ArevaEPRDCPEm Resource

From: WILLIFORD Dennis (AREVA) [Dennis.Williford@areva.com]
Sent: Wednesday, July 17, 2013 4:00 PM
To: Snyder, Amy
Cc: Gleaves, Bill; ANDERSON Katherine (EXTERNAL AREVA); DELANO Karen (AREVA); LEIGHLITER John (AREVA); ROMINE Judy (AREVA); RYAN Tom (AREVA); KOWALSKI David (AREVA); LENTZ Tony (EXTERNAL AREVA)
Subject: Response to U.S. EPR Design Certification Application RAI No. 584, Chapter 6, Supplement 1
Attachments: RAI 584 Supplement 1 Response US EPR DC.pdf

Amy,

AREVA NP Inc. provided a schedule for a technically correct and complete response to Question 06.02.03-9 in RAI No. 584 on June 7, 2013. The attached file, "RAI 584 Supplement 1 Response US EPR DC.pdf," provides a technically correct and complete final response to the subject question.

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 584 Question 06.02.03-9.

The following table indicates the respective pages in the response document, "RAI 584 Supplement 1 Response US EPR DC.pdf," that contain AREVA NP's response to the subject question.

Question #	Start Page	End Page
RAI 584 — 06.02.03-9	2	6

This concludes the formal AREVA NP response to RAI 584, and there are no questions from this RAI for which AREVA NP has not provided responses.

Sincerely,

Dennis Williford, P.E.
U.S. EPR Design Certification Licensing Manager
AREVA NP Inc.
7207 IBM Drive, Mail Code CLT 2B
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Cc: Amy.Snyder@nrc.gov; ANDERSON Katherine (External AREVA NP INC.); DELANO Karen (RS/NB); LEWIS Ray (External RS/NB); LEIGHLITER John (RS/NB); ROMINE Judy (RS/NB); SHEPHERD Tracey (RS/NB); VANCE Brian (RS/NB); GUCWA Len (External RS/NB); WILLIFORD Dennis (RS/NB); KOWALSKI David (RS/NB); Bill.Gleaves@nrc.gov; HONMA George (EXT)
Subject: U.S. EPR Design Certification Application RAI No. 584, Chapter 6

Mike,

Attached please find AREVA NP Inc.'s response to the subject request for additional information (RAI). The attached file, "RAI 584 Response US EPR DC," provides a schedule since a technically correct and complete response to Question 06.02.03-9 is not provided.

The following table indicates the respective pages in the response document, "RAI 584 Response US EPR DC.pdf," that contain AREVA NP's response to the subject question.

Question #	Start Page	End Page
RAI 584 — 06.02.03-9	2	4

The schedule for a technically correct and complete response to Question 06.02.03-9 is provided below.

Question #	Response Date
RAI 584 — 06.02.03-9	July 19, 2013

Sincerely,

David J. Kowalski (for)

Dennis Williford, P.E.
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From: Snyder, Amy [mailto:Amy.Snyder@nrc.gov]
Sent: Wednesday, May 08, 2013 11:19 AM
To: ZZ-DL-A-USEPR-DL
Cc: ODriscoll, James; McKirgan, John; Gleaves, Bill; Segala, John
Subject: U.S. EPR Design Certification Application FINAL RAI No. 584, Chapter 6

Attached please find the subject request for additional information (RAI). A draft RAI was provided to you on April 24, 2013. On May 7, 2013, you informed us that the draft RAI does not contain proprietary information and that the draft RAI is clear and no further clarification is needed. As result, the RAI was not changed..

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 or June 10, 2013**, 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.

Thank You,

Amy

Amy Snyder, U.S. EPR Design Certification Lead Project Manager

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From: WILLIFORD Dennis (AREVA)

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RAI 584 Supplement 1 Response US EPR DC.pdf	149986	

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Response to

Request for Additional Information No. 584, Supplement 1

5/8/2013
U.S. EPR Standard Design Certification
AREVA NP Inc.
Docket No. 52-020
SRP Section: 06.02.03 - Secondary Containment Functional Design
Application Section: 06.02.03-9
SCVB Branch

Question 06.02.03-9:

This RAI documents staff questions arising from the following RAI Question responses:

1) The revised final response to RAI 462, Question 06.02.03-8, (Supplement 6) received on February 22, 2013, and discussed with you in a public teleconference on 3/11/2013.

