PMVogtleCOLPEm Resource

From: Spicher, Terri
Sent: Wednesday, January 27, 2010 8:28 AM
To: wasparkm@southernco.com
Cc: Joshi, Ravindra; Coffin, Stephanie; VogtleCOL Resource
Subject: ACRS Feb 2nd - Chapter 3 NRC presentation
Attachments: chapter 3 ACRS AP1000 COL Feb 2010 rev 1.ppt

Wes,

Attached are the slides the NRC plans to present for Chapter 3 on Feb 2, 2010.

Below are comments on your slides from our Technical Reviewers.

After you have read this material, let me know if we need to set-up a conference call. We feel comfortable with our material.

thanks,
Terri
301-415-1670

Comment 1:

Our slides are more specific for the COL open items for Section 3.9 than the NuStart slides.

NuStart Slide 7 for Chapter 3 lists the Section 3.9 open items. I suggest that NuStart Slide 7 be revised to read as follows:

R-COLA Chapter 3: Open Items

OI 3.9-1 IST Implementation Audit Open Items (DCD OI closure)

OI 3.9-2 ASME OMN-1 Code Case and FSAR Clarification

OI 3.9-3 MOV Testing Program Description

OI 3.9-4 Power-Operated Valve Periodic Testing

OI 3.9-5 Flow-Induced Vibration Monitoring

OI 3.9-6 IST Tech Spec References

Comment 2

I do not understand their first bullet on slide 4:

COL 3.5-1External missile protection requirements
-plant specific external missiles bounded by DCD evaluation

Which COL 3.5-1?

STD SUP 3.5-1 Turbine missiles?
VEGP COL-3.5-1 VEGP Site Parameters?

Which external missiles? If it is only for turbine missiles then it should state this. And turbine missiles are not plant specific.

This bullet needs clarification.

Terri 301-415-1670

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Recipients:
"Joshi, Ravindra" <Ravindra.Joshi@nrc.gov>
Tracking Status: None
"Coffin, Stephanie" <Stephanie.Coffin@nrc.gov>
Tracking Status: None
"VogtleCOL Resource" <VogtleCOL.Resource@nrc.gov>
Tracking Status: None
"wasparkm@southernco.com" <wasparkm@southernco.com>
Tracking Status: None

Post Office: HQCLSTR02.nrc.gov

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Presentation to the ACRS Subcommittee

Standard Content Application Combined License Review

SER/OI Chapter 3

Design of Structures, Components, Equipment and Systems

February 2, 2010

Staff Review Team

- **Technical Staff**
  - **Tze-Jer Chuang**, Sr Mechanical Engineer, Structural Engineering Branch, Division of Engineering (SEB1)
  - **John Honcharik**, Sr Mechanical Engineer, Component Integrity, Performance and Testing Branch 1, Division of Engineering (CIB1/DE)
  - **Yueh-Li Li**, Sr Mechanical Engineer, Engineering Mechanics Branch 2, Division of Engineering (EMB2/DE)
  - **Thomas Scarbrough**, Sr Mechanical Engineer, Component Integrity, Performance and Testing Branch 2, Division of Engineering (CIB2/DE)
- **Project Manager**
  - **Terri Spicher**, Chapter 3, AP1000 Standard Content COL

Overview of COL

		Standard Content Open Items (total)
3.1	Conformance with NRC General Design Criteria	0
3.2	Classification of Structures, Components, and Systems 3.2.1 Seismic Classification 3.2.2 AP1000 Classification Systems	0
3.3	Wind and Tornado Loadings 3.3.1 Wind Loadings	**2**
3.4	Water Level (Flood) Design 3.4.1 Flood Protection 3.4.2 Analytical and Test Procedures	0
3.5	Missile Protection 3.5.1 Missile Protection 3.5.2 Protection from Externally Generated Missiles 3.5.3 Barrier Design Procedures	**1**

Overview of COL

		Standard Content Open Items (total)
3.6	Protection against Dynamic Effects Associated with the Postulated Rapture of Piping	**1**
3.7	Seismic Design	0
3.8	Design Of Category I Structures	0
3.9	Mechanical Systems and Components 3.9.1 Special Topics for Mechanical Components 3.9.2 Dynamic Testing and Analysis of Systems, Structures and Components 3.9.3 ASME Code Class 1,2, and 3 Components, Component Supports, and Core Support Structures 3.9.4 Control Rod Drive System 3.9.5 Reactor Pressure Vessel Internals 3.9.6 Inservice Testing Pumps and Valves 3.9.7 Integrated Head Package	**15**

Overview of COL

		Standard Content Open Items
3.10	Seismic and Dynamic Qualification of Mechanical and Electrical Equipment	0
3.11	Environmental Qualification of Mechanical and Electrical Equipment	1
3.12	Piping Design	0

