

## ArevaEPRDCPEm Resource

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**From:** WELLS Russell D (AREVA NP INC) [Russell.Wells@areva.com]  
**Sent:** Friday, June 19, 2009 2:29 PM  
**To:** Tesfaye, Getachew  
**Cc:** Pederson Ronda M (AREVA NP INC); BENNETT Kathy A (OFR) (AREVA NP INC); DELANO Karen V (AREVA NP INC)  
**Subject:** Response to U.S. EPR Design Certification Application RAI No. 229, FSAR Ch 14  
**Attachments:** RAI 229 Response US EPR DC.pdf

Getachew,

Attached please find AREVA NP Inc.'s response to the subject request for additional information (RAI). The attached file, "RAI 229 Response US EPR DC.pdf," provides a technically correct and complete response to the 1 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 229 Question 14.02-96.

The following table indicates the respective pages in the response document, "RAI 229 Response US EPR DC.pdf," that contain AREVA NP's response to the subject question.

Question #	Start Page	End Page
RAI 229 — 14.02-96	2	2

This concludes the formal AREVA NP response to RAI 229, 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](mailto:ronda.pederson@areva.com)

Licensing Manager, U.S. EPR Design Certification

New Plants Deployment

**AREVA NP, Inc.**

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**From:** Tesfaye, Getachew [mailto:Getachew.Tesfaye@nrc.gov]  
**Sent:** Friday, June 12, 2009 7:29 AM  
**To:** ZZ-DL-A-USEPR-DL  
**Cc:** Tomon, John; Crane, Samantha; Peralta, Juan; Miernicki, Michael; Jennings, Jason; Colaccino, Joseph; ArevaEPRDCPEm Resource  
**Subject:** U.S. EPR Design Certification Application RAI No. 229 (2802), FSARCh. 14

Attached please find the subject requests for additional information (RAI). A draft of the RAI was provided to you on May 15, 2009, and discussed with your staff on June 10, 2009. No change was made to the draft RAI as a result of that discussion. 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:** 598

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FSAR Ch 14  
**Sent Date:** 6/19/2009 2:28:54 PM  
**Received Date:** 6/19/2009 2:28:57 PM  
**From:** WELLS Russell D (AREVA NP INC)

**Created By:** Russell.Wells@areva.com

**Recipients:**

"Pederson Ronda M (AREVA NP INC)" <Ronda.Pederson@areva.com>

Tracking Status: None

"BENNETT Kathy A (OFR) (AREVA NP INC)" <Kathy.Bennett@areva.com>

Tracking Status: None

"DELANO Karen V (AREVA NP INC)" <Karen.Delano@areva.com>

Tracking Status: None

"Tesfaye, Getachew" <Getachew.Tesfaye@nrc.gov>

Tracking Status: None

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MESSAGE	2327	6/19/2009 2:28:57 PM
RAI 229 Response US EPR DC.pdf		98436

**Options**

**Priority:** Standard

**Return Notification:** No

**Reply Requested:** No

**Sensitivity:** Normal

**Expiration Date:**

**Recipients Received:**

**Response to**

**Request for Additional Information No. 229 (2802), Revision 0**

**06/12/2009**

**U. S. EPR Standard Design Certification**

**AREVA NP Inc.**

**Docket No. 52-020**

**SRP Section: 14.02 - Initial Plant Test Program - Design Certification and New  
License Applicants**

**Application Section: FSAR Section 14.02**

**QUESTIONS for Quality and Vendor Branch 1 (AP1000/EPR Projects) (CQVP)**

**Question 14.02-96:**

In RAI question 14.02-87 the NRC staff requested that AREVA revise test abstract #178 to address all of the applicable regulatory positions in RG 1.68.3 "Preoperational Testing of Instrument and Control Air Systems". In its response to this question the applicant stated that "the U.S. EPR design does not rely on instrument air to provide motive power to safety-related components, and portions of Regulatory Guide (RG) 1.68.3 are not applicable to the U.S. EPR design," and revised Section 14.2.12.13.18, "Pre-Core Loss of Instrument Air (Test #178)" to address the applicable regulatory positions in RG 1.68.3. Regulatory Position 1, in RG 1.68, "Criteria for Selection of Plant Features to Be Tested," provides guidance for the selection of systems to be included within the initial test program. The NRC staff requests that the applicant explain and justify why the Control Air System (CAS) does not meet any of the 6 criteria in Regulatory Position 1 of RG 1.68, or change test abstract #178 in accordance with RG 1.68.3.

