ArevaEPRDCPEm Resource

From: WELLS Russell D (AREVA NP INC) [Russell.Wells@areva.com]
Sent: Thursday, September 10, 2009 6:57 PM
To: Tesfaye, Getachew
Cc: Miernicki, Michael; Pederson Ronda M (AREVA NP INC); DELANO Karen V (AREVA NP INC); BENNETT Kathy A (OFR) (AREVA NP INC)
Subject: Response to U.S. EPR Design Certification Application RAI No. 254, FSAR Ch 12, Supplement 1 (Part 3 of 3)
Attachments: RAI 254 Supplement 1 Response US EPR DC (Part 3 of 3).pdf

Getachew,

Attached is the public version of AREVA NP Inc.'s RAI 254 Supplement 1 response document, Part 3 of 3.

Sincerely,

(Russ Wells on behalf of)

Ronda Pederson
ronda.pederson@areva.com
Licensing Manager, U.S. EPR Design Certification
AREVA NP Inc.
An AREVA and Siemens company
3315 Old Forest Road
Lynchburg, VA 24506-0935
Phone: 434-832-3694
Cell: 434-841-8788

From: WELLS Russell D (AREVA NP INC)
Sent: Thursday, September 10, 2009 6:55 PM
To: 'Getachew Tesfaye'
Cc: 'Michael Miernicki'
Subject: Response to U.S. EPR Design Certification Application RAI No. 254, FSAR Ch 12, Supplement 1 (Part 2 of 3)

Getachew,

Attached is the public version of AREVA NP Inc.'s RAI 254 Supplement 1response document, Part 2 of 3.

Sincerely,

(Russ Wells on behalf of)

Ronda Pederson
ronda.pederson@areva.com
Licensing Manager, U.S. EPR Design Certification
AREVA NP Inc.
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3315 Old Forest Road
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Phone: 434-832-3694
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From: WELLS Russell D (AREVA NP INC)
Sent: Thursday, September 10, 2009 6:48 PM
To: 'Getachew Tesfaye'
Cc: 'Michael Miernicki'; Pederson Ronda M (AREVA NP INC); DELANO Karen V (AREVA NP INC); BENNETT Kathy A (OFR) (AREVA NP INC)
Subject: Response to U.S. EPR Design Certification Application RAI No. 254, FSAR Ch 12, Supplement 1 (Part 1 of 3)

Getachew,

Attached is the public version of AREVA NP Inc.'s RAI 254 Supplement 1 response document.

AREVA NP Inc. (AREVA NP) provided a schedule for a technically correct and complete response to RAI No. 254 on July 16, 2009. The attached file, "RAI 254 Supplement 1 Response US EPR DC.pdf," provides technically correct and complete responses to the remaining 4 questions, as committed. Due to E-mail size restrictions, the response file has been divided into 3 parts.

Because the response file contains sensitive unclassified non-safeguards information (SUNSI) that should be withheld from public disclosure in accordance with 10 CFR 2.390, a public version is provided with the SUNSI redacted in this email transmittal. This email does not contain any SUNSI. The unredacted SUNSI version is provided under separate email.

Appended to this file are affected pages of the U.S. EPR Final Safety Analysis Report in redline-strikeout format which support the response to RAI 254 Questions 12.03-12.04-12 and 12.03-12.04-13.

The following table indicates the respective pages in the response document, "RAI 254 Supplement 1 Response US EPR DC.pdf," that contain AREVA NP's response to the subject questions.

Question #	Start Page	End Page
RAI 254 — 12.03-12.04-12	2	2
RAI 254 — 12.03-12.04-13	3	4
RAI 254 — 12.03-12.04-14	5	6
RAI 254 — 12.03-12.04-15	7	13

This concludes the formal AREVA NP response to RAI 254, and there are no questions from this RAI for which AREVA NP has not provided responses.