Overview of Standard Content COL Chapter 3 - Design of Structures, Components, Equipment and Systems

(blue font indicates open item)

FSAR SECTION		SUMMARY OF DEPARTURES/SUPPLEMENTS
3.1	Conformance with NRC General Design Criteria	none
3.2	Classification of Structures, Components, and Systems	STD SUP 3.2-1 seismic classification of safety-related SSCs
3.3	Wind and Tornado Loadings	**STD SUP 3.3-1 the effects of tornado-initiated failures of non safety-related buildings on the neighboring seismic Category I structures**
3.4	Water Level (Flood) Design	none
3.5	Missile Protection	**STD SUP 3.5-1 Probability of turbine missiles from another AP1000 plant in close proximity affecting SSCs** STD SUP 3.5-2 Turbine system maintenance and inspection program

Overview of Standard Content COL Chapter 3 - Design of Structures, Components, Equipment and Systems

(blue font indicates open item)

3.6	Protection against Dynamic Effects Associated with the Postulated Rupture of Piping	**STD COL 3.6-1 A pipe rupture hazard analysis is part of the piping design** STD COL 3.6-4 Leak-before-break piping inspections
3.7	Seismic Design	To be addressed at a later date
3.8	Design of Category I Structures	To be addressed at a later date
3.9	Mechanical Systems and Components	STD COL 3.9-2 Reconciliation of the as-built piping STD COL 3.9-3 Snubber design and testing, instillation requirements, and perseverance and inservice examination and testing STD SUP 3.9-3 Snubber design and testing and snubber installation requirements **STD COL 3.9-4 IST Program** STD COL 3.9-5 Pressurizer surge line monitoring

Overview of Standard Content COL Chapter 3 - Design of Structures, Components, Equipment and Systems

(blue font indicates open item)

3.10	Seismic and Dynamic Qualification	none
3.11	Environmental Qualification of Mechanical and Electrical Equipment	**STD COL 3.11-1 Equipment Qualification File**
3.12	Piping Design	none

Open Items
Standard Content AP1000 COL

STD SUP 3.3-1: the effects of tornado-initiated failures of non safety-related buildings on the neighboring seismic Category I structures

- Two potential effects:
  - OI 1: Metallic Siding Missiles
  - OI 2: Water Tank Missiles

Open Items
Standard Content AP1000 COL

OI 1: Metallic Siding Missile

Metallic siding of turbine and radwaste buildings need to be evaluated as a potential wind-borne missile against seismic category I structures.

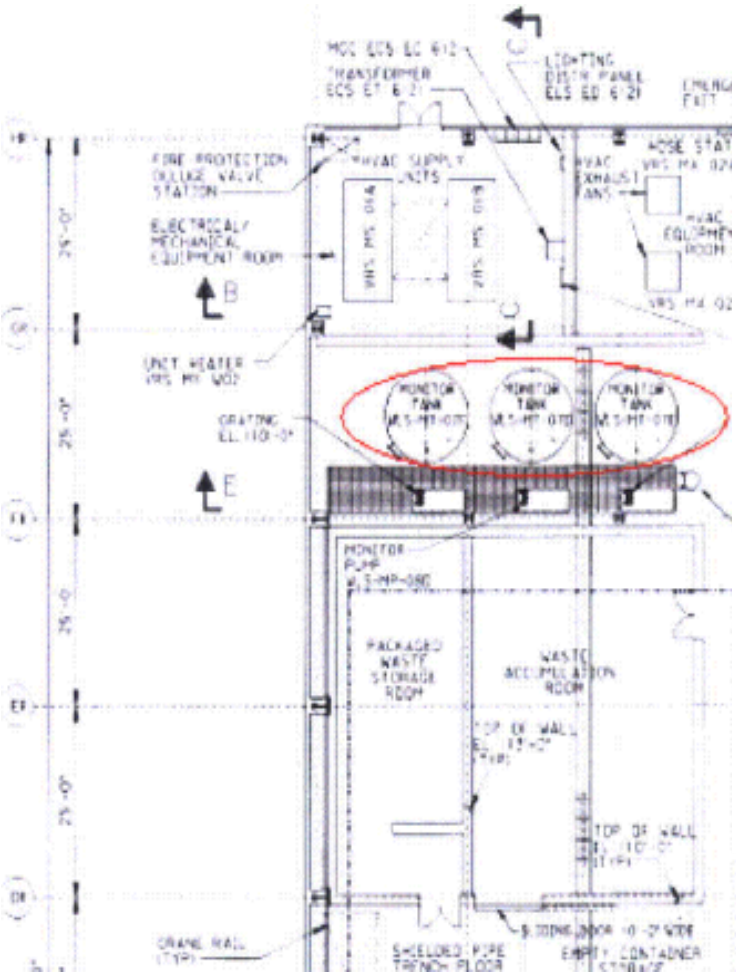
Planned Resolution: This analysis is pending in the DCD as open item OI-RAI-SRP3.3.2-SEB1-01.

