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Your ref: Docket No. 52-006
Our ref: DCP/NRC2271

October 2, 2008

Subject: AP1000 Response to Request for Additional Information (SRP3.4.2)

Westinghouse is submitting a response to the NRC request for additional information (RAI) on SRP Section 3.4.2. 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-SRP3.4.2-SEB1-01, as sent in an email from Billy Gleaves to Sam Adams dated September 16, 2008. This response completes all requests received to date for SRP Section 3.4.2.

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 3.4.2

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

Response to Request for Additional Information on SRP Section 3.4.2

AP1000 TECHNICAL REPORT REVIEW

Response to Request For Additional Information (RAI)

RAI Response Number: RAI-SRP3.4.2-SEB1-01
Revision: 0

Question:

The design of the Radwaste Building has been amended to incorporate three new additional liquid waste monitor tanks and the associated piping systems (see TR-116).

Provide an analysis to show that external flooding caused by the release of the liquid from tank rupture and collapse of the Radwaste Building due to safe shutdown earthquake (SSE) or other extreme environmental events will not impair the structural integrity of the adjacent nuclear island (NI) structures.

Concern:

The Radwaste Building is a nonseismic structure designed under the Uniform Building Code. Therefore, in the DCD the building is allowed to collapse. As a result of the design amendment where three heavy weighted tanks (with 15,000 gallon capacity each) are added to the building, a large amount of liquid may be released when the building collapse to cause tank failure due to SSE or other extreme environmental events. The released liquid could result in internal as well as external flooding. The internal flooding is of no safety concern as the SSCs inside the building are all non-safety related. However, the external flooding may produce large hydrodynamic loads exerted on the nearby NI Seismic Category I buildings, thereby threatening the structural integrity of the safety-related structures. Justification is therefore needed to demonstrate that safety will not be compromised when the external flooding takes place at the NI structures as a result of the potential collapse of the Radwaste Building and monitor tanks.

Westinghouse Response:

The general response to this RAI is the same basis as the response to RAI-SRP3.7.2-SEB1-02 and summarized herein. The figure listed below and shown herein has the same RAI listed number and is repeated for clarity. The response to RAI-SRP3.7.2-SEB1-02 includes loads due to impact caused by fluid and tank mass contributions.

The potential hydrodynamic loads that may be produced by the waste monitor tank rupture will not exceed the tornado loads defined below. This is because the water will drain away from the Auxiliary Building and any buildup of water level will be small.

The following tornado missiles are defined for seismic category I structures:

- 1) A massive high-kinetic-energy missile, which deforms on impact. It is assumed to be a 4000-pound automobile impacting the structure at normal incidence with a horizontal velocity of 105 mph or a vertical velocity of 74 mph.

AP1000 TECHNICAL REPORT REVIEW

Response to Request For Additional Information (RAI)

- 2) A rigid missile of a size sufficient to test penetration resistance. It is assumed to be a 275-pound, eight inch armor-piercing artillery shell impacting the structure at normal incidence with a horizontal velocity of 105 mph or a vertical velocity of 74 mph.

Response to RAI-SRP3.7.2-SEB1-02 shows kinetic energy of the tanks is less than the kinetic energy of the tornado missiles. Since the energy associated with the tornado missiles is greater than the energy of the tanks, the design of the Auxiliary Building for impact from liquid waste monitor tanks is enveloped by the design against tornado missiles.

It can be concluded, that the addition of three new liquid waste monitor tanks will not compromise the structural integrity of the neighboring Auxiliary Building.

The three new liquid waste monitor tanks are located in the Radwaste Building between wall line FR and GR in Figure RAI-SRP3.7.2-SEB1-02- 1. As seen in this figure, the tanks are located in the area of the Radwaste Building that extends beyond the Auxiliary Building, which separate them from the Auxiliary building. It is unlikely the tanks will impact the south side of the Auxiliary Building directly. It is more likely that if the Radwaste Building failed and this failure caused a subsequent Monitor Tank(s) collapsed, the tanks would push the liquid contents to the west and outside of the Auxiliary Building and not a direct impact to the building.

