

November 12, 2013

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

FROM: Amy M. Snyder, Sr. Project Manager /RA/  
Licensing Branch 1  
Division of New Reactor Licensing  
Office of New Reactors

SUBJECT: SUMMARY OF PUBLIC MEETING, AUGUST 7-8, 2013, ON  
AREVA NP'S DESIGN CHANGES SUBMITTED IN REVISION 5 OF  
THE U.S. EPR DESIGN CERTIFICATION FINAL SAFETY ANALYSIS  
REPORT

On Wednesday and Thursday, August 7 and 8, 2013, respectively, the U.S. Nuclear Regulatory Commission (NRC) held a Category I public meeting with AREVA, NP, Inc. (AREVA), at the NRC headquarters building in Rockville, MD. The purpose of the meeting was for AREVA to discuss changes in Revision 5 of its Final Safety Analysis Report (FSAR) for the U.S. EPR Design Certification (DC) and any associated impacts of these design changes on other parts of the U.S. EPR DC review.

The meeting notice is available through both the NRC website under public meetings and through the Agencywide Documents and Management System (ADAMS) at Accession No. ML13199A471. The meeting notice included the meeting agenda. A list of the meeting attendees is included in Enclosure 1 to this summary. AREVA's presentation slides can be found at ADAMS accession No. ML13232A108.

AREVA's presentation was focused on the changes made in Revision 5 of the U.S. EPR DC FSAR that were unrelated to requests for additional information (RAIs). AREVA explained that such revisions were the result of AREVA's design change requests (DCRs) and corrective action reports and are reflected in both Tier 1 and Tier 2 areas of its application. Before presenting the changes on an FSAR chapter basis, AREVA explained its overall presentation approach for each DCR. AREVA briefly described the change and its basis and then it identified the FSAR sections that were impacted. AREVA explained that the basis for each DCR was either to resolve the change request, "enhance" licensing or safety of the plant, or improve marketability of the plant. The NRC asked AREVA to explain what "enhancing licensing" means with regard to its change approach. AREVA explained that enhancing licensing generally means changing certain portions of the European design, which it had incorporated in earlier versions of the U.S. EPR design, to be consistent with the U.S. requirements or standards.

The NRC staff asked AREVA how it incorporated RAI responses and associated FSAR markups in Revision 5 of the U.S. FSAR. AREVA stated that it included such information on a case-by-case basis, but estimated that, in general, it had included in Revision 5 of the FSAR the content of RAI responses and associated FSAR markups that were submitted to the NRC through mid-May 2013.

AREVA concluded that the majority of the changes in Revision 5 of the FSAR are not expected to have a significant impact on NRC Safety Evaluation Reports and that many of the changes are conforming changes. AREVA said that from an overall safety perspective, the most significant changes in Revision 5 of the U.S. EPR DC FSAR are located in the areas of aircraft impact assessment, civil/structural, and the steam generator blowdown transfer valves.

The NRC staff asked whether AREVA plans to make any significant changes in the future in its design, for example, in the instrumentation and controls area. AREVA stated that it would like to discuss the changes that would be reflected in Revision 6 of the U.S. EPR DC FSAR at another time. The NRC staff requested that AREVA inform the NRC staff as soon as possible if AREVA is planning to make significant changes in its design so that NRC could take such changes into account when making decisions on how it will manage the staff's review of Revision 5 of the FSAR, as well as the remainder of the U.S. EPR DC application review.

Action items from the meeting were reviewed to ensure that each action was clearly described and understood. The action item list is included as Enclosure 2 to this meeting summary.

The NRC staff concluded that the two days of meetings were very productive and would help the NRC staff to plan how to proceed with its review of Revision 5 of the U.S. EPR DC FSAR as well as to help with developing the staff's Advisory Committee on Reactor Safeguards (ACRS) subcommittee scheduling recommendations. However, the NRC staff must evaluate the changes as it completes its review of Revision 5 of the U.S. EPR DC application before it will be able to determine their significance.

