

## ArevaEPRDCPEm Resource

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**From:** Wunder, George  
**Sent:** Wednesday, January 15, 2014 9:05 AM  
**To:** usepr@areva.com  
**Cc:** Bergman, Thomas; Segala, John; Clark, Theresa; Eudy, Michael; ArevaEPRDCPEm Resource  
**Subject:** US EPR DC DRAFT RAI 623 SECTION 19.02 RAI7304  
**Attachments:** RAI\_7304.docx

Attached please find Draft RAI No. 623 regarding your application for standard design certification of the U.S. EPR. If you have any questions or need clarification regarding this Draft RAI, please let us know as soon as possible, I will have our technical Staff available to discuss them with you.

Please also review the Draft RAI to ensure that we have not inadvertently included proprietary information. If there is any proprietary information, please let us know within the next ten days. If I do not hear from you within the next ten days, I will make the Draft RAI publicly available.

Sincerely,

George Wunder, Senior Project Manager  
Office of New Reactors

**Hearing Identifier:** AREVA\_EPR\_DC\_RAIs  
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## **Draft Request for Additional Information 623**

Issue Date: 01/15/2014

Application Title: U. S. EPR Standard Design Certification - Docket Number 52-020

Operating Company: AREVA NP Inc.

Docket No. 52-020

Review Section: 19.02 - Review of Risk Information Used to Support Permanent Plant-Specific Changes to the Licensing Basis: General Guidance  
Application Section: 19.2.8 Fukushima

### QUESTIONS

19.02-1

FSAR Rev 5 Section 19.2.8 references AREVA Technical Report ANP-10329 (Revision 0), "U.S. EPR Mitigation Strategies for Extended Loss of AC Power Event," and addresses the actions taken by the U.S. EPR design certification applicant to improve nuclear safety at U.S. EPR nuclear power plants in response to the Fukushima Daiichi Nuclear Power Plant accident. ANP-10329 specifies the performance requirements for portable equipment used as part of the mitigation strategies for an extended loss of AC power event at a U.S. EPR in response to NRC directives regarding lessons learned from the long-term station blackout caused by Japan's March 11, 2011, Great Tohoku earthquake and subsequent tsunami.

In EA-12-049, "Order Modifying Licenses with regard to Requirements for Mitigating Strategies for Beyond-Design-Basis External Events," the Commission ordered that licensees and COL holders establish a three-phase approach for mitigating beyond-design-basis external events. Section 6.2, "Equipment Quality," of NRC Staff Interim Guidance JLD-ISG-2012-1, "Compliance with Order EA-12-049, Order Modifying Licenses with regard to Requirements for Mitigating Strategies for Beyond-Design-Basis External Events," accepts NEI-12-06, "Diverse and Flexible Coping Strategies (FLEX) Implementation Guide," with additional provisions for the quality of equipment used to respond to beyond-design-basis external events.

In order to assess the capability of the equipment used as part of the mitigation strategies for beyond-design-basis external events to perform their intended use, the NRC staff requests that the U.S. EPR design certification applicant describe the performance requirements for the following:

a) safety-related pumps, valves, and dynamic restraints that are currently installed (or will be installed) in the U.S. EPR that will be used as part of the mitigation strategies for an extended loss of AC power event, and;

b) nonsafety-related pumps, valves, and dynamic restraints that are currently installed (or will be installed) in the U.S. EPR that will be used as part of the mitigation strategies for an extended loss of AC power event.

19.02-1

FSAR Rev 5 Section 19.2.8 references AREVA Technical Report ANP-10329 (Revision 0), "U.S. EPR Mitigation Strategies for Extended Loss of AC Power Event," and addresses the actions taken by the U.S. EPR design certification applicant to improve nuclear safety at U.S. EPR nuclear power plants in response to the Fukushima Daiichi Nuclear Power Plant accident. ANP-10329 specifies the performance requirements for portable equipment used as part of the mitigation strategies for an extended loss of AC power event at a U.S. EPR in response to NRC directives regarding lessons learned from the long-term station blackout caused by Japan's March 11, 2011, Great Tohoku earthquake and subsequent tsunami.

In EA-12-049, "Order Modifying Licenses with regard to Requirements for Mitigating Strategies for Beyond-Design-Basis External Events," the Commission ordered that licensees and COL holders establish a three-phase approach for mitigating beyond-design-basis external events. Section 6.2, "Equipment Quality," of NRC Staff Interim Guidance JLD-ISG-2012-1, "Compliance with Order EA-12-049, Order Modifying Licenses with regard to Requirements for Mitigating Strategies for Beyond-Design-Basis External Events," accepts NEI-12-06, "Diverse and Flexible Coping Strategies (FLEX) Implementation Guide," with additional provisions for the quality of equipment used to respond to beyond-design-basis external events.