Sincerely,

(Russ Wells on behalf of)
Ronda Pederson
ronda.pederson@areva.com
Licensing Manager, U.S. EPR Design Certification
AREVA NP Inc.
An AREVA and Siemens company
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Lynchburg, VA 24506-0935
Phone: 434-832-3694
Cell: 434-841-8788

From: Pederson Ronda M (AREVA NP INC)
Sent: Thursday, July 16, 2009 4:52 PM

To: 'Tesfaye, Getachew'
Cc: BENNETT Kathy A (OFR) (AREVA NP INC); DELANO Karen V (AREVA NP INC); GUCWA Len T (EXT)
Subject: Response to U.S. EPR Design Certification Application RAI No. 254, FSARCh. 12

Getachew,

Attached please find AREVA NP Inc.'s response to the subject request for additional information (RAI). The attached file, "RAI 254 Response US EPR DC.pdf" provides a schedule since technically correct and complete responses to the 4 questions are not provided.

The following table indicates the respective pages in the response document, "RAI 254 Response US EPR DC.pdf," that contain AREVA NP's response to the subject question.

Question #	Start Page	End Page
RAI 254 — 12.03-12.04-12	2	2
RAI 254 — 12.03-12.04-13	3	3
RAI 254 — 12.03-12.04-14	4	4
RAI 254 — 12.03-12.04-15	5	5

A complete answer is not provided for the 4 questions. The schedule for technically correct and complete responses to these questions is provided below.

Question #	Response Date
RAI 254 — 12.03-12.04-12	September 10, 2009
RAI 254 — 12.03-12.04-13	September 10, 2009
RAI 254 — 12.03-12.04-14	September 10, 2009
RAI 254 — 12.03-12.04-15	September 10, 2009

Sincerely,

Ronda Pederson
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From: Tesfaye, Getachew [mailto:Getachew.Tesfaye@nrc.gov]
Sent: Thursday, June 25, 2009 7:21 AM
To: ZZ-DL-A-USEPR-DL
Cc: Bernal, Sara; Frye, Timothy; Jennings, Jason; Colaccino, Joseph; ArevaEPRDCPEm Resource
Subject: U.S. EPR Design Certification Application RAI No. 254 (3052), FSARCh. 12

Attached please find the subject requests for additional information (RAI). A draft of the RAI was provided to you on May 18, 2009, and on June 24, 2009, you informed us that the RAI is clear and no further clarification is needed. As a result, no change is made to the draft RAI except minor editorial corrections. The schedule we have established for review of your application assumes technically correct and complete responses within 30 days of receipt of RAIs. For any RAIs that cannot be answered within 30 days, it is expected that a date for

receipt of this information will be provided to the staff within the 30 day period so that the staff can assess how this information will impact the published schedule.

Thanks,
Getachew Tesfaye
Sr. Project Manager
NRO/DNRL/NARP
(301) 415-3361

Hearing Identifier: AREVA_EPR_DC_RAIs
Email Number: 797

Mail Envelope Properties (1F1CC1BBDC66B842A46CAC03D6B1CD4101EC129E)

Subject: Response to U.S. EPR Design Certification Application RAI No. 254, FSAR Ch 12, Supplement 1 (Part 3 of 3)
Sent Date: 9/10/2009 6:57:23 PM
Received Date: 9/10/2009 6:57:34 PM
From: WELLS Russell D (AREVA NP INC)

Created By: Russell.Wells@areva.com

Recipients:
"Miernicki, Michael" <Michael.Miernicki@nrc.gov>
Tracking Status: None
"Pederson Ronda M (AREVA NP INC)" <Ronda.Pederson@areva.com>
Tracking Status: None
"DELANO Karen V (AREVA NP INC)" <Karen.Delano@areva.com>
Tracking Status: None
"BENNETT Kathy A (OFR) (AREVA NP INC)" <Kathy.Bennett@areva.com>
Tracking Status: None
"Tesfaye, Getachew" <Getachew.Tesfaye@nrc.gov>
Tracking Status: None