Docket No.: 52-020

Enclosures:

1. List of Attendees for Each Day
2. List of Action Items

cc: See next page

The NRC staff asked AREVA how it incorporated RAI responses and associated FSAR markups in Revision 5 of the U.S. FSAR. AREVA stated that it included such information on a case-by-case basis, but estimated that, in general, it had included in Revision 5 of the FSAR the content of RAI responses and associated FSAR markups that were submitted to the NRC through mid-May 2013.

AREVA concluded that the majority of the changes in Revision 5 of the FSAR are not expected to have a significant impact on NRC Safety Evaluation Reports and that many of the changes are conforming changes. AREVA said that from an overall safety perspective, the most significant changes in Revision 5 of the U.S. EPR DC FSAR are located in the areas of aircraft impact assessment, civil/structural, and the steam generator blowdown transfer valves.

The NRC staff asked whether AREVA plans to make any significant changes in the future in its design, for example, in the instrumentation and controls area. AREVA stated that it would like to discuss the changes that would be reflected in Revision 6 of the U.S. EPR DC FSAR at another time. The NRC staff requested that AREVA inform the NRC staff as soon as possible if AREVA is planning to make significant changes in its design so that NRC could take such changes into account when making decisions on how it will manage the staff's review of Revision 5 of the FSAR, as well as the remainder of the U.S. EPR DC application review.

Action items from the meeting were reviewed to ensure that each action was clearly described and understood. The action item list is included as Enclosure 2 to this meeting summary.

The NRC staff concluded that the two days of meetings were very productive and would help the NRC staff to plan how to proceed with its review of Revision 5 of the U.S. EPR DC FSAR as well as to help with developing the staff's Advisory Committee on Reactor Safeguards (ACRS) subcommittee scheduling recommendations. However, the NRC staff must evaluate the changes as it completes its review of Revision 5 of the U.S. EPR DC application before it will be able to determine their significance.

Docket No.: 52-020

Enclosures:

1. List of Attendees for Each Day
2. AREVA public presentation slides
4. Agenda

cc: See next page

**DISTRIBUTION:**

Public	LB1/RF	RidsNroDnrl
CAshley	APatel	RidsOgcMailCenter
A-MGrady	JMcLellan	RidsAcrcsAcnwMailCenter
SLu	MattThomas	TerryJackson
DZhang	JBudzynski	

**ADAMS Accession No.: ML13239A160**      **\*via email**      **NRO-002**

<b>OFFICE</b>	DNRL/LB1: PM	DNRL/LB1: LA*	DNRL/LB1: BC
<b>NAME</b>	MMiernicki	JMcLellan	JSegala (MMiernicki for)
<b>DATE</b>	10/ /2013	08/27/2013	11/12/2013

**OFFICIAL RECORD COPY**



**Public Meeting, August 7, 2013**  
**To Discuss Revision 5 of the U.S. EPR Design Certification**  
**Final Safety Analysis Report**  
**8:00 a.m. – 4:00 p.m.**  
**U.S. Nuclear Regulatory Commission**

<b>Name</b>	<b>Organization</b>
John Segala	U.S. NRC/NRO
Amy Snyder	U.S. NRC/NRO
Surinder Arora	U.S. NRC/NRO
Perry Buckberg	U.S. NRC/NRO
Peter Hearn	U.S. NRC/NRO
Mike Eudy	U.S. NRC/NRO
Michael Miernicki	U.S. NRC/NRO
Prosanta Chowdhury	U.S. NRC/NRO
S.K. Mitra	U.S. NRC/NRO
Mohammed Shuaibi	U.S. NRC/NRO
Terry Jackson	U.S. NRC/NRO
Deanna Zhang	U.S. NRC/NRO
Wendell Morton	U.S. NRC/NRO
Jack Zhao	U.S. NRC/NRO
Frank Akstulewicz	U.S. NRC/NRO
Kim Hawkins	U.S. NRC/NRO
Jim Xu	U.S. NRC/NRO
Theresa Clark	U.S. NRC/NRO
Eileen McKenna	U.S. NRC/NRO
John McKirgan	U.S. NRC/NRO

