioned responses, a markup of DCD Tier 1 Table 3.7-1 and Table 3.7-3 is attached to this RAI.

Westinghouse Response (Rev. 1):

See the attached DCD Mark-up of Tier 1, ITAAC Table 3.7-3 for proposed change in ITAAC wording to comply with the proposed language. The comments in Revision 0 have been superseded with the changes for this revision. Please note that the last bullet in Rev. 0 of the response has been changed to only be applicable to the design of the specified components, and not the procurement, manufacturing, transportation, stored or installation. Note also that the changes incorporated in Revision 0 of this response have been accepted so that the change in Revision 1 would be easier to track.

Also note that for this revision, we have deleted Table 3.7-1 from the response. Table 3.7-1 has been revised in RAI-SRP17.4-SPLA-05 R1. It was deleted from this response to remove any confusion on the correct version of Table 3.7-1.

Based on draft guidance being proposed by the NRC, the D-RAP has a reduced scope than what was proposed in Rev. 0. The D-RAP ITAAC can be closed by the COL when the initial design has been issued (under appropriate programmatic controls) for all SSCs within the scope of D-RAP. Subsequent inspection of Appendix B programs and the programs under which QA for investment protection will be performed are independent of this ITAAC, and will allow the staff to confirm that procurement, manufacture, transport, and storage are appropriately controlled. System-based ITAAC that inspect the as-built condition will serve as the staff's basis for concluding that installation is consistent with the design documents issued for procurement or approved for construction. The D-RAP ITAAC serves to link those documents to the certified design.

References: None

Design Control Document (DCD) Revision:

(Table 3.7-1 has been revised in RAI-SRP17.4-SPLA-05 R1, and is removed from this response to avoid confusion.)

Modify Tier 1, Table 3.7-3, "Inspections, Tests, Analyses and Acceptance Criteria," as follows (Note - changes incorporated in Revision 0 of this response have been accepted so that the change in Revision 1 would be easier to track.):

Table 3.7-3
Inspections, Tests, Analyses and Acceptance Criteria

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
1. The D-RAP ~~provides reasonable assurance~~ensures that the design of ~~risk-significant~~ SSCs ~~is consistent with their risk analysis assumptions~~within the scope of the reliability assurance program (Table 3.7-1) is consistent with the risk insights and key assumptions (e.g., SSC design, reliability, and availability).	~~Inspection will be performed for the existence of a report which establishes that the as-built risk-significant SSCs are supplied and installed as described in the certified design.~~An analysis will confirm that the design of RAP SSCs identified in Table 3.7-1 has been completed in accordance with applicable D-RAP activities.	An analysis report documents that safety-related ~~components~~ SSCs identified in Table 3.7-1 have been designed~~, procured, manufactured, transported, stored, and installed~~ in accordance with a 10 CFR 50 Appendix B ~~compliant~~ quality program. An analysis report documents that non-safety related ~~components~~ SSCs identified in Table 3.7-1 have been designed~~, procured, manufactured, transported, stored, and installed~~ in accordance with a program which satisfies quality assurance requirements for SSCs important to investment protection.

PRA Revision:
None

Technical Report (TR) Revision:
None