2) Your advanced response to RAI 511, Questions 06.04-9 and 06.04-10 received on February 14, 2013, and discussed with you in a public teleconferences on 3/19/13 and 4/8/13.

1. Regarding your advanced response to RAI 511, Question 06.04-9 received on February 14, 2013, RAI 511:

a. Clarify the mechanical design features of the SBVS shown in FSAR Tier 1 Revision 4, Section 2.6.6 (page 2.6-63 Item 3.2). The staff understands that operation of the SBVS dampers is required in both accident and normal operation condition to fulfill all listed system functions in Tier 1. Therefore, clarify how the Class 1 E dampers listed in Table 2.6.6.-2 will function to change position as listed in table 2.6.6-1 under both normal and accident conditions.

b. Clarify the FSAR to indicate if the leak-off system is included amongst those SSCs that serve a secondary containment function. Reference comments from the 3/11/13 NRC and AREVA public teleconference on RAI 462 (Supplement 2), Question 06.02.03-8:

i. It remains unclear what components this leak-off system now collects from. Some of the FSAR changes in the revised final RAI response relate to components that are inside the containment building (e.g. the RCDT-see section 5.2.5.5.1). Although the revised final response was meant to address FSAR changes need due to a changed valve design, the FSAR changes within it makes it unclear to the staff if the leak-off system collects and diverts to the annulus, leakage from systems inside containment. In your superseded response to this question (Supplement 4), you indicated that information provided in RAI 89 (supplement 1) Question 06.02.03-5, submitted October 2008 would be incorporated into the FSAR. In this response, you stated, “During design basis accidents all valves in the CLES are open. Leaks from the devices (e.g., valves, hatch seals) are collected and drained to the Annulus by the pressure differential created by the accident trains of the annulus ventilation system.” From this statement, the staff understands that the leak-off system is a passive design, with no isolation capability, and all lines are open in a DBA. This arrangement could be a concern for GDC 16 conformance if the leak-off collects from sources inside containment. In order to fully understand this system and complete its evaluation, the staff requires that the description of the leak-off system in the FSAR be revised comprehensively, to include a discussion on the general description of the leak-off system, and subsystems, the design basis, system design, design evaluation, inspection and testing requirements and instrument requirements. Include piping and instrumentation drawings on the leak-off system and subsystems, as necessary.

ii. Conforming changes may be needed to the markup of Tier 2 FSAR Section 6.2.6.5 to be consistent with the RAI response- i.e. that it does not collect from CIVs, if appropriate.

iii. Update or clarify FSAR Section 14.2.12.9.1, (Startup test #091), which states that the Leak-off system collects from personnel air locks and equipment hatch seals, to align with the revised response.

c. Based on your response to RAI 511, Question 06.04-9, and the accompanying Tier 1 markups, the staff has reviewed the Tier 2 Description of the response to a fuel handling accident in the Fuel Building and Reactor building as described in Tier 2, Section 9.4.3.2.3 (page 9.3-37). The system response as described in this section does not conform to the description of system response described elsewhere. Review and revise as necessary Tier 2, Section 9.4.3.2.3, and Tier 2 Section 9.4.7.2.3 to specify manual and automatic actions, and specify which iodine filtration trains are used to clean up the Fuel Building and Containment Building atmosphere as necessary to ensure all FSAR sections align.

d. Based on your response to RAI 511 Question 06.04-9, and the accompanying Tier 1 markups, the staff reviewed Tier 2 (revision 4) Section 9.4.5. The staff believes that on Page 9.4-50 (Revision 4), the "Operational Air Exhaust Mode" bulleted Item, should be revised to reflect two potential modes of SBVS exhaust during normal operation. It is the staff's understanding that exhaust air is directed to NABVS filters in the normal operating mode. This mode has two configurations, when no radiation is detected, the SBVS directs the NABVS to processes exhaust only through a HEPA filter. When radioactivity is detected in areas serviced by the SBVS, the SBVS directs the NABVS to process exhaust through a HEPA and an iodine filter. Revise this section of the FSAR as necessary.