<b>Name</b>	<b>Organization</b>
Pei-Ying Chen	U.S. NRC/NRO
Hahn Phan	U.S. NRC/NRO
Greg Makar	U.S. NRC/NRO
Andrea Keim	U.S. NRC/NRO
Mike McCoppin	U.S. NRC/NRO
Ed Stutzgagge	U.S. NRC/NRO
Y.C. (Renee) Li	U.S. NRC/NRO
Lynn Mrowca	U.S. NRC/NRO
Ryan Nolan	U.S. NRC/NRO
George Thomas	U.S. NRC/NRO
Sardar Ahmed	U.S. NRC/NRO
Tuan Le	U.S. NRC/NRO
Eric Reichelt	U.S. NRC/NRO
David Terao	U.S. NRC/NRO
Raul Hernandez	U.S. NRC/NRO
Jason Schaperow	U.S. NRC/NRO
Weijun Wang	U.S. NRC/NRO
J.C. Dehmel	U.S. NRC/NRO
Steven Downey	U.S. NRC/NRO
Nicholas McMurray	U.S. NRC/NRO
Yin Lain	U.S. NRC/NRO
Ian Tseng	U.S. NRC/NRO
Jason Huang	U.S. NRC/NRO
Robert Vettori	U.S. NRC/NRO

<b>Name</b>	<b>Organization</b>
Len Gucwa	AREVA
Tony Lentz	AREVA
Tim Stack	AREVA
Ray Lewis	AREVA
John McEntire	AREVA
Paul Infanger	UniStar
R.R. Sgarro	PPL Bell Bend
Larry Wheeler	U.S. NRC/NRO



**Public Meeting, August 8, 2013**  
**To Discuss Revision 5 of the U.S. EPR Design Certification**  
**Final Safety Analysis Report**  
**8:00 a.m. – 4:00 p.m.**  
**U.S. Nuclear Regulatory Commission**

<b>Name</b>	<b>Organization</b>
John Segala	U.S. NRC/NRO
Amy Snyder	U.S. NRC/NRO
Surinder Arora	U.S. NRC/NRO
Peter Hearn	U.S. NRC/NRO
Perry Buckberg	U.S. NRC/NRO
Eileen McKenna	U.S. NRC/NRO
Antonia Dias	U.S. NRC/NRO
Mike McCoppin	U.S. NRC/NRO
Edward Sastr	U.S. NRC/NRO
Greg Makar	U.S. NRC/NRO
Craig Harbuck	U.S. NRC/NRO
Deanna Zhang	U.S. NRC/NRO
Ian Tseng	U.S. NRC/NRO
Y.C. (Renee) Li	U.S. NRC/NRO
Angelo Stubbs	U.S. NRC/NRO
Devender Reddy	U.S. NRC/NRO
Derek Scully	U.S. NRC/NRO
Hien M. Le	U.S. NRC/NRO
Ed Stutzgag	U.S. NRC/NRO
Len Gucwa	AREVA

<b>Name</b>	<b>Organization</b>
Tim Stack	AREVA
Tony Lentz	AREVA
John McEntire	AREVA
Paul Infanger	UniStar



