ArevaEPRDCPEm Resource

From: WILLIFORD Dennis (AREVA) [Dennis.Williford@areva.com]
Sent: Friday, March 08, 2013 10:37 AM
To: Snyder, Amy
Cc: Miernicki, Michael; DELANO Karen (AREVA); LEIGHLITER John (AREVA); ROMINE Judy (AREVA); RYAN Tom (AREVA); WILLS Tiffany (AREVA); WELLS Russell (AREVA)
Subject: Response to U.S. EPR Design Certification Application RAI No. 549 (6524), FSAR Ch. 13 - NEW PHASE 4 RAI - Fukushima, Supplement 2 - DCR-Related
Attachments: RAI 549 Supplement 2 Response US EPR DC.PDF

Amy,

AREVA NP Inc. (AREVA NP) provided a schedule for a technically correct and complete response to RAI 549 on June 25, 2012. AREVA NP submitted the final response to Question 13.03-8 in Supplement 1 on September 14, 2012. The attached file, "RAI 549 Supplement 2 Response - US EPR DC.pdf" provides a revised final response to Question 13.03-8. This revision reflects changes to U.S. EPR FSAR Tier 2, Section 9.5.2 to power the emergency notification system components from EUPS power, and allows the potential to power other subsystems and components from other diesel backed sources, as applicable.

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 549 Question 13.03-8.

The following table indicates the respective pages in the response document, "RAI 549 Supplement 2 Response US EPR DC.pdf," that contain AREVA NP's response to the subject question.

Question #	Start Page	End Page
RAI 549 — 13.03-8	2	6

This concludes the formal AREVA NP response to RAI 549, 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
Charlotte, NC 28262
Phone: 704-805-2223
Email: Dennis.Williford@areva.com

From: RYAN Tom (RS/NB)
Sent: Friday, September 14, 2012 2:38 PM
To: Tesfaye, Getachew
Cc: BENNETT Kathy (RS/NB); DELANO Karen (RS/NB); LEIGHLITER John (RS/NB); ROMINE Judy (RS/NB); RYAN Tom (RS/NB); WELLS Russell (RS/NB); WILLIFORD Dennis (RS/NB)
Subject: Response to U.S. EPR Design Certification Application RAI No. 549 (6524), FSAR Ch. 13 - NEW PHASE 4 RAI - Fukushima, Supplement 1

Getachew,

AREVA NP Inc. (AREVA NP) provided a schedule for a technically correct and complete response to RAI 549 on June 25, 2012. The attached file, "RAI 549 Supplement 1 Response - US EPR DC.pdf" provides technically correct and complete FINAL responses to the one question, as committed.

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 549 Question 13.03-8.

The following table indicates the respective pages in the response document, "RAI 549 Response US EPR DC.pdf," that contain AREVA NP's response to the subject question.

Question #	Start Page	End Page
RAI 549 — 13.03-8	2	5

This concludes the formal AREVA NP response to RAI 549, and there are no questions from this RAI for which AREVA NP has not provided responses.

Sincerely,

Tom Ryan for
Dennis Williford, P.E.
U.S. EPR Design Certification Licensing Manager
AREVA NP Inc.
7207 IBM Drive, Mail Code CLT 2B
Charlotte, NC 28262
Phone: 704-805-2223
Email: Dennis.Williford@areva.com

From: WILLIFORD Dennis (RS/NB)
Sent: Monday, June 25, 2012 11:58 AM
To: Tesfaye, Getachew
Cc: BENNETT Kathy (RS/NB); DELANO Karen (RS/NB); ROMINE Judy (RS/NB); RYAN Tom (RS/NB); WELLS Russell (RS/NB)
Subject: Response to U.S. EPR Design Certification Application RAI No. 549 (6524), FSAR Ch. 13 - NEW PHASE 4 RAI - Fukushima

Getachew,

Attached please find AREVA NP Inc.'s response to the subject request for additional information (RAI). The attached file, "RAI 549 Response US EPR DC.pdf," provides a schedule since a technically correct and complete response to the single question cannot be provided at this time.

The following table indicates the respective pages in the response document, "RAI 549 Response US EPR DC.pdf," that contain AREVA NP's response to the subject question.

Question #	Start Page	End Page
RAI 549 — 13.03-8	2	2

The schedule for a technically correct and complete response to this question is provided below.