e. Based on your response to RAI 511 Question 06.04-9, and the accompanying Tier 1 markups, the staff reviewed Tier 2 (revision 4) Section 9.4.5. On page 9.4-50 (Revision 4), the "Accident Air Exhaust Mode" bulleted Item should be revised to reflect two different modes of SBVS exhaust during accidents. It is the staff's understanding that the system exhaust is configured differently depending on the accident. For fuel handling accidents in the FB, the SBVS draws from the Fuel handling area (a.k.a. the “FB Pool Hall,” only, while the NABVS draws from the remaining area of the FB. For Fuel handling accidents in The RB, the SBVS draws from the Reactor building via the AVS exhaust system, while the FB is isolated, and is served by the NABVS. For accidents that involve containment isolation, the SBVS draws from the safeguard components areas of the Safeguard Buildings and the entire Fuel Building. Revise this section of the FSAR as necessary.

f. Clarify the revised surveillance requirements associated with the SBVS shown in your advanced response to RAI 511 Question 06.04.09 markup of Tier 2, Section 3.7.12-3. In addition to SR 3.7.12.10 for inspection of Building structural integrity, another new SR and Action (similar to SR and action in 3.6.7.4 and action [b] in TS 3.6.7 for the AVS) is required for verification of response of various isolation dampers on actual or simulated Containment Isolation signal. Also add a discussion of this new SR and action to the TS bases. Also provide the basis for the change from SR 3.7.12.8 to SR 3.7.12.9 in the markup provided in the advanced response.

g. Clarify the revised bases associated with the SBVS Technical Specification shown in your advanced response to RAI 511 Question 06.04.09 markup of Tier 2, Section B 3.7.12-3. The discussion of LCO requirements from Paragraph [b.] is not consistent with previous FSAR revisions which delete the mention of the “Prefilter” component in the TS bases.

h. Clarify the revised bases associated with the SBVS Technical Specification shown in your advanced response to RAI 511 Question 06.04.09 markup of Tier 2, section on Page B 3.7.12-3. In the discussion of LCO requirements, clarify whether the words “controlled areas” after “Safeguard Building” have been omitted in the last sentence at the end of the discussion.

i. Clarify the advanced response to RAI 511 Question 06.04.09, Part d. AREVA indicated that a revised final response to RAI 233, Supplement 2, Question 06.05.03-1 is forthcoming, however you do not indicate when it will be submitted to the NRC staff for review. Please provide information as to when the response is expected. The staff is tracking this RAI as "Closed/Resolved," and will re-evaluate the response when the revision is received. The previous responses were received: 7/10/09 (Parts a, b and c) ML091940538; remaining response (Part d) was received on 9/1/09 ML092440834. (Supplement 1).

2. Regarding your advanced response to RAI 511, Question 06.04-10 received on February 14, 2013:

The staff has reviewed your advanced response to Question 06.04-10 item b II. The staff believes that the revised bases associated with the CRACS Technical Specification discussed in your Advanced Response to RAI 511 Question 06.04-10, on Page B 3.7.10-2, of FSAR Revision 4, Chapter 16 TS bases, still needs to be revised. Although bracketed information represents content that individual applicants may use as-is or modify, the staff would not approve, without further information, the bracketed text if a COL applicant chose to use it as-is. Please clarify the bracketed text in the third paragraph on page B 3.7.10-2.

Response to Question 06.02.03-9:

Item 1:

a. As discussed during the Public Meeting held on April 4 and 5, 2013, involving AREVA and the NRC, outstanding issues related to ITAAC will be resolved as part of responding to RAI 469 and will also be presented in Revision 5 of the U.S. EPR FSAR.

   U.S. EPR FSAR Tier 1, Section 2.6.6 will not be changed at this time.

b. Refer to the final Response to Question 06.02.03-8 provided in RAI 462, Supplement 8, which revises and supersedes the response to this question that was provided in Supplement 6. This updated response reflects the implementation of two design changes that perform the following:

   – Remove the containment leakage exhaust subsystem (CLES) from the leak-off system (LOS).