In addition, if the contents of 3 tanks failed and all of the water flowed within the Radwaste Building the liquid would flood up to a level of 6 inches within the Radwaste Building outside dimensions. This would not create any significant hydrodynamic force on the Auxiliary Building wall.

AP1000 TECHNICAL REPORT REVIEW

Response to Request For Additional Information (RAI)

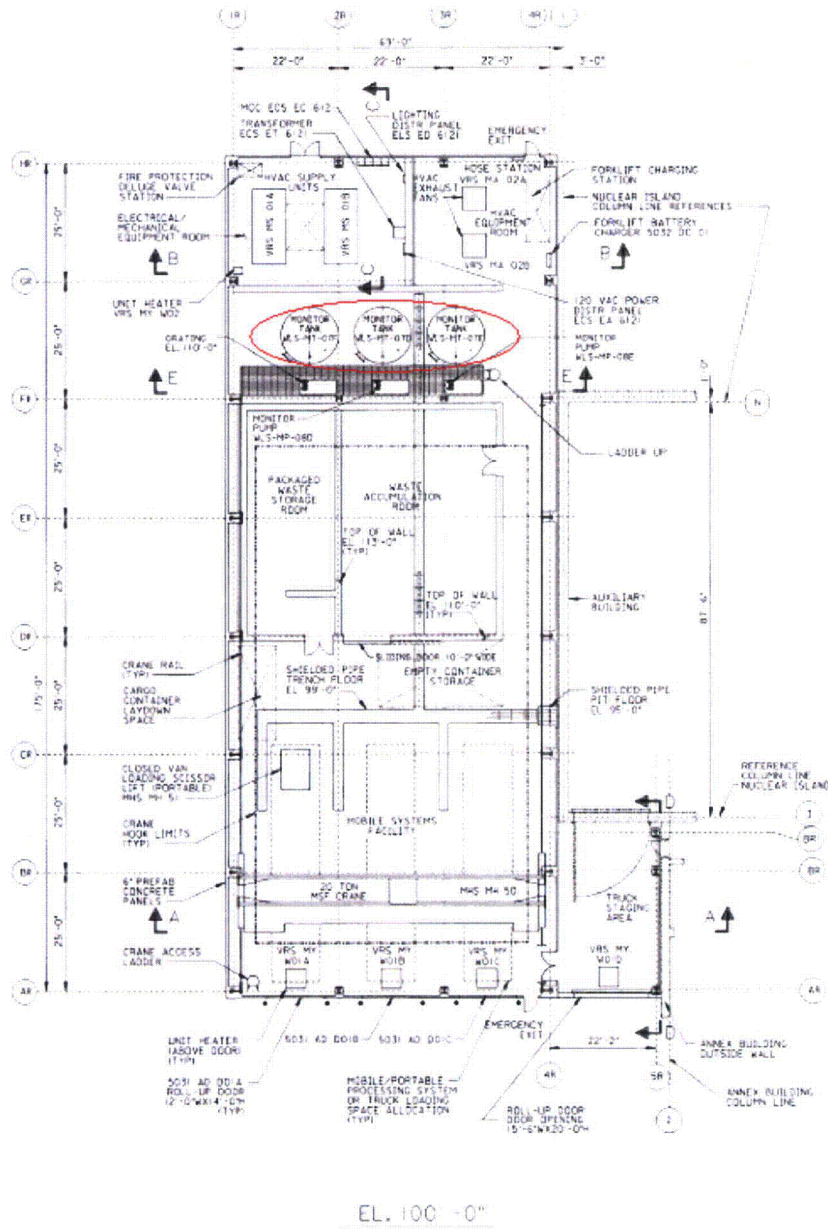


Figure RAI-SRP3.7.2-SEB1-02- 1: Section E-E Radwaste Building

References:

1. APP-GW-GLN-116 "Additional Liquid Radwaste Monitor Tanks and Radwaste Building Extension"

AP1000 TECHNICAL REPORT REVIEW

Response to Request For Additional Information (RAI)

Design Control Document (DCD) Revision:

None

PRA Revision:

None

Technical Report (TR) Revision:

None