CCNPP3COLA NPEmails

From: Arora, Surinder
Sent: Wednesday, March 24, 2010 2:41 PM
To: 'Poche, Robert'
Cc: CCNPP3COL Resource; Colaccino, Joseph; Carneal, Jason
Subject: CCNPP Unit 3 - Chapter 4 SER - MAY CONTAIN SENSITIVE PROPRIETARY INFORMATION
Attachments: CCNPP Chapter 4 SER with OI.pdf; CCNPP Chapter 4 UniStar Letter.pdf

Rob,

While the formal hard copy of the transmittal letter and the attached SER is being mailed to you, attached is an advanced copy for your use. Please advise within 10 Calendar days from the date of the letter that the attached SER w/OI's does or does not contain any proprietary or sensitive information.

Thanks.

SURINDER ARORA, PE
PROJECT MANAGER,
Office of New Reactors
US Nuclear Regulatory Commission

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Hearing Identifier: CalvertCliffs_Unit3Cola_NonPublic_EX
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Subject: CCNPP Unit 3 - Chapter 4 SER - MAY CONTAIN SENSITIVE PROPRIETARY INFORMATION
Sent Date: 3/24/2010 2:40:57 PM
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From: Arora, Surinder

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Files	**Size**	**Date & Time**
MESSAGE	570	3/24/2010 2:40:58 PM
CCNPP Chapter 4 SER with OI.pdf	23611	
CCNPP Chapter 4 UniStar Letter.pdf	43086	

Options
Priority: Standard
Return Notification: No
Reply Requested: Yes
Sensitivity: Normal
Expiration Date:
Recipients Received:

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4 REACTOR 4-1

LIST OF FIGURES

No figures were included in this chapter.

LIST OF TABLES

No tables were included in this chapter.

4 REACTOR

This chapter of the FSAR typically contains a summary description of the reactor design, as well as a more detailed description of the fuel system design, nuclear design, thermal-hydraulic design, and reactor materials. It also presents a functional description of reactivity control systems.

4.1 Introduction

This chapter describes the mechanical components of the U.S. EPR and the Reactor Core including the reactor internals, control rod drive, and core support structural materials, fuel system design (fuel rods and assemblies), the nuclear design, and the thermal-hydraulic design. It provides an evaluation and the supporting information necessary to establish the capability of the reactor to perform its safety functions throughout its design lifetime under all normal operational modes, including transient, steady-state, and accident conditions. This chapter also includes information to support the accident analyses.

The staff reviewed the information in the U.S EPR FSAR Tier 2, Chapter 4 on Docket No. 52-020. The results of the staff's technical evaluation of the information related to the reactor incorporated by reference in the COL FSAR has been documented in the staff safety evaluation report (SER) on the design certification application for the U.S. EPR. The Safety SER on the U.S. EPR FSAR is not yet complete. **RAI 222, Question 01-5 is being tracked as an open item** as part of this Chapter. The staff will update Chapter 4 of this report to reflect the final disposition of the design certification application.

4.2 Summary of Application

Chapter 4 of the Calvert Cliffs Nuclear Power Plant (CCNPP), Unit 3 combined license (COL) Final Safety Analysis Report (FSAR), Revision 6 incorporates by reference, with no departures, U.S. EPR FSAR Tier 2, Chapter 4, "Reactor," Revision 1.

4.3 Regulatory Basis

The regulatory basis of the information incorporated by reference is addressed in U.S. EPR FSAR Tier 2, Chapter 4 of the Final Safety Evaluation Report (FSER).

4.4 Technical Evaluation

The U.S. Nuclear Regulatory Commission (NRC) staff reviewed COL FSAR Chapter 4 and checked the referenced U.S. EPR FSAR to ensure that the combination of the information incorporated by reference from the U.S. EPR FSAR and the information in the COL FSAR represents the complete scope of information relating to this review topic. Chapter 4 contains the following sections:

4.1 Summary Description

4.2 Fuel System Design

4.3 Nuclear Design

4.4 Thermal and Hydraulic Design

4.5 Reactor Materials

4.5.1 Control Rod Drive Structural Materials

4.5.2 Reactor Internal and Core Support Structure Materials

4.6 Functional Design of Reactivity Control System

The staff's review confirmed that the information contained in the COL application and the information incorporated by reference from the U.S. EPR FSAR addresses the required information relating to this Chapter.

U.S. EPR FSAR Tier 2, Chapter 4 is being reviewed by the staff under Docket No. 52-020. The staff's technical evaluation of the information incorporated by reference related to Chapter 4 will be documented in the safety evaluation report (SER) on the design certification application for the U.S. EPR design. Currently, there are unresolved requests for additional information associated with the U.S. EPR FSAR safety review.