   – Reduce potential bypass leakage on outer containment penetrations of the condensate and steam generator blowdown systems, and leak-off test subsystem.

   The final Response to Question 06.02.03-8 provided in RAI 462, Supplement 8, also includes the results of an evaluation of the following three basic leakage paths in the U.S. EPR design:

   – Electrical penetrations and seals that terminate within the secondary containment volume.

   – Mechanical penetrations and seals that terminate outside the secondary containment volume in areas that are filtered and exhausted to the vent stack, which is a monitored release path.

- Mechanical penetrations that terminate outside the secondary containment volume in areas that are not filtered or released via the vent stack.

c. Refer to the final Response to Question 06.04-9 provided in RAI 511, Supplement 8. This response and corresponding changes to U.S. EPR FSAR Tier 2, Section 9.4, provides additional clarification of fuel handling accidents in the Reactor Building and Fuel Building.

d. Refer to the final Response to Question 06.04-9 provided in RAI 511, Supplement 8, which provides additional clarification of the operational and accident air exhaust modes of the safeguard building controlled-area ventilation system (SBVS).

   The bulleted item “Operational Air Exhaust Mode” in U.S. EPR FSAR Tier 2, Section 9.4.5.2.1 will be revised to reflect the two potential filtration paths during normal plant operation.

e. Refer to the final Response to Question 06.04-9 provided in RAI 511, Supplement 8, which provides additional clarification of the operational and accident air exhaust modes of the safeguard building controlled-area ventilation system (SBVS).

   The bulleted item “Accident Air Exhaust Mode” in U.S. EPR FSAR Tier 2, Section 9.4.5.2.1 will be revised to include the function of the SBVS during a fuel handling accident in the Reactor Building.

f. The final Response to Question 06.04-9 provided in RAI 511, Supplement 8, contained a new U.S. EPR FSAR Tier 2, Chapter 16, Technical Specifications, Surveillance Requirement (SR) 3.7.12.10 and Bases, which requires a visual inspection of the exposed interior and exterior surfaces of the Safeguard Buildings and Fuel Building.

   Similar to the change made to U.S. EPR FSAR Tier 2, Chapter 16, Technical Specifications, Limiting Conditions for Operation (LCO) 3.7.12 in the response to Part 1.h of this question, U.S. EPR FSAR Tier 2, Chapter 16, Technical Specifications, SR 3.7.12.10 and Bases, will be revised to include the phrase “controlled areas.”

   U.S. EPR FSAR Tier 2, Chapter 16, Technical Specifications, SR 3.6.7.4 verifies that the normal operation train motor-operated isolation dampers in the annulus ventilation system (AVS) close on an actual or simulated isolation signal. Similar to SR 3.6.7.4, a new U.S. EPR FSAR Tier 2, Chapter 16, Technical Specifications, SR 3.7.12.6 and Bases will be added for the SBVS, which verifies that the fuel building motor operated isolation dampers close on an actual or simulated isolation signal. A new Condition B will be added to the LCO for failure to meet SR 3.7.12.6. In addition, SR 3.7.12.9 will be revised to include verification that the Fuel Building Ventilation System recirculation coolers that cool the Extra Borating System and Fuel Pool Cooling System pump rooms are capable of removing the design heat load assumed in the Fuel Building heat load calculation. Conforming changes will be made to U.S. EPR FSAR Tier 2, Chapter 16, Technical Specifications, LCO 3.7.12 and Bases.

   The basis for the change from SR 3.7.12.8 to SR 3.7.12.9 is that surveillance requirements are generally listed in sequential frequency order in the Technical Specifications.

g. The use of a “prefilter” component in the Bases of U.S. EPR FSAR Tier 2, Chapter 16, Technical Specifications, LCO 3.7.12, is consistent with its use in the Bases of U.S. EPR FSAR Tier 2, Chapter 16, Technical Specifications, LCO 3.7.10 and LCO 3.7.21.

