

Seabrook Concrete Degradation

REGION I ENGINEERING BRANCH NO. 1 (EB 1)
Seabrook Concrete Degradation & Implications to Part 50 and 54
September 8, 2011
3:00pm to 4:00pm

Conference Call Logistics: 888-469-0695; Pass ID is (b)(6) (10 lines available ½ hr. before)

Objectives (Purpose):

1. To communicate status of alkali-silica reaction problem and current timeline of NextEra's activities for the problem in safety related seismic category I structures.
2. Provide a status on pending Task Interface Agreement and Related Inspection planned for the week of September 26, 2011.
3. Provide a preliminary set of goals for the next six months – March 2012.

Success Criteria (Potential Outcomes):

1. Enhanced understanding of the topics discussed (communications is the key).
2. All input and views obtained in order to get the issues addressed with final decisions reflected in the action plan.
3. Midcourse corrections welcomed.
4. Track new actions remaining to be done for the documents to be issued.

Agenda (Process):

- (5 min) Overview (check alignment on purpose and success)
- (10 min) Plant Status, ASR Project Status, Recent Timeline
- (10min) Development in Other Areas (Hearing, Public, DEIS, Commission)
- (10 min) Aging Effect - DLR Review of Recent Response of 8/11/11
- (10 min) Operability - Overview of TIA – Planned Follow-up Inspection
- (5 min) Goals for Next Six Months
- Time Left) Q&As and Review/Critique

See Attendees, Decision and Actions at the end of the Talking Points

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TALKING POINTS

- (5 min) Overview (check alignment on purpose and success)

Are there any questions related to purpose of this conference and what we hope to get out of it?

- (10 min) Plant Status, ASR Project Status, Recent Timeline

Plant Status

Bill Raymond confirm plant at 100% power or explain any recent trips or down-powers, outages

No planned outages

Time Line

Update on the time line is attached – note developments since last executive brief.

Summary of Latest developments are:

1. Two URIs issued in quarterly resident report (05000443/2011003):
 - a. -02, on inadequate 50.59 screening to accept conditions of reduced compressive strength and modulus of elasticity for the control building
 - b. -03, on open Prompt Operability Determinations (PODs) for the Control Building and other buildings involved in an extent of condition review
2. RAI Response of 8/11/11 doesn't give details on ASR Project Plans – has a “planned action” to update OD as necessary and as information comes in.

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ASR Project Status (NextEra's actions based on status call of 9/7/11):

Safety evaluation for item -02 URI should be ready for review the week of 9/26.

Many plans should be finalized by the week of 9/26 in order to identify the path to final ODs.

Delayed on building initial assessments

- process has started
- primary containment and control building are done,
- containment enclosure building (CEB) to be done by December 2011
 - there is some indication that the CEB may be the build most affected by ASR
- some buildings have two phases: I to look uncoated conditions for internal rooms and II erect scaffolding and remove coatings to examine surfaces.

[Initial assessments appear to be key to next steps of core sampling and parameters to be obtained.]

EC issued for additional samples (~18) on control building – actual coring to start week of Oct 3 and last perhaps a month so – Dec 2011?

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TALKING POINTS

- (10min) Developments in Other Areas (Hearing, Public, DEIS, Commission)

Nothing on Hearings

August 2011, C-10 Inquiry on ASR issue, provided MIT papers on concrete issues

Once TIA is issued, it will be forwarded to EDO coordinator for forwarding to Commissioner TAs

DLR Preparing for DEIS Meeting 9/15/11 – Conte and Raymond will support

- (10 min) Aging Effect - DLR Review of Recent Response of 8/11/11

Raj Auluck – next steps

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TALKING POINTS

- (10 min) Operability - Overview of TIA – Planned Follow-up Inspection

TIA to be issued shortly – agreement achieved between technical staffs

Inspection planned for week of 9/26/11 with Modes, Chaudhary, Thomas, Sheikh, and Erickson.

Preliminary Objectives of the Inspection is to (note each item and ask for input):

1. Ensure no adverse conditions or information exists that detracts from NextEra's reasonable expectation from the evidence collected that the affected structures can perform their safety function [high degree of confidence based on current knowledge and information and in contrast to absolute assurance].
2. Obtain status on the URIs 2011003-02 and -03 based on NextEra schedules and finalized/approved plans.
3. Identify any additional information NextEra plans to obtain to validate and support the final operability determination and assess the adequacy of those plans.