**ACTION ITEMS FOR AUGUST 7&8 PUBLIC MEETING ON US EPR DC FSAR REV 5 DESIGN CHANGES**

Action Item	Responsible Entity	Action
1	AREVA/NRC	Meeting to discuss changes and impacts on the PRA that have occurred since PRA cut-off date of September 2012.
2	AREVA/NRC	Decide on vehicle to discuss non-RAI related changes in Rev. 6.
3	AREVA	Discuss how changes are addressed in Section 17.4.
4	NRC	Slide 57, Staff needs to reconcile the AIA safety evaluation vs. Rev. 5
5	AREVA	Slide 6, Interior doors DCR – how does the security reviewer know about DCR revs. Confirm that this DCR was evaluated for AIA impact.
6	AREVA	Slide 6, remove decon system DCR – is there an COL Item to discuss portable system? Is interface capability discussed in Chp 11?
7	AREVA	Slide 20 – update slide. Send NRC PM latest slides.
8	NRC	RAI 563, non-safety control system changes in Chp 7 – NRC to review RAI 563 and Fukushima Technical Report
9	AREVA	Slide 52, remove component level connection from SICS to PACS. Confirm DCR description vs. the current I&C design.
10	AREVA	Slide 9 and 36, SSC classification – are changes in Table 3.2.2.-1 for SGBD in conformance with RG 1.143 and SRP 10.4.8 guidance?
11	AREVA	Slide 10, minimum thickness in Chapter 12 vs. the actual thickness in chapter 3. AREVA is to determine if it would be simpler to present wall thicknesses in a different manner.
12	AREVA	Slide 28, RAI 578 – discuss the ESW flow margin changes by adding new flow path.
13	AREVA/NRC	Clarification phone call on RAI 563 – use of ASCE 7-10 for FP Building, there may be a follow-on RAI.
14	AREVA	Section 9.1.4, Spent Fuel Pool seal leakage rate inconsistency (AIA vs. design basis)
15	AREVA	Closure plan for RAP list in Section 17.4 to allow this to be tracked. Add this to the PRA audit plan action item list (or alternate method).
16	AREVA	Confirm Section 9.1.2 statement that water level will not drop to less than 10 feet above the top of the fuel assemblies. Check compared to changes that impact Fuel Building volumes.
17	AREVA	Reconcile ITAAC Table 3.8-1.
18	AREVA	Slide 36, Explain rationale and intended means to mechanically limit Main FW flow as described in Section 10.4.7.2.2.1. Changes made to support ATWS and I&C NSR failures.
19	NRC	Slide 36, Review RAI 563 and Fukushima Technical Report to determine how the potential for water hammer is addressed at the Fire Water Distribution to EFW interface. If not sufficiently addressed on FSAR staff will issue an RAI.
20	NRC	I&C branch to review impact on communications power sources associated with RAI 549 (adequate backup power sources provided).
21	AREVA	Evaluate Tech Spec 3.7.22 for valve opening and closing requirements for SGBD transfer valves. This includes design basis, Tech Spec basis and supporting I&C.

22	AREVA	Confirm FSAR impacted figures in Chapter 3 and 12 associated with the following DCRs: <ul style="list-style-type: none"> <li>• 113-7000556 – Slide 38</li> <li>• 113-7006837- Slide 40</li> </ul> Confirm other figure citations are correct in slides.
23	NRC	Slide 46 – Review RAD evaluations associated with 113-9103167.
24	AREVA	Slide 47 – Confirm whether RAD evaluation considered dose rate associated with HVAC duct material change (accessibility and shine)
25	NRC	Slide 48 – For CR 2013-3675, confirm that changes to postaccident radiation zoning are acceptable.
26	AREVA	Slide 23 – For 113-9099652, confirm that change was fully evaluated from RAD perspective (e.g., zoning, transfer of source terms).
27	NRC	Send e-mail discussing other questions associated with RAD review.