   The Bases of U.S. EPR FSAR Tier 2, Chapter 16, Technical Specifications, LCO 3.7.12 will not be changed.

h. The last sentence in the Bases of U.S. EPR FSAR Tier 2, Chapter 16, Technical Specifications, LCO 3.7.12 will be revised to state:

   > “This individual will have a method to rapidly close the opening when a need for Safeguard Building controlled areas or Fuel Building isolation is indicated.”

i. Refer to the final Response to Question 06.05.03-1 provided in RAI 233, Supplement 7. This response considers both the Safeguard Buildings and Fuel Building as part of the secondary containment boundary, and contains corresponding changes to U.S. EPR FSAR Tier 2, Section 6.2.3.

Item 2:

Refer to the final Response to Question 06.04-10 provided in RAI 511, Supplement 7, which states that U.S. EPR FSAR Tier 2, Chapter 16, Bases 3.7.10 will be revised to clarify that complete control room isolation is performed in response to a high toxic gas signal, which is consistent with RG 1.78.

In the generic Technical Specifications, text in brackets represents content that individual applicants may use as-is, modify or delete. The references to toxic gas should remain in the U.S. EPR FSAR.

FSAR Impact:

U.S. EPR FSAR Tier 2, Chapter 16, will be revised as described in the response and indicated on the enclosed markup.

U.S. EPR Final Safety Analysis Report Markups

3.7 PLANT SYSTEMS

3.7.12 Safeguard Building Controlled Area Ventilation System (SBVS)

LCO 3.7.12 Two SBVS accident exhaust filtration trains shall be OPERABLE.

----------NOTE----------
The Safeguard Building controlled areas and Fuel Building boundaries may be opened intermittently under administrative control.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One SBVS accident exhaust filtration train inoperable.	A.1 Restore SBVS accident exhaust filtration train to OPERABLE status.	7 days
B. Two SBVS accident exhaust filtration trains inoperable due to inoperable Safeguard Building controlled areas or Fuel Building boundary.	B.1 Restore Safeguard Building controlled areas and Fuel Building boundaries to OPERABLE status.	24 hours
C. One or more normal Fuel Building isolation dampers inoperable.	C.1 Restore Fuel Building isolation damper to OPERABLE status.	24 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D~~C~~. Required Action and associated Completion Time of Condition A, ~~or~~ B, or C not met. OR	D~~C~~.1 Be in MODE 3. AND D~~C~~.2 Be in MODE 5.	6 hours 36 hours
Two SBVS accident exhaust filtration trains inoperable for reasons other than Condition B.		

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.12.1	Verify Safeguard Building controlled areas and Fuel Building pressure is ≤ -0.25 inches water gauge.	12 hours
SR 3.7.12.2	Verify each Safeguard Building controlled areas and Fuel Building access door is closed, except when the access opening is being used for entry and exit.	31 days
SR 3.7.12.3	Operate each SBVS accident exhaust filtration train for ≥ 15 minutes with the heaters energized.	31 days
SR 3.7.12.4	Perform required SBVS filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.7.12.5	Verify each SBVS accident exhaust filtration train actuates on an actual or simulated actuation signal.	24 months

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.7.12.6	Verify each Fuel Building isolation damper actuates on an actual or simulated actuation signal.	24 months
SR 3.7.12.7	Verify Safeguard Building controlled areas and Fuel Building pressure can be drawn down to ≤ -0.25 inches water gauge in ≤ 305 seconds after an actual or simulated actuation signal using one SBVS accident exhaust filtration train.	24 months on a STAGGERED TEST BASIS for each SBVS accident exhaust filtration train
SR 3.7.12.8	Verify Safeguard Building controlled areas and Fuel Building pressure can be maintained at ≤ -0.25 inches water gauge using one SBVS accident exhaust filtration train at a flow rate of ≤ 2640 cfm.	24 months on a STAGGERED TEST BASIS for each SBVS accident exhaust filtration train
SR 3.7.12.9	Verify each SBVS recirculation cooler and each Fuel Building Ventilation System recirculation cooler has the capability to remove the design heat load.	24 months
SR 3.7.12.10	Verify Safeguard Building controlled areas and Fuel Building structural integrity by performing a visual inspection of the exposed interior and exterior surfaces of the controlled areas of the Safeguard Buildings and Fuel Building.	During shutdown for SR 3.6.1.1 Type A tests

BASES

BACKGROUND (continued)

The prefilters and moisture separator remove any large particles in the air and any entrained water droplets present to prevent excessive loading of the HEPA filters and carbon adsorbers.

