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Your ref: Docket No. 52-006
Our ref: DCP/NRC2293

November 20, 2008

Subject: AP1000 Updated Piping Review Schedule

In Westinghouse letter DCP/NRC2228, dated August 15, 2008 Westinghouse submitted proposed changes to the AP1000 Design Control Document (DCD) to remove the Piping Design Acceptance Criteria (DAC). The changes identified were included in Revision 17 of the AP1000 Design Control Document. The DCD changes reflect an understanding that Westinghouse and the NRC staff have reached on an approach to resolve the Piping DAC. The NRC has agreed to onsite technical review meetings to review piping design information and piping analyses prepared by Westinghouse to resolve the Piping DAC. The NRC review and audit of the design information provides verification that the AP1000 design implements the analysis methods and criteria discussed in the DCD.

This letter provides an update to Westinghouse's plans and schedule to complete analyses to resolve the piping DAC. During the week of October 20, 2008 the NRC staff conducted an onsite technical review of a portion of the AP1000 piping design and analyses. This review was in support of resolving and removing the piping Design Acceptance Criteria from the Design Control Document. At the conclusion of the review Westinghouse agreed to provide this update to the plans and schedule to complete analyses to resolve the piping DAC.

During previous discussions and reviews of the AP1000 ASME Code, Section III piping design the NRC identified the risk significant piping analysis packages that should be available for NRC review. During the October 20 review the NRC reviewed selected ASME Code Class 1 pipe analysis packages. To resolve the piping DAC Westinghouse will make the remaining Class 1 and Class 2 and 3 analysis packages available for NRC review.

The information in the piping design packages for the as-designed piping includes design specifications, stress analyses, seismic analysis, support design, applicable fatigue analysis, applicable thermal analyses, and postulated pipe break locations. The as-designed piping design includes material, pipe size, layout and equipment location, and support and hanger location and design.

The design specifications include the requirements for methods, criteria, and codes from the design control document, design transients, material requirements, seismic requirements, and other requirements. The design specifications will be complete, except for as-procured information, and include the

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information required for design, analysis and fabrication of the piping and include the appropriate professional engineer certification for the Class 1 design specification.

As part of the design packages Westinghouse will prepare design reports that summarize the analysis results that meet the various stress equations in the ASME Code and the piping design specification. The design report will provide results for the highest stress location. Results at other locations will be available in the back-up calculations. The design reports will include fatigue analysis results when required by the ASME Code. As-procured information for items like valves will not be included in the design reports prepared to close the design ITAAC. Representative (bounding) information will be used for valves and other items to be procured. The design reports and supporting calculations and analyses will be complete. The regulatory requirement for completion of design information is that it can support procurement, fabrication, and installation of the piping. For the AP1000 this means that the design reports and supporting calculations and analyses will be signed, verified, and under configuration control.

Tabulated in Attachment 1 are the ASME Code Class 1, 2, and 3 risk significant analysis packages that Westinghouse has or will complete for NRC review in support of resolution of the piping DAC. These packages are divided by system and identified by package number. The packages with an X in the first column (headed with an asterisk) are the completed packages provided for NRC during the review held the week of October 20. The last column on the left indicates whether the package is inside or outside of containment.

Westinghouse expects to complete the design and analysis for the tabulated piping packages by the end of June. Westinghouse will confirm the completion of these packages when completed and provide periodic status updates to the NRC. Westinghouse also intends to make piping package design information and analyses available in our Rockville office as packages are completed prior to the completion of total set of packages to facilitate and optimize the NRC review.

The information provided above should permit the NRC to complete its schedule for the review of the AP1000 Design Certification amendment. We expect that this information is sufficient to permit scheduling of review resources to support a review meeting soon after the piping analyses are completed. Westinghouse requests that this review be given sufficient priority to preclude adverse impact on the overall Design Certification amendment review schedule. Finally, Westinghouse expects that the revised responses and the audit of the calculations will resolve the close out the review of the piping DAC.

Questions related to the content and preparation of this letter 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

cc:	B. Gleaves	-	U.S. NRC	1E
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Attachment 1
Piping Analyses Supporting Piping DAC

RCS

*	Pipe Stress Analysis Report	Description	Diameter (in)	IN/Out#
	APP-RCS-PLR-010	ADS Stage 1, 2, and 3 and Pressurizer Safety Valve Inlets	14, 8, 6, 4, 3, 1	IN
	APP-RCS-PLR-020	Pressurizer Spray, Auxiliary Spray, CVS Letdown, CVS Charging	4, 3, 2	IN
X	APP-RCS-PLR-030	ADS Stage 4 Loop 2	18, 14	IN
X	APP-RCS-PLR-040	Pressurizer Surge line Loop 1	18	IN
X	APP-RCS-PLR-050	Primary Loop	22, 31	IN

