

April 16, 2013

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

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

SUBJECT: SUMMARY OF FEBRUARY 26, 2013, PUBLIC MEETING WITH
AREVA NP, INC., TO DISCUSS THE U.S. EPR DESIGN
CERTIFICATION – TECHNICAL ISSUES IMPACTING THE REVIEW
SCHEDULE

On Tuesday, February 26, 2013, 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 on the U.S. EPR Design Certification review. The objective of this meeting was for the NRC staff and representatives from AREVA to share their perspectives on what they believe are the technical issues impacting the review schedule in order to gain a common understanding of what needs to be resolved to close the technical issues in these areas. The meeting notice was available through both the NRC public meeting website and the Agencywide Documents Access and Management System (ADAMS) at Accession No. ML13052A465. The meeting notice included the meeting agenda. The list of attendees is found as Enclosure 1. The action items resulting from this meeting are found in Enclosure 2.

AREVA informed the NRC staff that it wanted to maintain the current schedule and would further evaluate and clarify in any way in which it could any gaps in understanding because it wanted to drive the review to closure for the combined license applicants in this design center without compromising safety. The NRC staff walked through the issues covering 13 technical areas (seismic/structural; fuel seismic mechanical assembly, small break loss of coolant accident- boron dilution, anticipated transient without scram, Generic Safety Issue-191, *Assessment of Debris Accumulation on Pressurized-Water Reactor Sump Performance*, digital instrumentation and controls (I&C), single failure of self-powered neutron detector, design specifications, spent fuel cask transfer facility, I&C technical specifications, Fukushima, severe accidents, and probabilistic risk assessment update) that it believes are gaps or limitation of information needed to close on its regulatory review. Highlights of the key technical points for critical path items are summarized below.

The NRC staff identified two technical areas in the seismic/structural review that are key scheduler drivers. Specifically, the NRC staff identified that AREVA, after several attempts, has not yet been able to successfully demonstrate its nuclear auxiliary building seismic II over I interaction (NAB II/I) approach. The staff identified that since AREVA's NAB II/I approach

remains in question at this point in time, the current schedule is at risk because if not acceptable, a design change would then be needed. In addition, the NRC staff emphasized that it will be seeing for the first time AREVA's seismic margin analysis (SMA) at the end of May 2013. The NRC staff communicated with AREVA that as part of its schedule reevaluation process, the NRC staff revisited its previous assumptions that it used in developing the current schedule (the staff's May 21, 2012 schedule) and identified that the assumption it used for determining the amount of time the NRC staff needed to review the SMA was not realistic. The NRC staff said that such reviews are complex and have historically taken more than 60 days for the applicant to bring closure to issues identified by the NRC staff.

The NRC staff also commented on AREVA's approach to its evaluation of the structural critical sections. Additionally, the NRC staff informed AREVA that it was not sure what method AREVA was going to settle on with regard to its soil-structure interaction computer code (SASSI) analysis. AREVA clarified that it has always been committed to the direct method and that the indirect method was on parallel path with the direct method, as a contingency. The NRC staff said that this approach has added to the staff's review. AREVA explained that its parallel path approach was part of life cycle for the specific request for additional information associated with these analyses, as defined in the current (May 21, 2012) schedule, and should not be a surprise to the NRC staff.

The NRC staff identified that resolutions of open items (OIs) related to the U.S. EPR Fuel Assembly Mechanical Design Topical Report (ANP-10285P) as another key technical area that is on critical path and is driving the schedule. The NRC staff explained that after many interactions between AREVA and the NRC staff since March 2010, the overall path to resolution remains unclear; significant technical issues remain; and AREVA has not yet settled on a design, nor has the NRC staff seen calculations showing the extent of grid deformation. AREVA said its approach has evolved; however it believes that a NRC staff audit, in addition to the NRC staff's review of the associated topical and technical reports should help to clarify the NRC staff's understanding of AREVA's design. The NRC staff asked AREVA to consider its feedback on AREVA's Fuel Seismic Closure Plan that was provided to AREVA on February 25, 2013.

After the NRC staff walked through the issues covering the 13 technical areas that it believes are gaps or limitation of information needed to close on its regulatory review, the NRC staff introduced a new topic that may be a potential schedule impact. The NRC staff identified that the aircraft impact assessment (AIA) is an area that potentially could impact the schedule. The NRC staff commented that usually the AIA inspection is performed after the design is completed. Historically, there have been several following-on actions or findings after each AIA inspection. AREVA told the NRC staff that it would be ready for this inspection in April 2013. The NRC staff noted that AREVA has not yet completed its design as evidenced by AREVA's request for additional information (RAI) response commitment schedule ending on August 30, 2013. The NRC staff suggested that AREVA communicate with the NRC's AIA team early to ensure that any of the AIA team understands the U.S. EPR design. In addition, the NRC staff noted the newly revised schedule, to be issued soon, will reflect rulemaking beginning at the end of Phase 4. The NRC staff explained that this differs from the current schedule in that the duration of rulemaking is increased by 2 months.

