

September 8, 2010

APPLICANT: AREVA NP, Inc.
APPLICATION: U.S. EPR Design Certification Application
SUBJECT: MEETING WITH AREVA NP TO DISCUSS COMMUNICATIONS
INDEPENDENCE FOR DIGITAL INSTRUMENTATION AND CONTROLS
SYSTEMS

On June 25, 2010, a Category 1 public meeting was held between the U.S. Nuclear Regulatory Commission (NRC) staff and representatives of AREVA NP, Inc. (AREVA). The meeting was held at the NRC office, 11555 Rockville Pike, Rockville Maryland. Initially noticed from Room T10-A01; due to the number of attendees the meeting was relocated to the Commissioner's Hearing Room. The purpose of this meeting was both describe to AREVA the NRC staff's current position with regard to the U.S. EPR Instrumentation and Controls (I&C) design attributes relative to 10 Code of Federal Regulations (CFR) 510.55a(h), General Design Criteria (GDC) 24, and GDC 21; and to allow AREVA to present its proposed methods of addressing these issues. The meeting notice with the agenda can be found in the Agencywide Documents Access and Management System (ADAMS) Accession No. ML100910049. The agenda included designated times for public interactions with the NRC staff. Enclosure 1 lists the meeting attendees. Teleconferencing was offered in the meeting notice and several members of the public availed themselves of that opportunity for this meeting.

The meeting started at 12:40 p.m. (Eastern Daylight Savings Time).

The Deputy Director of the Division of Engineering provided the opening remarks that identified the NRC staff's position and the purpose for this meeting (Enclosure 2). AREVA also provided opening remarks regarding their understanding that the issues at hand need to be expeditiously addressed and introduced that they had come prepared to introduce several proposed changes to address some of NRC staff concerns. As synopsised in slides under ADAMS Accession No. ML101820130, the NRC staff presentation addressed the safety significance of the independence issue, its regulatory basis in Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50 Section 55a and GDC 24, and the NRC staff position relative to the U.S. EPR I&C Design identified compliance discrepancies.

AREVA questions and resultant discussion described each organization's:

- understanding of the applicability of GDC 21, as well and its specific applicability to the issue,
- the perceived necessity for using the full set of Self Powered Neutron Detectors (SPNDs) in the generation of information necessary to implement the related protection system trip strategies, and
- a side topic related to the definition of "functional" independence.

The AREVA presentation addressed several aspects of their design that is a proposed modification to address NRC staff concerns primarily to reduce the complexity of the communication systems architecture. AREVA also identified areas where they feel inter-divisional communications are still considered necessary and other aspects where they

proposed to modify the design to eliminate such communications. The presentation is publically available under ADAMS Accession No. ML101820131.

The presentation described approaches to address NRC staff concerns by:

1. Providing one-way communication from the Protection System (PS)/ Safety Automation System (SAS) to the Process Information and Control System (PICS)
2. Eliminating communication between Safety Information and Control System (SICS) divisions
3. Providing simplification of the SICS, in general
4. Reducing the amount of information transmitted between SAS divisions
5. Providing a separate Diverse Actuation System (DAS) I&C system (Diverse backup System – DBS) utilizing the Plant Data network (PDN) including a separate Human-Machine Interface (HMI)
6. Incorporating the Severe Accident I&C functions into the new DBS

AREVA does not intend to change design in the area of communications between PS divisions or in the service unit interface to the TXS system. At the conclusion of the presentation, the NRC staff remained opposed to AREVA position relative to these issues

Discussions occurred during the AREVA presentation to clarify the information contained on the presentation slides.

A break was called at approximately 2:45 p.m. with two-thirds of the AREVA presentation complete. One member of the public in attendance addressed the NRC staff regarding the benefits of the service unit and its relationship in other design applications.

After the remainder of the AREVA presentation and attendant discussion, the NRC staff then caucused for 20 minutes and returned to provide their feedback on the substance of the presentation and the NRC staff's perceived path forward.

- The NRC staff appreciated that AREVA had taken their concerns seriously, were proposing changes to address the issues, and were willing to discuss these issue in the public venue.
- Overall, the opinion of the NRC staff is that the changes proposed appear positive. However, a lack of objections cannot be construed as an approval, given that no such information is currently docketed for this review, The NRC staff is looking forward to reviewing the revised design once it is submitted.
- The NRC staff also commented that the approaches for design changes were well explained and appear to make technical sense. For those issues proposed to remain as-is for which the NRC staff perceives do not meet regulation, there are licensing processes to request exemptions from regulation. It is possible that those paths may be necessary for AREVA to proceed on those issues.

At this time, the understood path forward will be a letter from AREVA by July 2, 2010, formally outlining AREVA's understanding and identification of a design information submittal timeline.

It is understood that additional interactions will be necessary in order for AREVA to develop paths forward for those areas still in contention.

At the end of the design certification review process, the NRC staff must be able to conclude that the design meets NRC requirements. The NRC staff encourages the use of innovative design, but also recognizes that the review of such designs demands significantly more resources and takes considerably more time.

At the time of meeting adjournment at 4:30 p.m. (Eastern Time), one member of the public was given an opportunity to interact with NRC staff, and addressed the possible precedent in inter-divisional communications relative to approval of the Combustion Engineering (CE) core protection calculator (CPC). The NRC staff agreed to take that possible design precedent under consideration.

Path Forward

- A letter from AREVA by July 2, 2010, formally outlining AREVA's understanding and identification of a design information submittal timeline
- NRC staff interactions on the identified issues by public meeting, telephone conference, additional, docketed draft information and regulatory audits as necessary.

Follow-up Items

NRC staff agreed to assess design and regulatory aspects of the CE CPC for licensing implications in safety systems.

Questions regarding this meeting can be directed to Michael Canova at 301-415-0737 or at Michael.Canova@nrc.gov.

Sincerely,

/RA/

Michael Canova, Project Manager
U.S. EPR Projects Branch
Division of New Reactor Licensing
Office of New Reactors

Docket No.: 52-020

Enclosures:

1. List of Attendees
2. Key Messages on Digital I&C Design
3. Meeting Slides (ML101820130 and ML101820131)

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ADAMS Accession No.: ML102300529; Pkg.: ML102300579

NRC-001

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NAME	MCanova	JMcLellan	TJackson	GTesfaye
DATE	8/20/2010	8/23/2010	9/2/2010	9/8/2010

OFFICIAL RECORD COPY

List of Attendees

Meeting with AREVA NP to discuss Communications Independence for Digital Instrumentation
and Controls Systems

June 25, 2010

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(Revised 06/23/2010)

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