In case of a LOCA with assumed ECCS leakage, the accident air exhaust from the Safeguard Building controlled areas and Fuel Building is also directed through the accident iodine exhaust filtration trains prior to release through the vent stack.

The SBVS accident iodine filtration train is a standby system which may also be operated during normal plant operations. Upon receipt of an actuating signal, the normal air exhaust from the Safeguard Buildings and Fuel Building is isolated and the accident air is redirected through the iodine filtration train.

The SBVS is discussed in FSAR Section 9.4.5 (Ref. 3). The Fuel Building Ventilation System is discussed in FSAR Section 9.4.2 (Ref 4).

As discussed in Reference ~~8~~9, the Shield Building, portions of the Safeguard Buildings, and the Fuel Building are maintained at a negative pressure in order to process any post-accident containment leakage through filters in the Annulus Ventilation System (AVS) and the SBVS.

APPLICABLE SAFETY ANALYSES

The SBVS design basis is established by the consequences of the limiting postulated accident, which is a LOCA with assumed ECCS leakage. The analysis of a LOCA, given in Reference ~~4~~5, assumes ECCS leakage to the Safeguard Building controlled areas and Fuel Building is a conservative four gallons a minute. The SBVS consists of two 100% capacity iodine filtration trains in parallel configuration. There are only two iodine filtration trains since only slow failure modes are assumed and filtration efficiency is checked periodically. Both sets of iodine filtration trains are required to be OPERABLE. One SBVS train is then assumed to be lost due to a single failure. The postulated accident analysis assumes that two trains of the SBVS are OPERABLE. The accident analysis accounts for the reduction in airborne radioactive material provided by the one train of this filtration system. The amount of fission products available for release from the Safeguard Building controlled areas and Fuel Building is determined for a LOCA. These assumptions and the analysis follow the guidance provided in Regulatory Guide 1.25 (Ref. ~~5~~6).

The SBVS is not credited in the Fuel Handling Accident evaluation.

The SBVS satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii).

BASES

LCO

Two independent and redundant trains of SBVS Accident Exhaust Filtration are required to be OPERABLE to ensure that at least one train is available, assuming a single failure that disables the other train, coincident with a loss of offsite power.

The failure of both trains could result in the atmospheric release from the Safeguard Building controlled areas and Fuel Building exceeding the 10 CFR 50.34 (Ref. ~~6~~7) limits in the event of a LOCA.

The SBVS Accident Exhaust Filtration train is considered OPERABLE when it's associated:

a. Fan is OPERABLE;

b. Prefilter, HEPA filter, carbon adsorber, and post-filter are not excessively restricting flow, and are capable of performing their filtration function; and

c. Heater, ductwork, valves, and dampers are OPERABLE, and air circulation can be maintained.

The LCO is modified by a Note allowing the Safeguard Building controlled areas and Fuel Building boundaries to be opened intermittently under administrative controls. For entry and exit through doors the administrative control of the opening is performed by the person(s) entering or exiting the area. For other openings, these controls consist of stationing a dedicated individual at the opening who is in continuous communication with the control room. This individual will have a method to rapidly close the opening when a need for Safeguard Building controlled areas or Fuel Building isolation is indicated.

APPLICABILITY

In MODE 1, 2, 3, or 4, the SBVS Accident Exhaust Filtration train is required to be OPERABLE to provide fission product removal associated with the leakage inside the controlled areas of the Safeguard Buildings and Fuel Building.

In MODE 5 or 6, the SBVS Accident Exhaust Filtration train is not required to be OPERABLE since the ECCS is not required to be OPERABLE.

