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Your ref: Docket No. 52-006  
Our ref: DCP/NRC2204

July 17, 2008

Subject: AP1000 Response to Request for Additional Information (SRP2.3.4)

Westinghouse is submitting a response to the NRC request for additional information (RAI) on SRP Section 2.3.4. 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-SRP2.3.4-RSAC-01 through -04 as sent in an email from Dave Jaffe to Sam Adams dated April 10, 2008. This response completes all requests received to date for SRP Section 2.3.4.

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 2.3.4

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

Response to Request for Additional Information on SRP Section 2.3.4

# AP1000 TECHNICAL REPORT REVIEW

## Response to Request For Additional Information (RAI)

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RAI Response Number: RAI-SRP2.3.4-RSAC-01  
Revision: 0

**Question:**

This RAI refers to Revision 0 to APP-GW-GLN-122. APP-GW-GLN-122 revised site boundary, low population zone boundary, and control room atmospheric dispersion site parameters. Pursuant to Section III.6.b.4 of SPR 2.3.4, please provide a technical basis for the values chosen for the revised atmospheric dispersion site parameters.

**Westinghouse Response:**

The atmospheric dispersion factors (X/Q) identified in APP-GW-GLN-122 were increased from the values in DCD Revision 15 safety analysis. As discussed in the Section II Introduction of the technical report, "the changes allow the use of increased atmospheric dispersion factors (X/Q), which are appropriate based on current industry data with more realistic / updated radioactive material transport factors."

The increases in atmospheric dispersion factors are technically supported by the changes in certain accident radiological consequences analyses. For the LOCA this included taking credit for aerosol impaction removal in the containment leakage pathway and for the fuel handling accident the decay period prior to the postulated accident was increased from 24 hours to 48 hours.

**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)

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RAI Response Number: RAI-SRP2.3.4-RSAC-02  
Revision: 0

**Question:**

This RAI refers to Revision 0 to APP-GW-GLE-001. The introduction to APP-GW-GLE-001 states that this DCD change is a clarification of the annex building expansion and condenser air removal stack relocation impact on the control room atmospheric dispersion factors information contained in the AP1000. Doesn't this DCD change also address the impact of the relocation of the air inlet structure (APP-GW-GEE-228) on the control room atmospheric dispersion factors?

**Westinghouse Response:**

Design change APP-GW-GEE-228 relocated the control room intake to a distance of approximately 43.5 feet from the shield building to meet the 10-meter distance requirement of Regulatory Guide 1.194.

By increasing the distance between the inlet air structure and the potential activity release points there is a dose reduction benefit. As such, it was not necessary to recalculate the atmospheric dispersion factors.

For Combined Operating License applications, the applicant will determine the atmospheric dispersion based on the site characteristics. As long as the site atmospheric dispersion is equal to or better than the dispersions shown in the DCD, the MCR doses will be within acceptable levels.

**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)

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RAI Response Number: RAI-SRP2.3.4-RSAC-03  
Revision: 0

**Question:**

This RAI refers to Revision 0 to APP-GW-GLE-001. Please provide a copy of Design Change Proposals APP-GW-GEE-158, "Annex Building Expanded Office Area," and APP-GW-GEE-228, "Outside Air Inlet Structure."]

APP-GW-GLE-001 made revisions to DCD Revision 16 Tier 2, Table 15A-7, "Control Room Source/Receptor Data for Determination of Atmospheric Dispersion Factors," and Figure 15A-1, "Site Plan with Release and Intake Locations," to reflect the relocation of the control room air intake and the annex building entrance. DCD Tier 2, Table 15A-7 identifies the AP1000 source and receptor data to be used by the COL applicant when determining site-specific control room x/Q values and DCD Tier 2, Figure 15A-1 indicates the location of potential release points and their relationship to the main control room air intake and the annex building access door. The intent of this RAI was to independently verify the information presented in Table 15A-7 and Figure 15A-1 regarding the relocation of the control room air intake and the annex building entrance. [Note: APP-GW-GLE-001 implemented a correction to the location of the condenser air removal stack shown in DCD Figure 15A-1 due to an inconsistency between Figure 15A-7 and engineering design drawings].

As an option to providing a copy of the requested design change proposals, Westinghouse could provide the engineering design drawings showing the revised locations and details of the outside air inlet structure and annex building entrance.

**Westinghouse Response:**

The design change proposals are available for NRC review.

**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)

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RAI Response Number: RAI-SRP2.3.4-RSAC-04  
Revision: 0

### **Question:**

This RAI refers to Revision 0 to APP-GW-GLE-001. Is the source identified in DCD Tier 2, Table 15A-7 as "Fuel Building Rail Bay Door" the same source identified in DCD Tier 2, Figure 15A-1 as "Radwaste Building Truck Staging Area Door?"

### **Westinghouse Response:**

Yes, it is the same source.

Table 15A-7 should specify the release point as being the "Radwaste Building Truck Staging Area Door" instead of the "Fuel Building Rail Bay Door."

These two doors are on opposite ends of the radwaste building truck staging area. However, the truck staging area door is the outside release point for radioactivity coming out of the fuel building through the rail bay door. Prior to the addition of the truck staging area, the fuel building rail bay door opened directly to the outside and was properly identified as the release point.

Figure 15A-1 in APP-GW-GLE-001 was revised to correctly indicate that Source 4 is the Radwaste Building Truck Staging Area Door and the appropriate release elevations and horizontal distances are provided in Table 15A-7. However, the Source 4 description in the Table 15A-7 needs to be revised to be consistent with the correct Source 4 description in the Figure 15A-1.

### **Design Control Document (DCD) Revision:**

Tier 2, Table 15A-7 will be revised to change the Source 4 Description from the "Fuel Building Rail Bay Door" to correctly indicate "Radwaste Building Truck Staging Area Door" as follows:

# AP1000 TECHNICAL REPORT REVIEW

## Response to Request For Additional Information (RAI)

Table 15A-7

### CONTROL ROOM SOURCE/RECEPTOR DATA FOR DETERMINATION OF ATMOSPHERIC DISPERSION FACTORS

Source Description	Release Elevation Note 1 (m)	Horizontal Straight-Line Distance to Receptor (m)		
		Control Room HVAC Intake (Elevation 19.9 m)	Annex Building Access (Elevation 1.5 m)	Comment
Plant Vent	55.7	39.6	76.8	
PCS Air Diffuser	69.8	32.3	68.9	
Containment Shell (Diffuse Area Source)	Same as receptor elevation (19.9 m or 1.5 m)	11.0	47.2	Note 2
Fuel Building Blowout Panel	17.4	50.0	89.7	Note 3
Fuel Building Rail Bay Radwaste Building Truck Staging Area Door	1.5	52.4	92.1	Note 3
Steam Vent	17.1	18.3	48.8	
PORV/Safety Valves	19.2	19.8	44.1	
Condenser Air Removal Stack	7.6	63.0	59.9	Note 3

**Notes:**

1. All elevations relative to grade at 0.0 m.
2. For calculating distance, the source is defined as the point on the containment shell closest to receptor.
3. Vertical distance traveled is conservatively neglected.

**PRA Revision:**

None

**Technical Report (TR) Revision:**

None