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Your ref: Docket No. 52-006
Our ref: DCP/NRC2208

July 18, 2008

Subject: AP1000 Response to Request for Additional Information (SRP10.3)

Westinghouse is submitting a response to the NRC request for additional information (RAI) on SRP Section 10.3. This RAI response is submitted in support of the AP1000 Design Certification Amendment Application (Docket No. 52-006). The information included in the response is generic and is expected to apply to all COL applications referencing the AP1000 Design Certification and the AP1000 Design Certification Amendment Application.

A response is provided for RAI-SRP10.3-SBPA-01 and -02 as sent in an email from Perry Buckberg to Sam Adams dated May 2, 2008. This response completes all requests received to date for SRP Section 10.3.

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,

for/ John DeBlasio

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

/Enclosure

1. Response to Request for Additional Information on SRP Section 10.3

D063
NRO

cc:	D. Jaffe	-	U.S. NRC	1E
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ENCLOSURE 1

Response to Request for Additional Information on SRP Section 10.3

AP1000 TECHNICAL REPORT REVIEW

Response to Request For Additional Information (RAI)

RAI Response Number: RAI-SRP10.3-SBPA-01
Revision: 0

Question:

In DCD Section 10.3.2.2.4, "Main Steam Isolation Valves," the applicant added that on loss of electric power the valves (MSIVs) remain in their current position. Since the closure of the MSIVs is credited for the mitigation of several design basis transients and accidents such as an inadvertent opening of a steam generator relief or safety valve, steam system piping failure, and steam generator tube rupture, the staff requests the applicant to provide an evaluation on the effects of maintaining the MSIVs in an open position with a loss of electrical power on the mitigation of these transients and accidents. Also, the staff requests the applicant to explain whether the events in DCD Chapter 15 have been analyzed with this MSIV fail-as-is logic, if so please provide the details and justification in this regard.

Westinghouse Response:

The statement: "On loss of electrical power the valves remain in their current position." To clarify that the MSIVs will not close on loss of electrical power to the actuator since the solenoids are normally de-energized and closed. This is not to imply that the valve MSIV will not close once a steamline isolation signal is generated.

As discussed in DCD Section 10.3.2.2.4 each main steam isolation is provided with a hydraulic/pneumatic actuator. The valve actuator consists of a hydraulic cylinder with a stored energy system to provide emergency closure of the isolation valve. The energy to operate the valve is stored in the form of compressed nitrogen contained in one end of the actuator cylinder. The main steam isolation valve is maintained in a normally open position by high-pressure hydraulic fluid. For emergency closure, redundant solenoids are energized resulting in the high-pressure hydraulic fluid being dumped to a fluid reservoir.

The redundant solenoids are powered by separate divisions from the Class 1E dc and UPS system. Energizing either solenoid will close the MSIV. Loss of both redundant power sources is beyond the design basis of the plant.

Design Control Document (DCD) Revision:
None

PRA Revision:
None

Technical Report (TR) Revision:
None

AP1000 TECHNICAL REPORT REVIEW

Response to Request For Additional Information (RAI)

RAI Response Number: RAI-SRP10.3-SBPA-02
Revision: 0

Question:

In Table 10.3.2-2, "Design Data for MAIN STEAM SAFETY VALVES," Page 10.3-18 of the DCD, the applicant revised the set pressures and relieving capacities of the main steam safety valve (MSSV) for the new design. The staff reviewed the applicant's revisions to these MSSV set pressures and relieving capacities. Since the MSSVs are credited for the mitigation of many design basis transients and accidents, including overpressure protection of the heat up events such as a loss of external electrical load and a turbine trip, the staff requests the applicant, to provide additional information with respect to the affects of the revised MSSV set pressures and relieving capacities on Chapter 15 event analysis. Also, the staff requests the applicant, to explain whether the applicant performed the Chapter 15 event analysis with the revised MSSV set pressures and relieving capacities.

Westinghouse Response:

Westinghouse included the revised MSSV setpoints and capacities in the evaluation of the limiting Chapter 15 event analyses provided in response to RAI-TR29-SRSB-01 (DCP/NRC2128). The results of the evaluation show that the impact of the changes to the MSSV parameters in addition to the pressurizer change and changes to the AP1000 internals design show minimal impacts on the limiting Chapter 15 events.

Design Control Document (DCD) Revision:
None

PRA Revision:
None

Technical Report (TR) Revision:
None