Question #	Response Date
RAI 549 — 13.03-8	**September 22, 2012**

Sincerely,

Dennis Williford, P.E.
U.S. EPR Design Certification Licensing Manager
AREVA NP Inc.
7207 IBM Drive, Mail Code CLT 2B
Charlotte, NC 28262
Phone: 704-805-2223
Email: Dennis.Williford@areva.com

From: Tesfaye, Getachew [mailto:Getachew.Tesfaye@nrc.gov]
Sent: Friday, May 25, 2012 7:19 AM
To: ZZ-DL-A-USEPR-DL
Cc: Robinson, Edward; Williams, Kevin; Miernicki, Michael; Segala, John; ArevaEPRDCPEm Resource
Subject: U.S. EPR Design Certification Application RAI No. 549 (6524), FSAR Ch. 13 - NEW PHASE 4 RAI - Fukushima

Attached please find the subject request for additional information (RAI). A draft of the RAI was provided to you on May 18, 2012, and on May 24, 2012, 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. 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/LB1
(301) 415-3361

Hearing Identifier: AREVA_EPR_DC_RAIs
Email Number: 4275

Mail Envelope Properties (554210743EFE354B8D5741BEB695E6560EE004)

Subject: Response to U.S. EPR Design Certification Application RAI No. 549 (6524), FSAR Ch. 13 - NEW PHASE 4 RAI - Fukushima, Supplement 2 - DCR-Related
Sent Date: 3/8/2013 10:37:25 AM
Received Date: 3/8/2013 10:38:07 AM
From: WILLIFORD Dennis (AREVA)

Created By: Dennis.Williford@areva.com

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Tracking Status: None
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Files	**Size**	**Date & Time**
MESSAGE	5802	3/8/2013 10:38:07 AM
RAI 549 Supplement 2 Response US EPR DC.PDF		1151400

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

Response to

Request for Additional Information No. 549, Supplement 2

5/25/2012

U. S. EPR Standard Design Certification
AREVA NP Inc.
Docket No. 52-020
SRP Section: 13.03 - Emergency Planning
Application Section: Chapter 13.3 Emergency Planning

QUESTIONS for Licensing and Inspection Branch (NSIR/DPR/LIB) (EP)

Question 13.03-8:

Open Item

New Phase 4 RAI - Fukushima

Implementation of Fukushima Task Force Recommendation 9.3

Regulatory Basis: NUREG-0800, 10 CFR 50.47 (b)(2), 10 CFR 50.47 (b)(6)

The NRC staff requests that you address provisions for enhancing emergency preparedness as it relates to staffing and communications associated with Recommendation 9.3 outlined in Enclosure 5 of the March 12, 2012 letter "Request for information pursuant to Title 10 of the *Code of Federal Regulations* 50.54(f) regarding Recommendations 2.1, 2.3, and 9.3, of the near-term task force review of insights from the Fukushima Dai-ichi accident." (ML12053A340).

Response to Question 13.03-8:

This response to RAI 549, Question 13.03-8, supersedes in its entirety the response provided to RAI 549, Question 13.03-8, in Supplement 1.

The following includes each of the recommendations in Recommendation 9.3, “Emergency Preparedness,” from the NRC letter of March 12, 2012, along with the response provided by AREVA NP:

<u>Communications</u>

1. Addressees are requested to provide an assessment of the current communications systems and equipment used during an emergency event to identify any enhancements that may be needed to ensure communications are maintained during a large scale natural event meeting the conditions described above. The assessment should:

    a. Identify any planned or potential improvements to existing onsite communications systems and their required normal and/or backup power supplies,

    b. Identify any planned or potential improvements to existing offsite communications systems and their required normal and/or backup power supplies,

    c. Provide a description of any new communications system(s) or technologies that will be deployed based upon the assumed conditions described above, and

    d. Provide a description of how the new and/or improved systems and power supplies will be able to provide for communications during a loss of all ac power,

2. Addressees are requested to describe any interim actions that have been taken or are planned to be taken to enhance existing communications systems power supplies until the communications assessment and the resulting actions are complete.

3. Provide an implementation schedule of the time needed to conduct and implement the results of the communications assessment.