BASES

ACTIONS (continued)

C.1

If one or more Fuel Building motor operated isolation dampers is inoperable, the Fuel Building ventilation negative pressure could not be established or maintained in the event of an accident. Therefore damper OPERABILITY must be restored in 24 hours. Twenty-four hours is a reasonable Completion Time considering the limited leakage design of the containment and the low probability of a Design Basis Accident occurring during this time period.

D~~C~~.1 and D~~C~~.2

In MODE 1, 2, 3, or 4, when Required Action A.1, ~~or~~ B.1, or C.1 cannot be completed within the associated Completion Time, or when both SBVS Accident Exhaust Filtration trains are inoperable for reasons other than an inoperable Safeguard Building controlled areas or Fuel Building boundary (i.e., Condition B), the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in MODE 3 within 6 hours and in MODE 5 within 36 hours. The Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging plant systems.

SURVEILLANCE REQUIREMENTS

SR 3.7.12.1

Verifying that Safeguard Building controlled areas and Fuel Building negative pressure is within limit ensures that operation remains within the limit assumed in the containment analysis. The 12 hour Frequency of this SR was developed considering operating experience related to Safeguards Building and Fuel Building pressure variations and pressure instrument drift during the applicable MODES.

SR 3.7.12.2

Maintaining Safeguard Building controlled areas and Fuel Building OPERABILITY requires verifying each access opening door is closed. However, all Safeguard Building controlled areas and Fuel Building access doors are normally kept closed, except when the access opening is being used for entry and exit or when maintenance is being performed on an access opening. The 31 day Frequency of this SR is based on engineering judgment and is considered adequate in view of the other indications of door status that are available to the operator.

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.7.12.3

Standby systems should be checked periodically to ensure that they function properly. As the environmental and normal operating conditions on this system are not severe, testing each train once every month provides an adequate check on this system. Monthly heater operation dries out any moisture accumulated in the carbon from humidity in the ambient air. Systems with heaters must be operated for ≥ 15 minutes with the heaters energized. The 31 day Frequency is based on the known reliability of the equipment and the two train redundancy available. The heater energization time and 31 day Frequency are consistent with Reference ~~7~~8.

SR 3.7.12.4

This SR verifies that the required SBVS testing is performed in accordance with the Ventilation Filter Testing Program (VFTP). The VFTP includes testing HEPA filter performance, carbon adsorber efficiency, minimum system flow rate, and the physical properties of the activated carbon (general use and following specific operations). Specific test frequencies and additional information are discussed in detail in the VFTP.

SR 3.7.12.5

This SR verifies that each SBVS train starts and operates on an actual or simulated actuation signal. The 24 month Frequency is consistent with Reference ~~7~~8.

SR 3.7.12.6

This SR verifies that the Fuel Building motor operated isolation dampers close on an actual or simulated isolation signal. The 24 month Frequency is based on the need to perform this Surveillance in conjunction with SR 3.7.12.5.

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.7.12.9

This SR verifies that the SBVS recirculation coolers that cool the hot mechanical areas are capable of removing the design heat load assumed in the Safeguards Building heat load calculation. This SR also verifies that the Fuel Building Ventilation System recirculation coolers that cool the Extra Borating System and Fuel Pool Cooling System pump rooms are capable of removing the design heat load assumed in the Fuel Building heat load calculation. This SR consists of a combination of testing and calculations. The 24-month Frequency is appropriate since significant degradation of the SBVS is slow and is not expected over this time period.

SR 3.7.12.10

This SR would give advance indication of gross deterioration of the concrete structural integrity of the controlled areas of the Safeguard Buildings and Fuel Building. The Frequency of this SR is the same as that of SR 3.6.1.1. The verification is done during shutdown.

REFERENCES

1. FSAR Section 9.4.6.
2. FSAR Section 9.4.3.
3. FSAR Section 9.4.5.
4. FSAR Section 9.4.2.
5~~4~~. FSAR Chapter 15.
6~~5~~. Regulatory Guide 1.25, March 1972.
7~~6~~. 10 CFR 50.34.
8~~7~~. Regulatory Guide 1.52, Rev. 3, June 2001.
9~~8~~. FSAR Section 6.2.6.5.