## ACRONYMS

AIA	aircraft impact assessment
AREVA	AREVA NP, Inc.
ASCE	American Society of Civil Engineers
ATWS	anticipated transient without Scram
COL	combined license
DCR	design change request
EFW	emergency feedwater
FW	feedwater
HVAC	heating, ventilation, air conditioning
ITAAC	inspections, tests, analyses and acceptance criteria
NRC	Nuclear Regulatory Commission
NSR	non-safety-related
PAS	process automation system
PM	project manager
PRA	probabilistic risk assessment
RAD	radiation
RAI	request for additional information
RAP	reliability assurance program
SICS	safety information and control system
SGBD	steam generator blow down
SSCs	structures systems and components

DC AREVA - EPR Mailing List  
cc:

(Revised 09/12/2013)

Dr. Charles L. King  
Licensing Manager, IRIS Project  
Westinghouse Electric Company  
Science and Technology Department  
20 International Drive  
Windsor, CT 06095

Mr. Robert E. Sweeney  
IBEX ESI  
4641 Montgomery Avenue  
Suite 350  
Bethesda, MD 20814

Mr. Gary Wright, Director  
Division of Nuclear Facility Safety  
Illinois Emergency Management Agency  
1035 Outer Park Drive  
Springfield, IL 62704

## DC AREVA - EPR Mailing List

### Email

alau@washdc.whitecase.com (Albie Lau)  
APH@NEI.org (Adrian Heymer)  
awc@nei.org (Anne W. Cottingham)  
bgattoni@roe.com (William (Bill) Gattoni)  
cwaltman@roe.com (C. Waltman)  
david.hinds@ge.com (David Hinds)  
david.lewis@pillsburylaw.com (David Lewis)  
erg-xl@cox.net (Eddie R. Grant)  
Gayle.Elliott@areva.com (Gayle Elliott)  
gcesare@enercon.com (Guy Cesare)  
greg.gibson@unistarnuclear.com (Greg Gibson)  
James.Ransom@areva.com (James Ransom)  
james1.beard@ge.com (James Beard)  
jerald.head@ge.com (Jerald G. Head)  
Joseph\_Hegner@dom.com (Joseph Hegner)  
judy.romine@areva.com (Judy Romine)  
KSutton@morganlewis.com (Kathryn M. Sutton)  
kwaugh@impact-net.org (Kenneth O. Waugh)  
lchandler@morganlewis.com (Lawrence J. Chandler)  
Len.Gucwa.ext@areva.com (Len Gucwa)  
maria.webb@pillsburylaw.com (Maria Webb)  
matias.travieso-diaz@pillsburylaw.com (Matias Travieso-Diaz)  
media@nei.org (Scott Peterson)  
mjcaverly@ppl.web.com (Michael Caverly)  
MSF@nei.org (Marvin Fertel)  
Nathan.Hottle@areva.com (Nathan Hottle)  
nirsnet@nirs.org (Michael Mariotte)  
Nuclaw@mindspring.com (Robert Temple)  
patriciaL.campbell@ge.com (Patricia L. Campbell)  
paul.gaukler@pillsburylaw.com (Paul Gaukler)  
Paul@beyondnuclear.org (Paul Gunter)  
pbessette@morganlewis.com (Paul Bessette)  
pedro.salas@areva.com (Pedro Salas)  
RJB@NEI.org (Russell Bell)  
rrsgarro@pplweb.com (Rocco Sgarro)  
ryan\_sprengel@mnes-us.com (Ryan Sprengel)  
sabinski@suddenlink.net (Steve A. Bennett)  
sfrantz@morganlewis.com (Stephen P. Frantz)  
Sherry.Mcfaden@areva.com (Sherry McFaden)  
SRubin@numarkassoc.com (Stuart Rubin)  
stephan.moen@ge.com (Stephan Moen)  
strambgb@westinghouse.com (George Stramback)  
Tiffany.Wills@areva.com (Tiffany Wills)  
tkkibler@scana.com (Tria Kibler)

DC AREVA - EPR Mailing List

Tony.McNulty@hse.gsi.gov.uk (Tony McNulty)  
trsmith@winston.com (Tyson Smith)  
Vanessa.quinn@dhs.gov (Vanessa Quinn)  
vijukrp@westinghouse.com (Ronald P. Vijuk)  
Wanda.K.Marshall@dom.com (Wanda K. Marshall)  
wayne.marquino@ge.com (Wayne Marquino)  
whorin@winston.com (W. Horin)