The staff notes that a COL information item has been requested in an open item in Section 4.3 of the SER on the U.S. EPR FSAR Tier 2, Section 4.3, to address plant specific surveillance of the reactor internals in regard to fluence calculation methodology. The COL FSAR will need to address this COL information item once it is added to the U.S. EPR FSAR Tier 2, Section 4.3. In a letter dated March 12, 2010, the COL applicant stated that when the COL item is added to the U.S. EPR FSAR, the applicable parts of the COL application for CCNPP Unit 3 would be updated to address this additional requirement. The staff cannot make a final determination on the COL FSAR, Section 4.3, until this issue is addressed. The staff has issued a question requesting that the COL applicant address the requirements of the COL information item resulting from open items in the U.S. EPR FSAR review. **RAI 225, Question 04.03-1, is being tracked as an open item.**

The staff also notes that the COL application for the CCNPP Unit 3, Part 7, Item 1.2.6 includes an exemption on the use of M5™ advanced zirconium alloy fuel rod cladding. The staff issued RAI 226, Question 04.02-1 to track the evaluation of this exemption request, which is currently underway, in the review of the COL application. The staff cannot make a final determination on the COL FSAR, Section 4.2, until this issue is addressed. **RAI 226, Question 04.02-1 is being tracked as an open item.**

4.5 Post Combined License Activities

There are no post COL activities related to this chapter.

4.6 Conclusion

The staff reviewed the COL application and checked the referenced U.S. EPR FSAR. The staff's review confirmed that the COL applicant addressed the required information relating to the reactor with the exception of the three open items being tracked as discussed above. The COL applicant is expected to address the outstanding information in the COL FSAR related to this chapter.

March 24, 2010

Mr. George Vanderheyden
President and CEO
UniStar Nuclear Energy, LLC
750 E. Pratt Street
Baltimore, MD 21202-3106

SUBJECT: CALVERT CLIFFS NUCLEAR POWER PLANT, UNIT 3 COMBINED LICENSE APPLICATION - SAFETY EVALUATION REPORT WITH OPEN ITEMS FOR CHAPTER 4, "REACTOR"

Dear Mr. Vanderheyden:

By letter dated July 13, 2007, as supplemented by letters dated August 2, 2007, and December 14, 2007, Calvert Cliffs 3 Nuclear Project and UniStar Nuclear Operating Services, LLC (UniStar) submitted an application to the U.S. Nuclear Regulatory Commission (NRC) for a combined license (COL) for Calvert Cliffs Nuclear Power Plant (CCNPP), Unit 3, pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR) Part 52, "Licenses, Certifications, and Approvals for Nuclear Power Plants." Subsequent to the original application, Calvert Cliffs 3 Nuclear Project and UniStar submitted Revisions 2 through 6 of the CCNPP, Unit 3 Final Safety Analysis report (FSAR) by letters dated March 14, 2008 (Agencywide Documents Access and Management System [ADAMS] ML080780459), August 20, 2008 (ML082390786), March 9, 2009 (ML090850421), and September 30, 2009 (ML092880200).

Based on our review of the application, the staff prepared the enclosed Safety Evaluation Report (SER), ADAMS ML090900183, with Open Items for Chapter 4, "Reactor." Unless otherwise stated in the SER with Open Items, the staff's review was based on Revision 6 of the application. The SER is being provided to support the upcoming meeting of the subcommittee of the Advisory Committee on Reactor Safeguards (ACRS) scheduled to be held in April 2010. The ACRS Full Committee meeting will be held at a later date. Issuance of this SER is an important milestone in the staff's review to determine whether the CCNPP Unit 3 COL application meets the Commission's regulations.

The staff concludes that the enclosed SER does not contain any information for which exemption from public disclosure has been sought or approved. However, the NRC will withhold the enclosed SER from public disclosure for ten calendar days from the date of this letter to allow you the opportunity to verify the staff's conclusion that the SER contains no such exempt information. If within that time, you do not request that all or portions of the SER be withheld from public disclosure in accordance with 10 CFR 2.390, "Public Inspections, Exemptions, Requests for Withholding," the enclosure will be made available for public inspection through the NRC Public Document Room and the Publicly Available Records component of ADAMS. ADAMS is accessible from the Public Electronic Reading Room section of the NRC Web site at http://www.nrc.gov/reading-rm/adams.html.

Document transmitted herewith contains sensitive unclassified information. When separated from the enclosure, this document is "DECONTROLLED."

If you have any questions or comments concerning this matter, I can be reached at 301-415-1421 or via e-mail address at surinder.arora@nrc.gov.

Sincerely,

/RA/

Surinder Arora, Project Manager
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Office of New Reactors

Docket No. 52-016

Enclosure:
As stated

cc: See next page

If you have any questions or comments concerning this matter, I can be reached at 301-415-1421 or via e-mail address at surinder.arora@nrc.gov.

Sincerely,

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Docket No. 52-016

Enclosure:
As stated

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ADAMS Accession Numbers:
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MEMO: ML092310026
SER: ML090900212

NRO-002

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