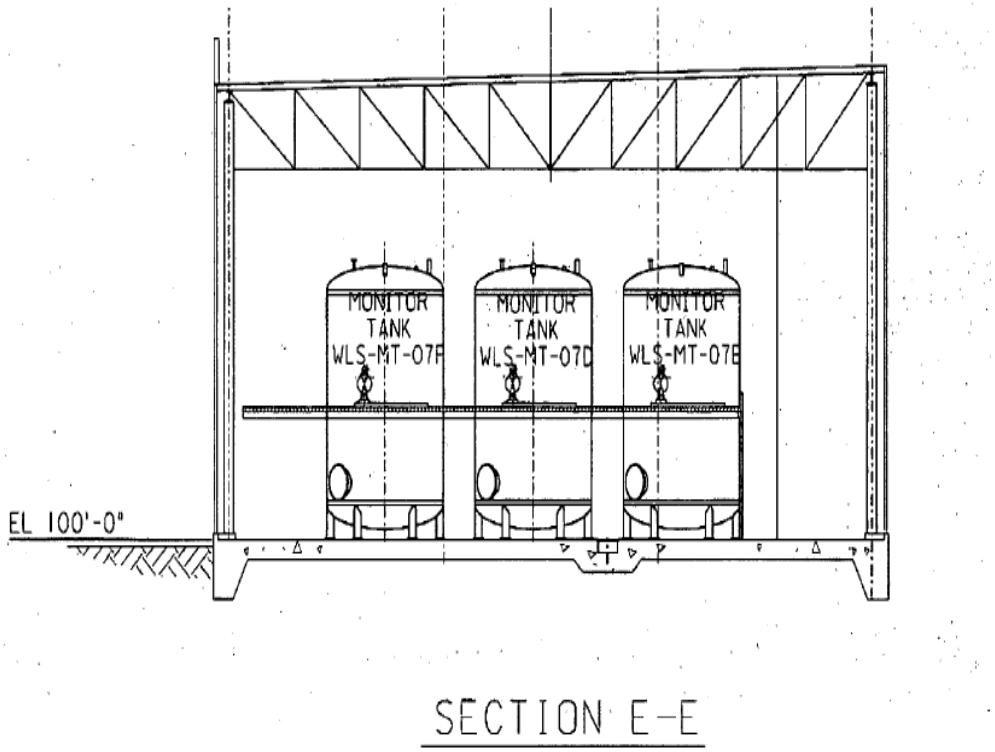
Planned Resolution: COL verify site specific conditions are bounded by:

(1) AP1000 DCD Sections 3.3 and 3.5

(2) Wind-born metallic sliding missile evaluations

OI 2: Water Tank Missile





Open Items
Standard Content AP1000 COL

0I 2: Water Tank Missile

Water tanks in radwaste building needs to be evaluated as a potential wind-borne missile against seismic category I structures.

Planned Resolution: This analysis is pending in the DCD as open item OI-RAI-SRP3.3.2-SEB1-02.

Planned Resolution: COL verify site specific conditions are bounded by:

(1) AP1000 DCD Sections 3.3 and 3.5

(2) Water tank missile evaluations

Open Items
Standard Content AP1000 COL

STD SUP 3.5-1: Probability of Turbine Missiles from Co-located AP1000 Plants

0I 1: Two AP1000 units co-located side-by-side are unfavorably orientated. Bounding turbine missile probability analysis in Section 10.2.8 of the AP1000 DCD FSAR meets RG 1.115 guidance ($P_1 > 1 \times 10^{-5}$ per year)

<u>Resolution:</u> AP1000 DCD Open Item OI-SRP10.2.3-CIB1-01 was resolved since bounding turbine missile probability analysis is applicable to high and low trajectory missiles for unfavorably orientated TGs for co-located AP1000 units.

Open Items
Standard Content AP1000 COL

STD COL 3.6-1: A pipe rupture hazard analysis is part of the piping design

- OI 1 - Action to be addressed by DCD: As-designed pipe rupture hazard analysis report completed. Pending DAC completion.

- Planned Resolution - If current DCD open item is not closed, the applicant needs to modify License Condition 3.6-1 to include additional tasks. Revise the implementation milestone for the License Condition addressing the as-designed pipe rupture hazard analysis report to allow coordination of activities with the NRC construction inspection program following the issuance of the COL such that the analysis would be made available to verify the design was completed in accordance with the regulations and DCD prior to fabrication and installation of the piping and connected components.

