

CCNPP3COLA NPEmails

From: Arora, Surinder
Sent: Thursday, August 11, 2011 2:30 PM
To: Massie, Wayne A
Cc: Robert.Poche@unistarnuclear.com; Carneal, Jason; CCNPP3COL Resource
Subject: Slides for ACRS Presentation - Chapter 15
Attachments: NRC Slides for Calvert Ch 15 ACRS Presentation 8-18-11.pptx

Wayne,

As promised, here are the presentation slides for Calvert Cliffs Unit 3 Chapter 15 that the staff will use on August 18, 2011.

Please let me know if there are any questions.

Thanks.

SURINDER ARORA, PE
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Created By: Surinder.Arora@nrc.gov

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"Robert.Poche@unistarnuclear.com" <Robert.Poche@unistarnuclear.com>
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Presentation to the ACRS Subcommittee

**UniStar Calvert Cliffs Nuclear Power Plant (CCNPP) Unit 3
COL Application Review**

Safety Evaluation Report

CHAPTER 15: Transient and Accident Analyses

August 18, 2011

Order of Presentation



- **Surinder Arora** – Calvert Cliffs COLA Lead PM
- **UniStar** – RCOL Applicant
- **Jason Carneal** – Chapter 15 PM
- **Technical Staff**

Major Milestones Chronology



07/13/2007	Part 1 of the COL Application (Partial) submitted
12/14/2007	Part 1, Rev. 1, submitted
03/14/2008	Part 1, Rev. 2, & Part 2 of the Application submitted
06/03/2008	Part 2 of the Application accepted for review (Docketed)
08/01/2008	Revision 3 submitted
03/09/2009	Revision 4 submitted
06/30/2009	Revision 5 submitted
07/14/2009	Initial Review schedule milestones published
09/30/2009	Revision 6 submitted
04/12/2010	Phase 1 review completion milestone
12/20/2010	Revision 7 submitted
August 2011	ACRS Sub Committee review complete on Chapters 2 part 1, 4, 5, 6, 8,10, 11,12, 16, 17 & 19

ACRS Phase 3 Review Plan



FSAR CHAPTERS BY COMPLETION DATES

Chapter(s)	Completion Date	Subcommittee Meeting
8	1/6/2010	2/18/2010
4	3/24/2010	4/20/2010
5	3/22/2010	4/20/2010
12	3/19/2010	4/20/2010
17	3/12/2010	4/20/2010
19	4/19/2010	5/21/2010
10	6/11/2010	11/30/2010
11	10/30/2010	
16	10/11/2010	
2 (Group 1)	10/29/2010	1/12/2011
6	4/1/2011	4/5/2011
15	7/22/2011	8/18/2011
1, 2 (Group 2), 3, 7, 9, 13, 14, 18	Various	Future meeting dates to be finalized

Technical Staff Review Team



- ♦ **Michelle Hart**
Reactor Siting and Accident Consequence Branch
- ♦ **Shanlai Lu**
Reactor Systems, Nuclear Performance, and Code Review Branch

Project Managers:

- ♦ **Surinder Arora**
- ♦ **Jason Carneal**

Overview of COLA Review



SRP Section/Application Section		No. of Questions	Number of OI
15.0	Transient and Accident Analysis (excepting Section 15.0.3)	0	0
15.0.3	Radiological Consequences of Design Basis Accidents	0	0
Totals*		0	0

*Note: Totals do not include references to open items in other Sections. Open Item count does not include the Generic Open Item RAI 222, Question 01-5 which was created to track changes to the U.S. EPR Design Certification

Topics of Interest

Section 15.0 – Transient and Accident Analysis

- COL Information Item No. 15.0-1:
- A COL applicant that references the U.S. EPR design certification will provide for staff review, prior to the first cycle of operation, the analysis results demonstrating that the uncompensated DNBR and LPD satisfies the SAFDL with a 95/95 assurance in accordance with ANP-10287P. COL FSAR Section 15.0 states that the analyses results demonstrating that the uncompensated DNBR and LPD satisfies the SAFDL with a 95/95 assurance in accordance with ANP-10287P shall be provided to the NRC staff for review prior to the first cycle of operation.
- Staff Review:
- The staff compared this COL item with the original requirements defined in the safety evaluation report on ANP-10287P. The staff finds that the COL item identified in COL FSAR Section 15.0 is consistent with ANP-10287P. Therefore, the staff finds the identified COL item acceptable.

Topics of Interest

Section 15.0 – Transient and Accident Analysis

- Potential New ITAAC and COL Information Item
- In response to staff RAIs, AREVA has identified the need for COL applicant to provide analysis results demonstrating that the power measurement uncertainty is less than or equal to the estimated value in U.S. EPR FSAR
- These ITAAC and COL items will be required in applicant's COL FSAR submittals in Phase 4
- RAI 222, Question 01-5, which was issued to track changes to the U.S. EPR FSAR and the expected changes to the COL FSAR

Topics of Interest

Section 15.0.3 – Radiological Consequences of Design Basis Accidents



- Review whether appropriate incorporation by reference of the DBA dose analyses from the U.S. EPR FSAR
- Departure to use site-specific short-term atmospheric dispersion factors (χ/Q values) for the low population zone (LPZ)
 - ♦ Site-specific doses at the LPZ calculated for all DBAs
 - Show compliance with LPZ dose factor in 10 CFR 52.79(a)(1)
- All other DBA doses incorporated by reference from the FSAR to show compliance with regulatory requirements
 - ♦ Exclusion area boundary (EAB) - 10 CFR 52.79(a)(1)
 - ♦ Control room - GDC-19
 - ♦ Technical support center (TSC) - dose equivalent to GDC-19

Topics of Interest

Section 15.0.3 – Radiological Consequences of Design Basis Accidents



- Staff finding
 - ♦ CCNPP 3 COL appropriately incorporated by reference the U.S. EPR FSAR DBA analysis of doses at the EAB, control room and TSC.
 - CCNPP 3 site characteristic χ/Q values for the EAB, control room and TSC are bounded by the values given in U.S. EPR FSAR as site parameters
 - CCNPP 3 DBA doses would be less than U.S. EPR DBA doses
 - ♦ U.S. EPR FSAR shows compliance with the EAB, control room and TSC dose factors for all DBAs, therefore CCNPP 3 COL also complies.
 - ♦ Site-specific DBA dose results at the LPZ are based on the U.S. EPR FSAR analyses, excepting only the site-specific inputs (CCNPP 3 LPZ χ/Q s) and also meet the 10 CFR 52.79(a)(1) LPZ dose factor.

Acronyms



- COL – combined license
- COLA – combined license application
- DBA – design basis accident
- FSAR – Final Safety Analysis Report
- GDC – General Design Criteria
- IBR – incorporated by reference
- SER – Safety Evaluation Report
- RAI – request for additional information
- RCOL – reference combined license