In order to assess the capability of the equipment used as part of the mitigation strategies for beyond-design-basis external events to perform their intended use, the NRC staff requests that the U.S. EPR design certification applicant describe the provisions for design, manufacture, testing, installation, and surveillance to provide assurance of the seismic, environmental, and functional capability of currently installed (or to be installed) safety-related pumps, valves, and dynamic restraints to perform their intended functions as part of the mitigation strategies for an extended loss of AC power event at a U.S. EPR nuclear power plant. As part of this request, the U.S. EPR design certification applicant should indicate whether any safety-related pumps, valves, and dynamic restraints used as part of the mitigation strategies for an extended loss of AC power event will have performance requirements that differ from their original design and performance specification (such as differences in pump net positive suction head available).

#### 19.02-2

FSAR Rev 5 Section 19.2.8 references AREVA Technical Report ANP-10329 (Revision 0), "U.S. EPR Mitigation Strategies for Extended Loss of AC Power Event," and addresses the actions taken by the U.S. EPR design certification applicant to improve nuclear safety at U.S. EPR nuclear power plants in response to the Fukushima Daiichi Nuclear Power Plant accident. ANP-10329 specifies the performance requirements for portable equipment used as part of the mitigation strategies for an extended loss of AC power event at a U.S. EPR in response to NRC directives regarding lessons learned from the long-term station blackout caused by Japan's March 11, 2011, Great Tohoku earthquake and subsequent tsunami.

In EA-12-049, "Order Modifying Licenses with regard to Requirements for Mitigating Strategies for Beyond-Design-Basis External Events," the Commission ordered that licensees and COL holders establish a three-phase approach for mitigating beyond-design-basis external events. Section 6.2, "Equipment Quality," of NRC Staff Interim Guidance JLD-ISG-2012-1, "Compliance with Order EA-12-049, Order Modifying Licenses with regard to Requirements for Mitigating Strategies for Beyond-Design-Basis External Events," accepts NEI-12-06, "Diverse and Flexible Coping Strategies (FLEX) Implementation

Guide,” with additional provisions for the quality of equipment used to respond to beyond-design-basis external events.

In order to assess the capability of the equipment used as part of the mitigation strategies for beyond-design-basis external events to perform their intended use, the NRC staff requests that the U.S. EPR design certification applicant describe the provisions for design, manufacture, testing, installation, and surveillance to provide assurance of the seismic, environmental, and functional capability of currently installed (or to be installed) non-safety-related pumps, valves, and dynamic restraints to perform their intended functions as part of the mitigation strategies for an extended loss of AC power event at a U.S. EPR nuclear power plant. For example, in Chapter 6 of Revision 5 to the U.S. EPR FSAR Tier 2, the design certification applicant specifies that nonsafety-related pumps and valves will be installed as part of the mitigation strategies for a long-term station blackout at a U.S. EPR nuclear power plant.

#### 19.02-3

FSAR Rev 5 Section 19.2.8 references AREVA Technical Report ANP-10329 (Revision 0), “U.S. EPR Mitigation Strategies for Extended Loss of AC Power Event,” and addresses the actions taken by the U.S. EPR design certification applicant to improve nuclear safety at U.S. EPR nuclear power plants in response to the Fukushima Daiichi Nuclear Power Plant accident. ANP-10329 specifies the performance requirements for portable equipment used as part of the mitigation strategies for an extended loss of AC power event at a U.S. EPR in response to NRC directives regarding lessons learned from the long-term station blackout caused by Japan’s March 11, 2011, Great Tohoku earthquake and subsequent tsunami.

In EA-12-049, “Order Modifying Licenses with regard to Requirements for Mitigating Strategies for Beyond-Design-Basis External Events,” the Commission ordered that licensees and COL holders establish a three-phase approach for mitigating beyond-design-basis external events. Section 6.2, “Equipment Quality,” of NRC Staff Interim Guidance JLD-ISG-2012-1, “Compliance with Order EA-12-049, Order Modifying Licenses with regard to Requirements for Mitigating Strategies for Beyond-Design-Basis External Events,” accepts NEI-12-06, “Diverse and Flexible Coping Strategies (FLEX) Implementation Guide,” with additional provisions for the quality of equipment used to respond to beyond-design-basis external events.

The staff notes that FSAR Rev 5 Section 19.2.8 references AREVA Technical Report ANP-10329 (Revision 0), and specifies the performance requirements for portable equipment used as part of the mitigation strategies for an extended loss of AC power event at a U.S. EPR in response to NRC directives regarding lessons learned from the long-term station blackout.

In order to assess the capability of the equipment used as part of the mitigation strategies for beyond-design-basis external events to perform their intended use, the NRC staff requests that the U.S. EPR design certification applicant describe the provisions for design, manufacture, testing, installation, and surveillance to provide assurance of the seismic, environmental, and functional capability of portable pumps, valves, and dynamic restraints that are part of the mitigation strategies for an extended loss of AC power event at a U.S. EPR nuclear power plant.