Post Office: AUSLYNCMX02.adom.ad.corp

Files	**Size**	**Date & Time**
MESSAGE	6341	9/10/2009 6:57:34 PM
RAI 254 Supplement 1 Response US EPR DC (Part 3 of 3).pdf	2209438	

Options
Priority: Standard
Return Notification: No
Reply Requested: No
Sensitivity: Normal
Expiration Date:
Recipients Received:

Figure 12.03-12.04-15-1—RANKERN Coordinates Origen for Model

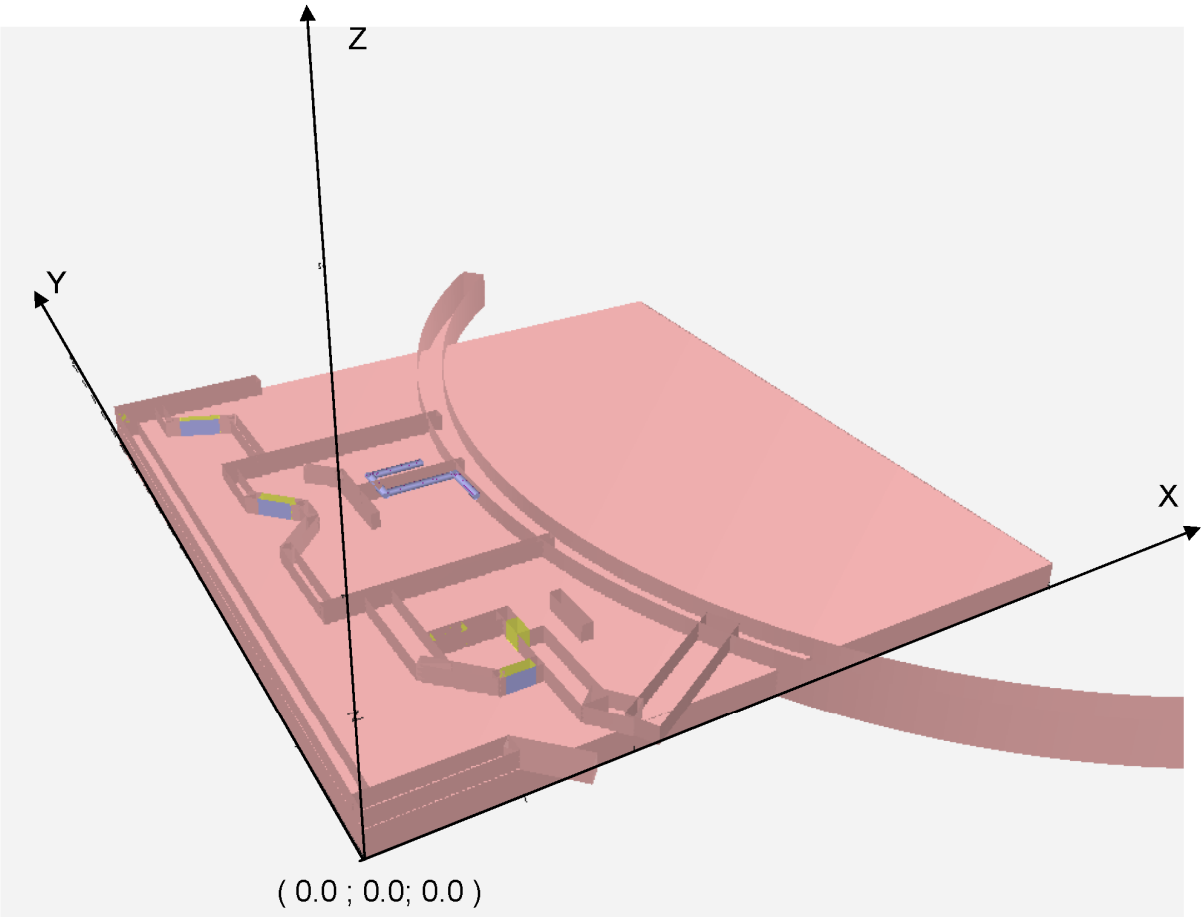


Figure 12.03-12.04-15-2—Residual Heat Removal System Piping Layout

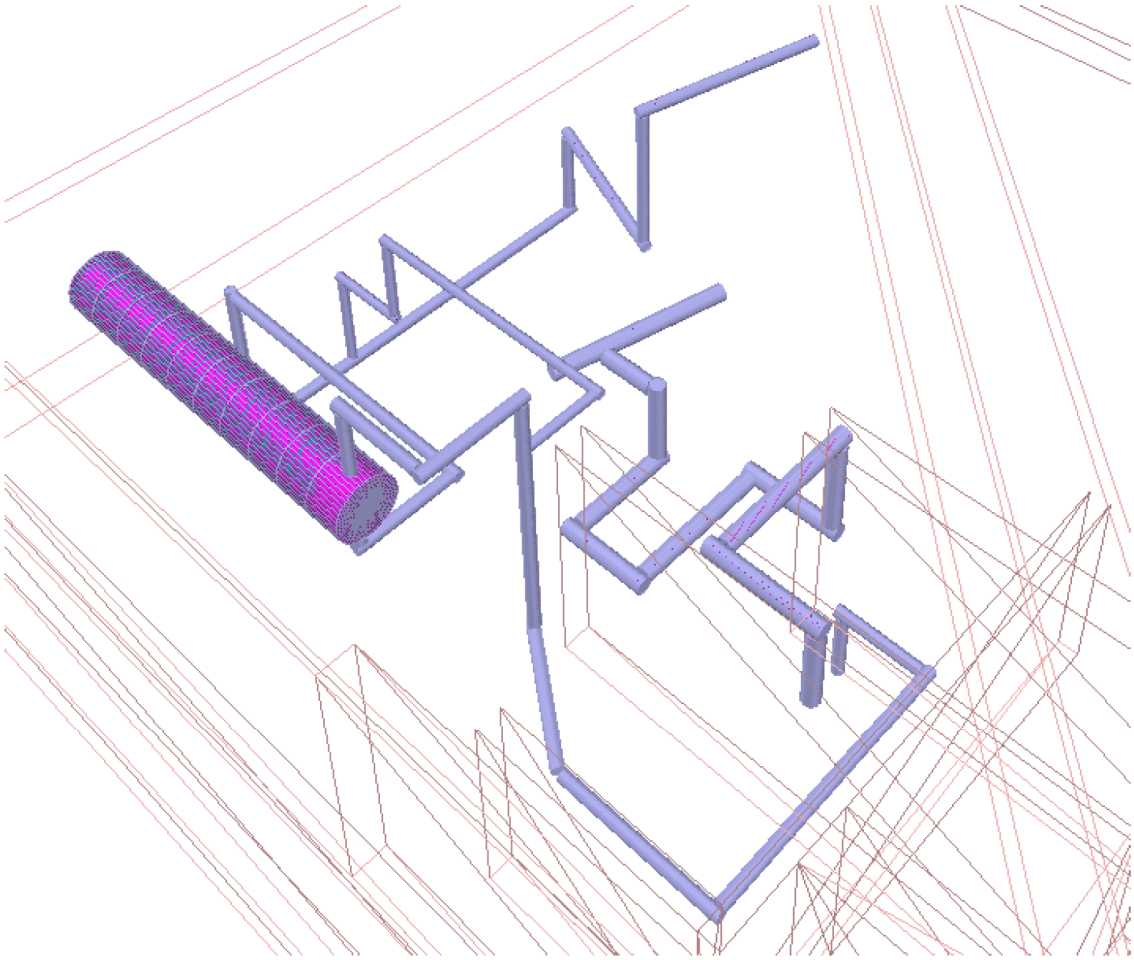