Staffing

1. It is requested that addressees provide an assessment of the onsite and augmented staff needed to respond to a large scale natural event meeting the conditions described above. This assessment should include a discussion of the onsite and augmented staff available to implement the strategies as discussed in the emergency plan and/or described in plant operating procedures. The following functions are requested to be assessed:
   - How onsite staff will move back-up equipment (e.g., pumps, generators) from alternate onsite storage facilities to repair locations at each reactor as described in the Order regarding the NTIF Recommendation 4.2. It is requested that consideration be given to the major functional areas of NUREG-0654, Table 8-1, such as plant operations and assessment of operational aspects, emergency direction and control, notification/communication, radiological accident assessment, and support of operational accident assessment, as appropriate.
   - New staff or functions identified as a result of the assessment.
   - Collateral duties (personnel not being prevented from timely performance of their assigned functions).
2. Provide an implementation schedule of the time needed to conduct the onsite and augmented staffing assessment. If any modifications are determined to be appropriate, please include in the schedule the time to implement the changes.
3. Identify how the augmented staff would be notified given degraded communications capabilities.
4. Identify the methods of access (e.g., roadways, navigable bodies of water and dockage, airlift, etc.) to the site that are expected to be available after a widespread large scale natural event.
5. Identify any interim actions that have been taken or are planned prior to the completion of the staffing assessment.
6. Identify changes that have been made or will be made to your emergency plan regarding the on-shift or augmented staffing changes necessary to respond to a loss of all ac power, multiunit event, including any new or revised agreements with offsite resource providers (e.g., staffing, equipment, transportation, etc.).

AREVA NP Response

Communications

The Communication System for the U.S. EPR FSAR is described in U.S. EPR FSAR Tier 2, Section 9.5.2, which states:

> "The communication system (COMS) provides reliable and effective communications inside buildings (intra-plant), between buildings (inter-plant), and with external locations (plant-to-offsite) during normal operation, maintenance, transient, fire, accident conditions including loss of offsite power (LOOP) and security-related events."

Responses to each of the communication recommendations from Recommendation 9.3 are provided as follows:

1a. As noted in U.S. EPR FSAR Tier 2, Section 9.5.2, the COMS consists of the following subsystems:

- Portable wireless communication system.
- Digital telephone system.
- Public address (PA) and alarm system.
- Sound-powered system.
- Emergency offsite communication (see Response to Item 1b).
- Security communication.

Each communication subsystem provides an independent mode of communications. A failure of one subsystem does not affect the capability to communicate via the other subsystem. These diverse communications systems are independent of each other to provide effective communications, including usage in areas exposed to high ambient noise in the plant.

U.S. EPR FSAR Tier 2, Section 9.5.2 will be revised to indicate that electrical power from a Class 1E standby power source is provided for the portable wireless communication system base station, emergency offsite communication capability, and plant security communications. An isolation device is placed between non-Class 1E COMS components and the Class 1E power supply to provide the required independence per IEEE Std 384-1992. The backup power supplies for other communication subsystems (with the exception of the sound powered phone system) and components are either from integral DC power units or other plant backup power supplies based on their operational significance and location. Isolation of the non-safety-related alternating current (AC) sources to the EUPS is also provided as described in U.S. EPR FSAR Tier 2, Section 8.3.1.1.9.

Given the diversity and independence of the on-site COMS, there are no planned or potential improvements to the existing onsite communications systems. Any modifications to the normal and/or backup power supplies needed to accommodate an extended loss of all AC power will be addressed as a part of the response to NTTF recommendation 4.2 (Reference 1).

U.S. EPR FSAR Tier 2, Section 9.5.2.1.3 states that details of emergency response facilities and associated communication capabilities are provided by the COL applicant, as addressed in Sections 9.5.2.1.1 and 13.3. Therefore, as noted in the Staffing Recommendation, which follows, a new COL item will be added to U.S. EPR FSAR Tier 2, Section 13.3 to address the Requested Information in Fukushima Recommendation 9.3 regarding Emergency Preparedness Communications and Staffing as outlined in Enclosure 5 of the request for additional information pursuant to the 10 CFR 50.54(f) letter dated March 12, 2012 (ML12053A340).

1b. As noted in U.S. EPR FSAR Tier 2, Section 9.5.2.1.1 and U.S. EPR FSAR Tier 2, Table 1.8-2 (COL Information Item 9.5-21), the COL applicant is responsible for providing a description of the offsite communication system that interfaces with the onsite communication system, including type of connectivity, radio frequency, normal and backup power supplies, and plant security system interface.

