



Westinghouse Electric Company
Nuclear Power Plants
P.O. Box 355
Pittsburgh, Pennsylvania 15230-0355
USA

U.S. Nuclear Regulatory Commission
ATTENTION: Document Control Desk
Washington, D.C. 20555

Direct tel: 412-374-6206
Direct fax: 412-374-5005
e-mail: sisk1rb@westinghouse.com

Your ref: Docket No. 52-006
Our ref: DCP/NRC2223

August 15, 2008

Subject: AP1000 Response to Request for Additional Information (SRP8.3)

Westinghouse is submitting a response to the NRC request for additional information (RAI) on SRP Section 8.3. 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-SRP8.3-EEB-01 through -05 as sent in an email from Billy Gleaves to Sam Adams dated July 8, 2008. This response completes all requests received to date for SRP Section 8.3.

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,

A handwritten signature in black ink, appearing to read 'Robert Sisk'.

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

/Enclosure

1. Response to Request for Additional Information on SRP Section 8.3

cc:	D. Jaffe	- U.S. NRC	1E
	E. McKenna	- U.S. NRC	1E
	B. Gleaves	- U.S. NRC	1E
	P. Ray	- TVA	1E
	P. Hastings	- Duke Power	1E
	R. Kitchen	- Progress Energy	1E
	A. Monroe	- SCANA	1E
	J. Wilkinson	- Florida Power & Light	1E
	C. Pierce	- Southern Company	1E
	E. Schmiech	- Westinghouse	1E
	G. Zinke	- NuStart/Entergy	1E
	R. Grumbir	- NuStart	1E
	M. Demaglio	- Westinghouse	1E

ENCLOSURE 1

Response to Request for Additional Information on SRP Section 8.3

AP1000 TECHNICAL REPORT REVIEW

Response to Request For Additional Information (RAI)

RAI Response Number: RAI-SRP8.3-EEB-01
Revision: 0

Question:

Regarding the following statement in TR79: "The calculated value of short circuit current which represents the DCD defined and calculation supported source equipment sizes (UAT and RAT at 70MVA), and with an impedance value low enough to allow for the starting of the largest pump is well in excess of 50KA (about 58KA conservatively)." Rewrite the sentence as per our phone discussion. Provide justification for this change as to why the interrupting rating changed from 40kA to 63kA. Does this change the onsite distribution system analysis?

Westinghouse Response:

The onsite distribution system analysis supports the described engineering values. The value change from 40kA to 63 kA is based on a computation of short circuit current from an infinite source upstream of a UAT/ RAT, the assumption of infinite impedance between the secondary windings of the UAT/ RAT, a 100% motor contribution from the plant and a 6.5 multiplying factor on motor currents. This computation demonstrates that 40kA is inadequate and that 63kA is bounding given the UAT/ RAT size (defined in the DCD) and the expected largest motor size driving the allowed impedance of the UAT/ RAT transformers. These values will be confirmed with final design calculations.

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-SRP8.3-EEB-02

Revision: 0

Question:

Regarding the following statement in TR79: "Figure 8.3.1-1 (plant single line drawing) of the DCD did not show the air cooled chillers VWS-MS-02 and VWS-MS-03 being fed from the 6.9KV busses. This is inconsistent with the design for this size motor load and the DCD was revised to reflect these loads being directly connected to the 6.9kV busses." Provide background information on where the pumps were originally powered from and why this change was made. Also, provide discussion on whether this change will affect the onsite distribution system analysis. If not, provide explanation.

Westinghouse Response:

These loads (air cooled chillers) previously existed in the plant at the 480V level. This change was made to be consistent with our approach of loads greater than 250HP being fed directly from the medium voltage system when components are available to be procured. This change was evaluated with respect to the onsite distribution system analysis and will be reflected in the final design calculations.

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-SRP8.3-EEB-03
Revision: 0

Question:

Regarding the following statement in TR79: "The Revision 15 1-line figure, DCD figure 8.3.1-1 shows 3 feeders for 3 raw water pumps. The change is to have each of these three feeders support the respective raw water pump in addition to the auxiliaries of each pump (page 8.3-53)." Provide background information on where the pumps were originally powered and how in the revised design the pump auxiliaries will be powered. Also, provide discussion on whether this change will affect the onsite distribution system analysis. If not, provide explanation.

Westinghouse Response:

Previously the pumps were fed directly from the 6.9kV buses and the auxiliaries were supported from lower level (480V, etc) busses not demonstrated directly in the DCD. This change allows a single feeder to the raw water pumphouse (or similar structure) and distributes power within that structure.

As discussed in RAI-SRP8.3-01 and 02 the onsite distribution system analysis is bounding with respect to loading. Final analysis will consider site-specific design.

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-SRP8.3-EEB-04
Revision: 0

Question:

Figures 8.3.1-1 and 2.6.1-1 with regard to unit auxiliary transformer ZAS-ET-2C do not match. What is the purpose of DCD page 52--It shows the same line diagram as 8.3.1-1.

Westinghouse Response:

Figure 2.6.1-1 has been updated to match the basic configuration as shown in figure 8.3.1-1. This change was incorporated into the DCD Rev.16 by APP-GW-GLR-134 (Technical Report Number 134), Revision 0.

There is no page 52 in DCD Revision 16. The page 52 that you are referring to is in the redline/strikeout version of the DCD that was provided to the staff as a reviewer's aid only.

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-SRP8.3-EEB-05
Revision: 0

Question:

In DCD Revision 16, provide justification for the changes listed in Table 8.3.1-2 (Sheets 2, 3, & 4 of 4).

Westinghouse Response:

APP-GW-GLN-111 and APP-GW-GLN-014 revised the nominal sizes of various pieces of equipment. This technical information was incorporated into the affected diesel loading tables. The sum total was updated accordingly. The DCD mark-ups for Table 8.3.1-2 are contained in the two aforementioned reports listed as references below. The mark-ups for Sheets 2 and 3 are in Reference 1 and the mark-ups for Sheet 4 are in Reference 2.

References:

1. APP-GW-GLN-111, "CCS and SWS Changes Required for Increased Heat Loads", Technical Report Number 111
2. APP-GW-GLN-014, "Integrated Head Package Design", Technical Report Number 61

Design Control Document (DCD) Revision:

None

PRA Revision:

None

Technical Report (TR) Revision:

None