The NRC staff concluded that this meeting was productive because it provided an opportunity for the NRC staff to identify its concerns regarding AREVA's closure strategy and its impacts on the remainder of the review.

The NRC staff agreed with AREVA that regular communications of project status particularly in regard to the schedule and content of RAI responses and the remaining Technical Report is necessary for the orderly closure of issues. However, NRC staff said that it will place safety first and the focus of the remainder of the review should be on the closure of issues rather than schedule. In addition, both AREVA and the NRC staff agreed that in the future both organizations need to promptly communicate on issues that may impact schedule.

The action items resulting from this meeting are found in Enclosure 2.

Docket No.: 52-020

Enclosure: 1) List of Attendees
 2) Action Items

cc: See next page

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U.S. Nuclear Regulatory Commission
Public Meeting
February 26, 2013

Sign-In Sheet

Name	Organization
Billy Gleaves	NRC/NRO/DLPM
George J. Kuczynski	PPL
Jerald Holm	AREVA
Greg Gibson	UNISTAR
Tony Robinson	AREVA
Brian Vance	AREVA
Len Gucwa	AREVA
Nawar Alchaar	AREVA
Graydon Uyeda	AREVA
Michael Caverly	PPL-Bell Bend
John McKirgan	NRC
John Segala	NRC
Eileen McKenna	NRC
Frank Akstulewicz	NRC
David Matthews	NRC
Brian Thomas	NRC
Terry Jackson	NRC
David Terao	NRC

*Attended by conference bridge



**U.S. Nuclear Regulatory Commission
Public Meeting
February 26, 2013**

Sign-In Sheet

Name	Organization
Perry Buckberg	NRC
Tanya Ford	NRC
Samuel Lee	NRC
David Santos	NRC
Stephanie Coffin	NRC
Tom Bergman	NRC
Mohamed Shuaibi	NRC
Wayne Massie	NRC
Sebastien Thomas	UNISTAR
Surinder Arora	NRC
Ilka T. Berrios	NRC
Theresa Clark	NRC
Sunwoo Park	NRC
Paul Kallen	NRC
Joe Donoghue	NRC
Joseph Colaccino	NRC
Charles Ader	NRC
James Xu*	

*Attended by conference bridge



U.S. Nuclear Regulatory Commission
Public Meeting
February 26, 2013

Sign-In Sheet

Name	Organization
Michael Miernicki*	NRC
Lynn Mrowca	NRC
Amy Snyder	NRC

*Attended by conference bridge

Action Items:

1. Further discussion is needed in the following areas to either clarify design changes or to assist the staff to gain a better understanding of AREVA's design:
 - Nuclear Auxiliary Building II/I Approach and Analysis
 - Seismic Margin Analysis Strategy and Methodology
 - Hydrogen Generation Modeling
 - Blast Wave Effects Methodology and Analysis
2. Staff will develop a Request for Additional Information (RAI) on Anticipated Transient Without Scram (ATWS) and more dialogue on ATWS may be needed.
3. In preparation for AREVA's April 30, 2013 advanced technical report on Fukushima, the staff will establish and communicate the acceptance criteria for the Fukushima Recommendations, as well as identify the technical branches that should be involved in the review of the associated Fukushima RAIs.
4. AREVA will review with staff the Level 2 Probabilistic Risk Assessment Errors and discuss its impacts to the review.
5. AREVA will review staff's comments on the Fuel Seismic Mechanical Assembly in preparation for a discussion with staff.
6. The NRC staff will develop and share an audit plan for Design Specifications and staff needs to determine when it is ready to perform its audit.
7. The NRC staff will conduct an audit to gain a better understanding of AREVA's approach to digital instrumentation and controls.
8. The NRC staff will determine after it reviews AREVA's advanced response on Boron Dilution whether the staff will need to conduct an audit.
9. AREVA will submit an advance response and a final response regarding blast wave effects. Staff is to determine whether they will do confirmatory analysis after AREVA submits its advance response regarding blast wave effects.
10. For the remainder of the review, both AREVA and the NRC staff will promptly communicate on issues that may impact schedule.

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cc:

(Revised 03/25/2013)

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