Figure 12.03-12.04-15-3—Residual Heat Removal System Source Model

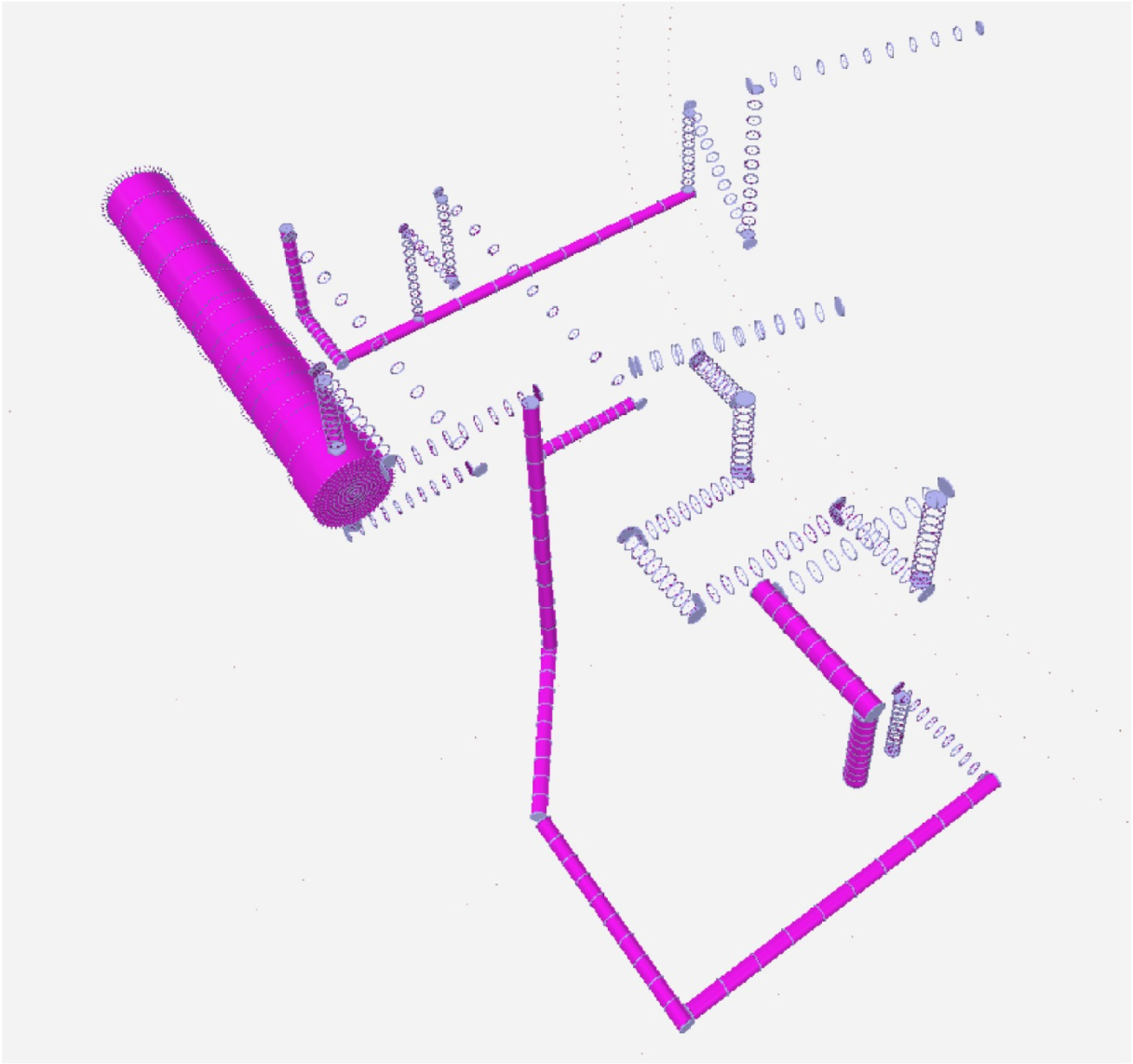
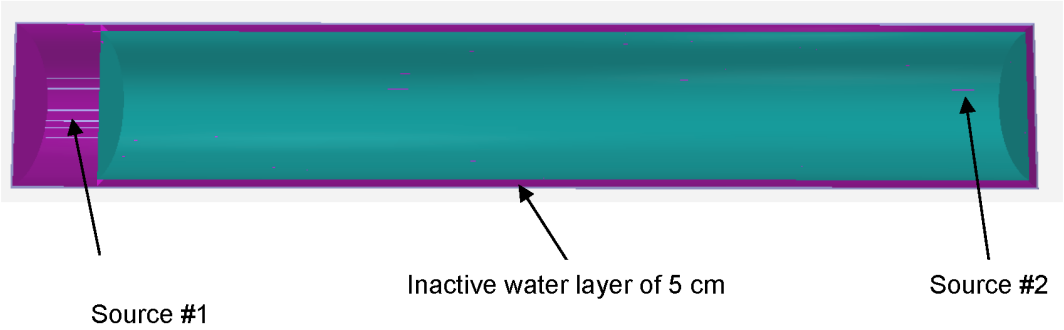
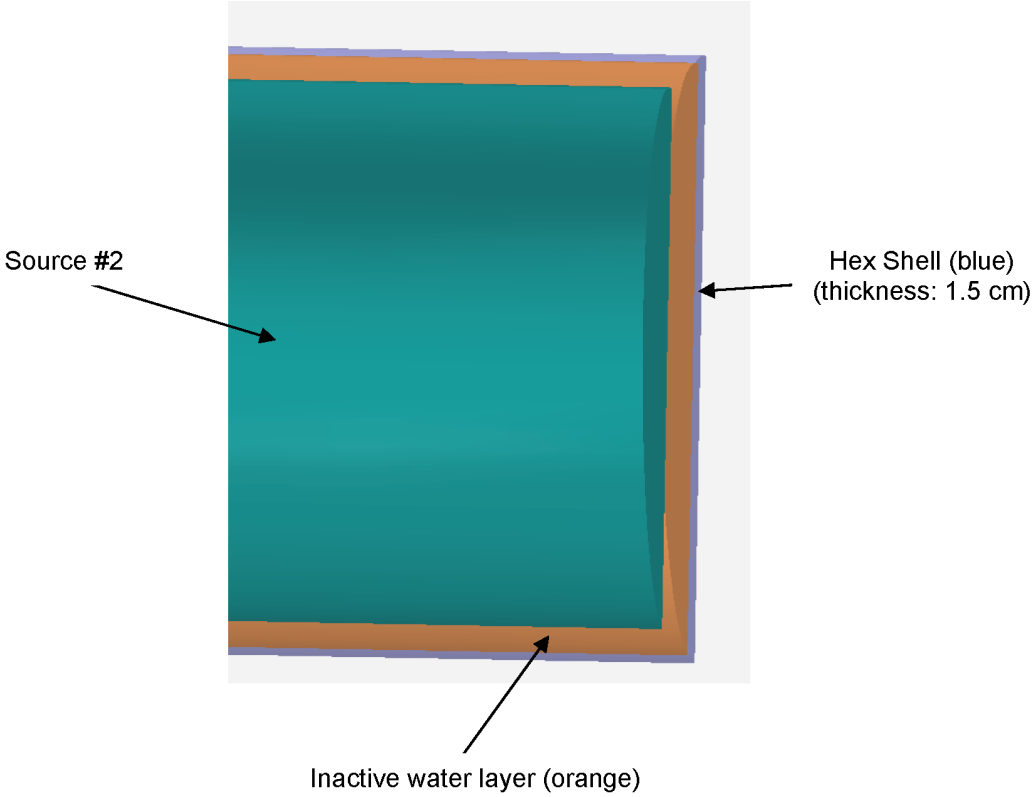


