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Your ref: Docket No. 52-006
Our ref: DCP_NRC_002661

October 15, 2009

Subject: AP1000 Response to Proposed Open Item (Chapter 3)

Westinghouse is submitting the following responses to the NRC open item (OI) on Chapter 3. These proposed open item response are submitted in support of the AP1000 Design Certification Amendment Application (Docket No. 52-006). The information included in these responses 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 proposed Open Item(s):

OI-SRP3.3.2-SEB1-01

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 Proposed Open Item (Chapter 3)

D063
NRO

cc:	D. Jaffe	-	U.S. NRC	1E
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	C. Pierce	-	Southern Company	1E
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	G. Zinke	-	NuStart/Entergy	1E
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ENCLOSURE 1

AP1000 Response to Proposed Open Item (Chapter 3)

AP1000 DESIGN CERTIFICATION REVIEW

Response to SER Open Item (RAI)

RAI Response Number: OI-SRP3.3.2-SEB1-01
Revision: 0

Question:

Westinghouse responded to RAI-SRP3.3.2-SEB1-01 regarding the issue of missiles that are produced by the potential blow-off of the siding on the annex building as well as turbine building. In its response, Westinghouse indicated that "The automobile in the missile spectrum included in the AP1000 would appear to bound the mass and energy of sheet metal siding. Also there are no safety related structures, systems, and components outside of the Auxiliary Building and Shield Building. The walls of these buildings are reinforced concrete at least two feet thick. Tornado driven siding would not be expected to be a challenge to reinforced concrete walls." The staff notes that the construction of the shield building is not reinforced concrete and can best be described as "steel-concrete-steel modular wall construction." It is likely that the siding missile can penetrate the steel sheet of the modular wall of the shield building.

Westinghouse Response:

The steel sheets referred to in the staff question are ASTM A572 Grade 65 steel plates. The steel plates range in thickness from 0.5 inch to 0.75 inch thick on both the interior and exterior surfaces. They are much stronger than the siding on the annex and turbine buildings; and therefore, no penetration is possible. Further, the shield building wall that is exposed to a potential siding missile is at least 3 feet thick including both the concrete and steel plate. The shield building design for the portion that is exposed to the siding missile is described below:

The portion of the shield building cylindrical wall not protected by the auxiliary building is a composite steel and concrete (SC) construction using 0.5 inch steel surface plates on both the interior and exterior surface acting as reinforcement to the cylindrical shield building wall. The two 0.5 inch steel plates act compositely with 35 inch thick concrete.

In the area of the Air Inlets above the shield building cylinder, the wall is generally 4'-6" thick and tapers down to 3'-0" thick at the cylindrical wall. Instead of ½ inch steel plates, ¾ inch steel plates are used on the exterior and interior faces.

In the area of the Tension Ring above the Air Inlets and below the roof, the wall is 3'-3" thick (including 3/4 inch thick surface steel plates on each face). Concrete is poured in between the plates, and it is designed as an SC structure.

The conical roof is a composite steel and reinforced concrete shell. The reinforced concrete slab above the conical roof steel frame, outside of the Passive Containment Cooling System tank, is 3 feet thick.

AP1000 DESIGN CERTIFICATION REVIEW

Response to SER Open Item (RAI)

Design Control Document (DCD) Revision: None

PRA Revision: None

Technical Report (TR) Revision: None