Open Items
Standard Content AP1000 COL

STD COL 3.9-4: IST Program

AP1000 SER Section 3.9.6

01: October 2008 audit follow-up items need to be resolved:
- Reference ASME QME-1-2007 in DCD Section 3.9
- Clarify basis for gate and globe valve seat friction coefficient
- Clarify vendors need to satisfy QME-1-2007
- Resolve RAI response and check valve piping diagram

Planned Resolution: As indicated during discussions between Westinghouse and NRC staff, design specifications and AP1000 DCD will be revised as necessary with planned NRC follow-up audit

Open Items
Standard Content AP1000 COL

02: Motor-operated valve (MOV) testing needs to be consistent with Joint Owners' Group (JOG) Program on MOV Periodic Verification

Planned Resolution: DCD Section 3.9.6 will be revised to be consistent with static and dynamic testing provisions in JOG MOV program

03: ASME QME-1-2007 not referenced in DCD Section 3.9

Planned Resolution: DCD Section 3.9.3 will be revised to reference ASME QME-1-2007 for valve qualification

Open Items
Standard Content AP1000 COL

04: DCD reference to ASME Code Case OMN-1 should indicate revision accepted in Regulatory Guide (RG) 1.192, or justify alternative to ASME OM Code

Planned Resolution: DCD Section 3.9.6 will be revised to discuss use of OMN-1 Code Case accepted in RG 1.192

05: Tech Specs need to be consistent with ASME OM Code

Planned Resolution: AP1000 Tech Specs will be updated to be consistent with OM Code

Open Items
Standard Content AP1000 COL

06: DCD should describe check valve acceptance criteria for flow testing consistent with RAI response

Planned Resolution: DCD Section 3.9.6 will be revised to describe check valve IST acceptance criteria and use of mechanical exercising for 2 check valves

07: Note 31 to DCD Table 3.9-16 is not consistent with JOG MOV Program, and Section 3.9 does not discuss power-operated valve program attributes in Regulatory Issue Summary (RIS) 2000-03

Planned Resolution: DCD will be revised in Note 31 to be consistent with JOG Program, and in Section 3.9 to address RIS 2000-03 attributes for successful POV testing program

Open Items
Standard Content AP1000 COL

08: RAI response should be clarified regarding performance of position verification testing specified in ASME OM Code ISTC-3700 in addition to exercise testing

Planned Resolution: DCD Section 3.9.6 will be revised to clarify that valves will satisfy applicable valve exercise testing requirements in addition to position verification testing

09: Several valve-specific items in DCD Table 3.9-16 need to be clarified

Planned Resolution: DCD Table 3.9-16 will be revised to clarify valve testing provisions (such as specification of valve functional testing in addition to Appendix J leakage testing for applicable valves)

Open Items
Standard Content AP1000 COL

COL SER Section 3.9.6

01: October 2008 audit follow-up items need to be resolved

Planned Resolution: From Reference COL applicant and NRC staff discussions, any necessary additional information will be provided after resolution of audit follow-up items

02: Motor-Operated Valve (MOV) provisions in COL FSAR need to be clarified

Planned Resolution: Specific ASME OMN-1 Code Case revision will be determined with Code alternative justification if necessary, and FSAR language will be verified to be consistent with AP1000 DCD planned changes

Open Items
Standard Content AP1000 COL

03: COL FSAR needs to provide a full description of MOV testing program (such as addressing application of OMN-1 Code Case, determination of MOV operating requirements and output capability, periodic demonstration of design-basis capability, justification for extended test intervals, and successful completion of MOV acceptance criteria)

Planned Resolution: Westinghouse response to related AP1000 open item will be reviewed and supplemented to resolve COL open item

Open Items
Standard Content AP1000 COL

04: COL FSAR needs to provide a full description of Power-Operated Valve (POV) testing program

Planned Resolution: FSAR changes (such as specifying periodic dynamic testing if required based on valve qualification or operating experience) planned to provide full POV program description when combined with AP1000 DCD changes

Open Items
Standard Content AP1000 COL

05: RAI response on implementation of AP1000 DCD provisions to monitor flow-induced vibration (FIV) effects should be clarified

Planned Resolution: Implementation of AP1000 DCD provisions for monitoring FIV effects will be clarified

06: Tech Specs in COL application need to be consistent with ASME OM Code

Planned Resolution: Tech Specs will be revised to be consistent with OM Code

Open Items
Standard Content AP1000 COL

STD COL 3.11-1: Environmental Qualification Program

AP1000 SER Section 3.11
01: Resolve Audit follow-up items per Section 3.9.6

COL SER Section 3.11
01: Resolve Audit follow-up items for transition from initial EQ program to operational EQ program