PXS

	Pipe Stress Analysis Report	Description	Diameter (in)	IN/Out
	APP-PXS-PLR-010	Direct Vessel Injection, Core Makeup Tank Discharge, Normal Residual Heat Removal Discharge, In-Containment Refueling Water Storage Tank Gravity Injection, and Containment Recirculation Lines Train A	8, 6, 1	IN
	APP-PXS-PLR-020	Direct Vessel Injection, Core Makeup Tank Discharge, Normal Residual Heat Removal Discharge, In-Containment Refueling Water Storage Tank Gravity Injection, and Containment Recirculation Lines Train B	8, 6, 1	IN
	APP-PXS-PLR-030	ADS Stage 4 Loop 1 and PRHR HX Inlet Isolation	18, 14, 12	IN
	APP-PXS-PLR-040	PRHR HX Return Loop 1	14	IN
	APP-PXS-PLR-050	Core Makeup Tank Supply Train A	8, 1	IN
	APP-PXS-PLR-060	Core Makeup Tank Supply Train B	8, 1	IN
	APP-PXS-PLR-620	ACC-A/B Makeup	1	IN

CCS

	Pipe Stress Analysis Report	Description	Diameter (in)	In/Out
	APP-CCS-PLR-040	Component Cooling from Penetration C01 IRC	10	IN
	APP-CCS-PLR-050	Component Cooling from Penetration C02 IRC	10, 1	IN
	APP-CCS-PLR-810	Component Cooling from Penetration C01 ORC	10, 1	OUT

Attachment 1 Piping Analyses Supporting Piping DAC				
	APP-CCS-PLR-820	Component Cooling from Penetration C02 ORC	10	OUT
CVS				
	Pipe Stress Analysis Report	Description	Diameter (in)	In/Out
	APP-CVS-PLR-090	CVS Makeup from Penetration C03 IRC	3, 1	IN
	APP-CVS-PLR-100	CVS Letdown from Penetration C02 IRC	2	IN
	APP-CVS-PLR-530	CVS Makeup from Penetration C03 ORC	3	OUT
RNS				
	Pipe Stress Analysis Report	Description	Diameter (in)	In/Out
X	APP-RNS-PLR-010	Normal Residual Heat Removal Suction Loop 2	10, 3, 1	IN
	APP-RNS-PLR-100	From Spent Fuel to RNS and PCCWST Drain	8, 2, 1	OUT
	APP-RNS-PLR-170	Normal RHR to Heat Exchangers and Pumps from Containment Penetrations C01 and C02	10, 8, 6, 4, 3, 1	OUT
SFS				
	Pipe Stress Analysis Report	Description	Diameter (in)	In/Out
	APP-SFS-PLR-350	Spent Fuel Cooling Module R3-65	6, 4, 2, 1	OUT
	APP-SFS-PLR-600	SFS from Penetration C01	4	IN
SGS				
	Pipe Stress Analysis Report	Description	Diameter (in)	In/Out
	APP-SGS-PLR-010	Feedwater to SG 01	20, 1	IN
	APP-SGS-PLR-020	Feedwater to SG 02	20, 1	IN
	APP-SGS-PLR-030	Main Steam to SG 01	38, 24, 12, 10, 8, 6, 3, 2, 1	IN
	APP-SGS-PLR-040	Main Steam to SG 02	38, 138, 24, 12, 10, 8, 6, 3, 2, 1	IN
	APP-SGS-PLR-070	SG 01 Blowdown to Penetration C03A	4, 1	IN
	APP-SGS-PLR-080	SG 02 Blowdown to Penetration C03B	4, 1	IN
	APP-SGS-PLR-110	SG 01 Startup Feed Water to Penetration C05A	6	OUT
	APP-SGS-PLR-120	SG 02 Startup Feed Water to Penetration C05B	6	OUT
	APP-SGS-PLR-310	SG 01 Startup Feed Water from Penetration C05A	6	IN
	APP-SGS-PLR-320	SG 02 Startup Feed Water from Penetration C05B	6	IN

VBS				
	Pipe Stress Analysis Report	Description	Diameter (in)	In/Out
	APP-VBS-PLR-***	Nonradioactive Vent Return from Main Control Room	28, 1	OUT
	APP-VBS-PLR-***	Nonradioactive Vent Supply to Main Control Room	28, 16, 1	OUT
VWS				
	Pipe Stress Analysis Report	Description	Diameter (in)	In/Out
	APP-VWS-PLR-500	VWS Supply from Containment Penetration C02	8, 1	IN
	APP-VWS-PLR-530	VWS Return to Containment Penetration C01	8	IN
	APP-VWS-PLR-910	VWS Supply to Containment Penetration C02	8	OUT
	APP-VWS-PLR-920	VWS Return from Containment Penetration C01	8, 1	OUT
PCS+				
	Pipe Stress Analysis Report	Description	Diameter (in)	In/Out
	APP-PCS-PLR-100	PCS Recirculation, DWS Supply, and FPS Supply	6, 4, 3, 2, 1	OUT

* Analyses reviewed by the NRC during the week of October 20, 2008
# Inside or Outside containment
+ The PCS recirculation line previously included has been deleted, embedded pipe is analyzed by the structural designers.