

October 1, 2012

MEMORANDUM TO: John Segala, Chief
Licensing Branch 1
Division of New Reactor Licensing
Office of New Reactors

FROM: William (Billy) Gleaves, Senior Project Manager **/RAI/**
Licensing Branch 1
Division of New Reactor Licensing
Office of New Reactors

SUBJECT: SUMMARY OF JULY 30, 2012, PUBLIC MEETING WITH
AREVA NP, INC., TO DISCUSS THE U.S. EPR DESIGN
CERTIFICATION – REQUEST FOR ADDITIONAL INFORMATION 403
ON BORON DILUTION AND THE STEAM GENERATOR TUBE
RUPTURE ANALYSIS

On Monday, July 30, 2012, the U.S. Nuclear Regulatory Commission (NRC) held a Category I public meeting with AREVA NP, Inc., at the NRC headquarters building in Rockville, MD. During the one-half day afternoon meeting, the NRC staff and representatives of AREVA discussed the Request for Additional Information (RAI) 403, regarding boron dilution as it relates to a postulated loss of coolant accident and a revised steam generator tube rupture (SGTR) analysis. The meeting notice was available through both the NRC public meeting website and the Agencywide Documents Access and Management System (ADAMS) at Accession No. ML121950377. The meeting notice included the meeting agenda. List of attendees is included as Enclosure 1.

The meeting began at 1:00 P.M. Eastern Time (ET) and was open to public view as non-proprietary information was discussed. After opening remarks and introduction of attendees, meeting ground rules, and logistics were announced. The NRC staff briefly reviewed the meeting agenda. The meeting presentations began with NRC staff discussing the history of the review of boron dilution during long term cooling following a postulated loss of coolant accident. The RAI 403, Questions 15.06.05-61, -62, and -63 are follow-up questions to the original RAI 167, Questions 15.06.05-29, -30, and -36. The NRC staff stated that they wanted to understand the schedule, the paths to closure, and whether those paths to closure will address issues of concern. Some of the issues discussed were for RAI 403, Question 15.06.05-61, for small break loss-of-coolant accident (SBLOCA) boron dilution, the scope, extent, and impact of condensate on the accident, for RAI 167, Question 15.06.05-62, whether the analysis addresses reboration of the crossover piping in the Reactor Coolant System, and for RAI 167, Question 15.06.05-63, whether the proposed response will address the German Primarkreislauf-Versuchsanlage, or PKL tests. The NRC staff referenced Generic Safety Issue (GSI)-185, "Control of Recriticality Following Small-Break LOCAs in PWRs," dated

September 2005, regarding SBLOCA dilution and its referenced regulatory criteria contained in Title 10 of the *Code of Federal Regulations* (10 CFR) 50.46, General Design Criteria (GDC) 27, GDC 28, and GDC 35.

The AREVA staff discussed recent history and reviewed their plan to address the NRC comments. With regard to the SGTR analysis, AREVA stated that the last analysis was done in 2007. Since that time, issues have been identified in the analysis methodology in software SCTRS-RELAP5 with the turbine control valve modeling, SGTR with loss of offsite power, and steam generator loss coefficients. The impact of these changes to the computer model is discussed in the upcoming Revision 5 to the Final Safety Analyses Report (FSAR), specifically in Sections 15.6.3, "SGTR Safety Analysis" and 15.0.3, "SGTR Radiological Does Analysis." The schedule for that submittal containing, in part, the revised ANP-10288, Revision 1, "U.S. EPR Post-LOCA Boron Precipitation and Boron Dilution Technical Report," and the revised RAI response is July 6, 2013. The revision to the SGTR analysis was agreed to be tracked under the current closed RAI 167, Question 15.06.05-34 that will be re-opened to track this issue. The public portion of the meeting was closed at 1:50 P.M. ET.

At 1:55 P.M. ET, the meeting was closed to the public to discuss information classified as proprietary by AREVA. That information related directly to the topics discussed in the non-proprietary portion of the meeting. AREVA and the NRC again discussed proprietary details of the proposed changes to current RAI responses, Topical Reports, and the FSAR. With regard to RAI 167, Question 15.06.05-34, AREVA identified the potential for an audit of its calculations in March 2013, with a draft RAI response to NRC in May 2013, and a final version to NRC in July 2013.

The NRC staff believes that this meeting was productive and shows AREVA's intent to resolve outstanding EPR fuel design questions. The NRC staff agreed with AREVA that regular communications of project status particularly in regard to the schedule and content of RAI responses and Topical Reports is necessary for the orderly closure of open review issues.

Docket No.: 52-020

Enclosures: 1. List of Attendees
 2. NRC presentation slides (non-proprietary)
 3. AREVA presentation slides (non-proprietary)
 4. AREVA presentation slides (proprietary)

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DATE	08/30/2012	08/ 30 /2012	08/ 31 /2012	10/01/2012

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**Public Meeting with AREVA NP, Inc to Discuss the EPR Design
Certification RAI 403 and SGTR**

July 30, 2012

Rockville, MD

Name	Organization
Shanlai Lu	NRC/NRO
Fred Fosaty	NRC/NRO
David Caraher	NRC/NRO/Contractor
Billy Gleaves	NRC/NRO
Getachew Testfaye	NRC/NRO
Vesselin Palazov	NRC/NRO/Contractor
Jerry Holm	AREVA
Parvez Salim	AREVA
Darrell Gardner	AREVA
Lisa Gerken	AREVA
Eugene Moore	AREVA
Brian Vance	AREVA
Dennis Williford	AREVA
Rebecca Steinman (by conference bridge)	MNES

[Non-Proprietary] AVEVA's Presentation Slides from July 30, 2012 Public Meeting
to Discuss Closure of U.S. EPR FSAR Open Items on RAI 403
(Boron Dilution in LOCA) and Reanalysis of SGTR Event

File located in ADAMS at ML12223A260

Enclosure 2

[Proprietary] AVEVA's Presentation Slides from July 30, 2012 Public Meeting
to Discuss Closure of U.S. EPR FSAR Open Items on RAI 403
(Boron Dilution in LOCA) and Reanalysis of SGTR Event

File located in ADAMS at ML12223A268

Enclosure 3

U.S. NRC Presentation Slides for July 30, 2012, Public Meeting on U.S. EPR
RAI 403 Related to SBLOCA and Boron Dilution.

File located in ADAMS at ML12223A314

Enclosure 4