**Response to Question 14.02-96:**

U.S. EPR FSAR Tier 2, Section 14.2, Test #178 will be revised for clarification:

- The note at the beginning of the test, "Note that the U.S. EPR instrument air system is not safety-related and is not credited in the accident analyses," will be deleted.
- Step 2.5 will be revised to clarify that Test #178 by itself satisfies RG 1.68.3, regulatory positions C.1 through C.11 by deleting the phrase "the CAS test, in conjunction with."
- In Step 2.5, "RG C.1-C.11" will be revised to "regulatory positions C.1-C.11" to match the headings in RG 1.68.3.

**FSAR Impact:**

U.S. EPR FSAR Tier 2 Section 14.2, Test #178 will be revised as described in the response and indicated on the enclosed markup.

# U.S. EPR Final Safety Analysis Report Markups

5.0 ACCEPTANCE CRITERIA

5.1 The RBWMS perform as designed (refer to Section 9.3.4).

**14.2.12.13.17 Pre-Core Safety Injection Initiated at HZP (Test #177)**

1.0 OBJECTIVE

1.1 To demonstrate the ability of the SI system to inject into a pressurized RCS.

2.0 PREREQUISITES

2.1 The RCS is at HZP (pressure and temperature) conditions.

2.2 The normal RCP trip function on SI injection has been disabled. With no decay heat, the RCS could cool uncontrollably.

3.0 TEST METHOD

3.1 Initiate an SI signal.

4.0 DATA REQUIRED

4.1 The following time dependent data shall be collected at a frequent scan rate:

4.1.1 RCS parameters (temperature and pressure).

4.1.2 SI parameters (e.g., flow, pump discharge pressure, fluid temperature).

4.2 Pressurizer parameters (e.g., pressure, level).

4.3 VCT pressure and level.

4.4 Letdown flow rate.

5.0 ACCEPTANCE CRITERIA

5.1 The safety injection system meets design requirements (refer to Section 6.3).

**14.2.12.13.18 Pre-Core Loss of Instrument Air (Test #178)**

14.02-96 → Note that the U.S. EPR instrument air system is not safety-related and is not credited in the accident analyses.

1.0 OBJECTIVES

1.1 To demonstrate that a reduction and loss of instrument air pressure causes no adverse operation of active safety-related equipment.

2.0 PREREQUISITES

- 2.1 Construction activities on items to be tested have been completed.
- 2.2 Individual valves and equipment are functional.
- 2.3 The instrument air system is in service at rated pressure with support systems functional to the extent necessary to conduct the test. Pneumatic loads are cut-in to the extent possible at the time test begins.
- 2.4 A listing of the air-operated active safety-related equipment important to safety which includes the loss of air failed position and the fail safe position of each component has been compiled.

14.02-96 →

- 2.5 ~~The CAS test, in conjunction with t~~This test satisfies the requirements of RG 1.68.3, ~~RG~~regulatory positions C.1-C.11.
- 2.6 Loss-of-air supply tests shall be conducted on branches of the instrument air system simultaneously, if practicable, or on the largest number of branches of the system that can be adequately managed.

3.0 TEST METHOD

- 3.1 Place the valves in the normal operating position, and maintain plant in as close to normal conditions as it practicable and verify proper operation of the following components:
  - 3.1.1 Compressors.
  - 3.1.2 Aftercoolers
  - 3.1.3 .
  - 3.1.4 Oil separator units, if applicable
  - 3.1.5 .
  - 3.1.6 Air receivers
  - 3.1.7 .
  - 3.1.8 Dryers
  - 3.1.9 including a full regeneration cycle, if applicable.
  - 3.1.10 Pressure controls and compressor unloaders
  - 3.1.11 .
  - 3.1.12 Pressure reducing stations.
  - 3.1.13 Automatic and manual start / stop circuits of standby compressors
  - 3.1.14 .
  - 3.1.15 Controls to change operating sequence of units (spread operating time and starting duty).
  - 3.1.16 High and low pressure alarms.
  - 3.1.17 Pressure indicators
  - 3.1.18 .