U.S. EPR FSAR Tier 2, Section 9.5.2.1.3 states that details of emergency response facilities and associated communication capabilities are provided by the COL applicant as addressed in Sections 9.5.2.1.1 and 13.3. Therefore, as noted in the Staffing Recommendation, which follows, a new COL item will be added to U.S. EPR FSAR Tier 2, Section 13.3 to address the Requested Information in Fukushima Recommendation 9.3 regarding Emergency Preparedness Communications and Staffing as outlined in Enclosure 5 of the request for additional information pursuant to the 10 CFR 50.54(f) letter dated March 12, 2012 (ML12053A340).

1c. Based on the responses to Items 1a and 1b, there are no new communications system(s) or technologies within the scope of the U.S. EPR FSAR that will be deployed.

1d. See the responses to Items 1a and 1b.

2. Based on the responses to Items 1a and 1b, there are no interim actions required to be taken to enhance existing communications systems power supplies within the scope of the U.S. EPR FSAR.

3. Based on the responses to Items 1a and 1b, there are no further communications assessments needed for the U.S. EPR FSAR.

Staffing

As noted in U.S. EPR FSAR Tier 2, Section 13.3 and U.S. EPR FSAR Tier 2, Table 1.8-2 (COL Information Item 13.3-1), emergency planning is the responsibility of the COL applicant, with the exception of the non-site specific emergency response facility characteristics and specified permanent communications equipment contained in the U.S. EPR FSAR, Tier 2 Sections 13.3 and 9.5.2.2.1. Therefore, Staffing Recommendations 1 through 6 are the responsibility of the COL applicant.

A COL item will be added to U.S. EPR FSAR Tier 2, Section 13.3 and U.S. EPR FSAR Tier 2, Table 1.8-2 to require the COL applicant to address the Requested Information in Fukushima Recommendation 9.3 regarding Emergency Preparedness Communications and Staffing as outlined in Enclosure 5 of the request for additional information pursuant to the 10 CFR 50.54(f) letter dated March 12, 2012 (ML12053A340).

References:

1. NRC letter dated April 25, 2012, “Implementation of Fukushima Near-Term Task Force Recommendations,” Getachew Tesfaye (NRC) to Pedro Salas (AREVA NP).

FSAR Impact:

U.S. EPR FSAR Tier 2, Section 9.5.2, Section 13.3, and Table 1.8-2 will be revised as described in the response and indicated on the enclosed markup.

U.S. EPR Final Safety Analysis Report Markups

Table 1.8-2—U.S. EPR Combined License Information Items
Sheet 35 of 41

Item No.	Description	Section
13.3-2	A COL applicant that references the U.S. EPR design certification will address the Requested Information in Fukushima Recommendation 9.3 regarding Emergency Preparedness Communications and Staffing as outlined in Enclosure 5 of the request for additional information pursuant to the 10 CFR 50.54(f) letter dated March 12, 2012 (ML12053A340).	13.3
13.4-1	A COL applicant that references the U.S. EPR design certification will provide site-specific information for operational programs and schedule for implementation.	13.4
13.5-1	A COL applicant that references the U.S. EPR design certification will provide site-specific information for administrative, operating, emergency, maintenance, and other operating procedures.	13.5
13.6-1	A COL applicant that references the U.S. EPR design certification will provide a site-specific security assessment that adequately demonstrates how the performance requirements of 10 CFR 73.55(a) are met for the initial implementation of the security program.	13.6
13.6-2	A COL applicant that references the U.S. EPR design certification will provide a security plan to the NRC to fulfill the requirements of 10 CFR 52.79(a)(35).	13.6
13.6-3	A COL applicant that references the U.S. EPR design certification will provide a security program, through the PSP and supporting documents such as the vital equipment list and the vital areas list, that incorporates the security features listed in the U.S. EPR FSAR Tier 2, Section 13.6	13.6
13.6-4	A COL applicant that references the U.S. EPR design certification will provide a cyber security plan consistent with 10 CFR 73.54.	13.6
13.7-1	A COL applicant that references the U.S. EPR design certification will submit a physical security plan to the NRC to fulfill the fitness for duty requirements of 10 CFR 26.	13.7
14.2-1	A COL applicant that references the U.S. EPR certified design will provide site specific information that describes the organizational units that manage, supervise, or execute any phase of the test program.	14.2.2

The communications subsystems are designed in accordance with applicable codes and standards regarding adverse environmental conditions (including weather, moisture, noise level, electromagnetic interference (EMI), and radio frequency interference (RFI)).