Figure 12.03-12.04-15-4—Residual Heat Removal System Heat Exchanger Shell





U.S. EPR Final Safety Analysis Report Markups

12.03-12.04-13

- The access area leading to the transfer pit compartment, which is a very high radiation area during that portion of the refueling evolution in which spent fuel is being moved between the Reactor Building and the Fuel Building.
- The annulus area, which is a very high radiation area during that portion of the refueling evolution in which spent fuel is being moved between the Reactor Building and the Fuel Building.

To control access during fuel transfers, access doors or gates are used to limit entry to the above areas. The design features include double locks, local and remote alarms, and video surveillance in compliance with 10 CFR 20.1602. These features also include crash-bars to permit the unimpeded exit of personnel in the affected areas.

The aeroball measurement room is inside the Reactor Building and controlled as a high-radiation area. The room has interlocks which prevent access while the system is in operation. The aeroball system normal operation does not require local operator action and is not considered a radiological vital area.

Radiation sources in the Reactor Building include the reactor vessel, RCS, CVCS, safety injection system, pressurizer relief tank, in-containment refueling water storage tank, refueling system, aeroball system, and the reactor drain system. Doors separate Reactor Building equipment and service compartments.

The following figures illustrate the Reactor Building and are based on the general arrangement drawings provided in Section 1.2:

- Figure 12.3-1—Spreading Area at the -20 Ft Elevation of the Reactor Building.
- Figure 12.3-2—Reactor Cavity at the +17 Ft Elevation of the Reactor Building.
- Figure 12.3-3—Core Internals Storage Area and Instrument Lance Storage Areas at the +17 Ft Elevation in the Reactor Building.
- Figure 12.3-4—Transfer Pit at the +17 Ft Elevation in the Reactor Building.
- Figure 12.3-7—Reactor Cavity Section.
- Figure 12.3-8—Containment Building Section Looking Plant-West at the Reactor Cavity, Core Internals Storage, Instrument Lance Storage, and Spreading Area.
- Figure 12.3-9—Containment Building Section Looking Plant-East at the Reactor Cavity, Core Internals Storage, Transfer Pit, and Spreading Area.

12.3.1.8.2 Fuel Building

The very high radiation areas in the Fuel Building during normal and refueling operations are:

- MCR, technical support center, and adjoining rooms.
- Safeguard Building access area outside the containment heat removal system pump rooms.
- Safeguard Building access area outside the residual heat removal system pump rooms.
- Post-LOCA sampling room in the Fuel Building.
- Post-LOCA ventilation air sampling room in the Fuel Building.
- Radiological analysis laboratory in the Nuclear Auxiliary Building.
- Diesel fuel oil delivery area.

12.03-12.04-12

- Missions considered are those to be carried out in the first 30 days postaccident.
- Figures 12.3-64 through 12.3-71 contain postaccident radiation zone maps that encompass the identified radiological vital areas. The radiation zones for Division 4 of the Safeguard Building are the same as those for Division 1 (symmetrical layout). These zones were determined in conformance with the source term assumptions of RG 1.183.
- For higher dose rate areas, actions such as flushing of pumps and lines and installation of local temporary shielding are used to reduce dose rate in area to 100 mrem/hr. Thus, a higher dose rate is used during preparatory work, and a lower dose rate is used after shielding installation and flushing operations are complete.
- The penetrations between the post-LOCA mechanical rooms and the access corriders are pressure tight and shielded.
- Occupancy values used for the MCR, technical support center, and adjoining rooms are in accordance with RG 1.183.

Additional mission specific assumptions are as follows:

- MCR, technical support center, and adjoining rooms. The two sources of radiation are airborne radioactivity (because of containment and ESF leakage resulting in both an immersion and inhalation dose) and direct radiation from the intake filters and from the recirculation filters located in the floor above the MCR. External shine from the Reactor Building and annulus structure is not a significant contributor to the dose rate because of the presence of substantial concrete shielding.
- Containment heat removal system or residual heat removal systems to clear blockage, back flushing of sump screens. The operator wears full protective clothing and respiratory protection, thus only direct dose is considered. Access begins no sooner than 20 hours post-LOCA.

Figure 12.3-4—Transfer Pit at the +17 Ft Elevation in the Reactor Building

12.03-12.04-13

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