~~Except for the sound-powered system, the onsite communication subsystems are powered from the onsite Class 1E emergency uninterruptible power supply (EUPS), which is supported by the emergency and station blackout (SBO) diesel generators to provide backup power.~~ Electrical power from a Class 1E standby power source is provided for the portable wireless communication system base station, emergency offsite communication capability, and plant security communications. An isolation device is placed between ~~the~~ non-Class 1E COMS ~~system~~components and the Class 1E power supply to provide the required independence per IEEE Std 384-1992 (Reference 2). ~~The interface to the emergency offsite communication system is fed by the EUPS to maintain operability during SBO and LOOP conditions.~~The backup power supplies for other communication subsystems (with the exception of the sound powered phone system) and components are either from integral DC power units or other plant backup power supplies based on their operational significance and location.

The non-Class 1E COMS subsystems that are powered from Class 1E power sources are isolated by a single Class 1E circuit breaker or fuse.

The adequacy of this isolation device as required by IEEE Std 603-1998 clause 5.6.3 (Reference 4), independence between safety systems and other systems is demonstrated as follows:

- Clause 5.6.3.1 is met by the following:
  - The isolation device is classified as part of the safety system (Class 1E power system). The isolation device will be qualified to Class 1E standards.
  - The circuit breaker or fuse used for this isolation is applied so that the maximum credible voltage or current transient applied to the non-Class 1E side of the circuit breaker or fuse does not degrade below an acceptable level the operation of the circuit on the other side of that circuit breaker or fuse, in accordance with IEEE Std 384-1992.
- Clause 5.6.3.2 is met by the following:
  - Following the isolation device, the COMS power circuit is treated as an "associated circuit" and routed with the division from which it originated, or it remains separated from the Class 1E circuit. The separation of Class 1E equipment shall be in accordance with IEEE Std 384-1992.
- Clause 5.6.3.3 is met by the following:

13.3 Emergency Planning

A COL applicant that references the U.S. EPR design certification will provide a site-specific emergency plan in accordance with 10 CFR 50.47 and 10 CFR 50 Appendix E. Emergency planning is, in part, within the scope of a COL applicant. Design features, facilities, functions and equipment that are technically relevant to the design and are not site-specific, and which affect some aspect of emergency planning or the capability of a licensee to cope with plant emergencies are described in this section.

A COL applicant that references the U.S. EPR design certification will address the Requested Information in Fukushima Recommendation 9.3 regarding Emergency Preparedness Communications and Staffing as outlined in Enclosure 5 of the request for additional information pursuant to the 10 CFR 50.54(f) letter dated March 12, 2012 (ML12053A340).

A space of at least 1875 ft^2 suitable for a technical support center (TSC), which demonstrates compliance with the design requirements of NUREG-0696, Section 2.4 (Reference 1) for staffing levels of 25 persons (20 utility and 5 NRC) at 75 ft^2 per person, and Revision 1 of NUREG-0654/FEMA REP-1 (Reference 2), is provided within the integrated operations area adjacent to the main control room (MCR). This space is within the Safeguard Building. It is also within the control room envelope (CRE) which maintains habitability during normal, off-normal and emergency conditions; refer to Figure 6.4-1—Control Room Envelope Plan View 1 and Figure 6.4-2—Control Room Envelope Plan View 2. A detailed description of CRE habitability, including radiological protective provisions, is provided in Section 6.4. The control room air conditioning system is described in Section 9.4.1.

Voice communications between the TSC and the plant, local and offsite emergency response facilities, local and state governments and the NRC are provided by the plant telephone, paging and radio systems. These are described in Section 9.5.2.2.1 through Section 9.5.2.2.4.

Data communications within the TSC is provided through the process information and control system (PICS), which is described in Section 7.1.1.3.2. This non-safety related digital I&C system provides a screen-based interface capable of monitoring plant parameters during: normal, off-normal and emergency conditions. It electronically provides MCR safety parameter information to the TSC and to the NRC through the emergency response data system (ERDS). Safety-related information systems are described in detail in Section 7.5, with accident monitoring systems described in Section 7.5.1.2 and information systems provided in the emergency response facilities described in Section 7.5.1.3.

Space suitable for an operational support center (OSC), which demonstrates conformance with the design requirements for staffing levels consistent with current

Next File