Tentative Scope of Review (details not to be discussed – thought process right now):

1. Walk-down key areas for the benefit of the NRR representatives and, if time permits, observe/ review actual performance of initial assessments of a building during the course of the inspection.
2. Conduct interviews and discussions with NextEra Personnel on the subject questions from the TIA, with the POD and associated documentation for the Control Building as a test case (primarily support NRR in obtaining the information they need in order to support the TIA)
 - a. Independently assess, if time permits, the adequacy of the full walk-downs with their new structures monitoring program IAW ACI 349 (latest 2002). NOTE: these walk-downs are tied to getting core samples in the other buildings (beyond the Control Building for a full extent of condition assessment of other buildings that may have evidence of ASR – a corrective action to the NCV on Maintenance Rule.
3. Review the completed/approved initial assessment of the control building with NRR representatives – obtain similar information on the other completed initial assessments for the primary containment (crazed cracking issue) – obtain schedule of completion for all affected in-scope buildings for the initial assessments (expected to be completed December 2011).
4. Review NextEra finalized/approved criteria related to how initial assessment results are converted to a decision to look for ASR by new or additional core sampling.

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5. Review finalized/approved plans and locations for additional core sampling for the control building along with schedule of completion (additional cores start the week of 10/3/11) – do we need to observe ???
6. Independently confirm ASR as the degradation mechanism and assess other potential degradation mechanism to the extent possible based on discussions and review of records including laboratory reports.
7. Independently review any reports or assessments (internal & external) dealing with concrete issues from construction time period. Start with one building (control building) and assess need to look at other buildings and for the period beyond the construction timeframe. Example reports include: concrete mix design and production specification, compressive strength test reports; quality control reports include nonconformance report or audits associated with concrete mixing, pouring, and testing.
8. Overall, conduct interviews, review completed/approved inspection and test records, and/or other finalized/approved planning documents (such as purchase orders, schedules, work instructions, implementing procedures) and assess any obstacles to the timely completion of the final operability determinations for the control building and other structures affected by ASR (worst case building may be an example for a bounding analysis and how representative is it).
 - a. Ensure NRR representative have or will have (identify transmittal mechanism such as Certrec) all necessary information in order to answer the TIA in 90 days from when that information is obtained.
 - b. Identify need to add inspector observations or reviews to this inspection for the weeks after Sept. 26
 - c. Ensure shortcomings noted by NRC staff will be addressed by the licensee in CR process at least for evaluation and need to resolve.
 - d. Independently assess how closely connected the engineering evaluation of March 2012 is to the final operability determinations.
 - e. Outbrief at the end of the week should be focused potential findings, if applicable, substantially new facts obtained for ASR issue, shortcomings that are noted in CR/ARs, Open questions or issue of concern.
9. When should Modes/Conte interview Engineering Manager and Site Vice President?

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TALKING POINTS

- (5 min) Goals for Next Six Months – March 31, 2012

NextEra remains firm on the completion of the ASR Engineering Evaluation for March 2012

Hydrology study to be completed in December 2011

Status call suggests that final ODs are possible for beforehand – talked about obtaining tensile strength information [NOT before January 2012]

Final ODs are delayed beyond September 30, 2011.

Goals for NRC staff wrt ASR issue [additional TIAs may be needed(*)]:

1. Ensure NextEra progress on final ODs as evidence by:
 - a. *Completed ODs before January 2012 OR
 - b. Appropriately update ODs with a clear path to resolution for which the NRC agrees before March 2012
2. *Review Hydrology study – solicit HP advise
3. Review as PIR sample the apparent cause for MR violation - in Fall 2011
4. Review as IPIR sample the root cause of ASR issue in February 2012 – [it appears to be key input to the engineering evaluation]
5. Issue stand alone report on interim status with clear messages by TBD (January 15, 2012) – per objectives and scope of review outlined above
 - a. *Need to establish criteria for final OD review (potential branch technical position or interim staff guidance in the area of license renewal)
 - b. *Application of criteria to control building
 - c. *Expansion of review to extent of condition buildings
 - d. Better understand any connection between ODs and Engineering Evaluation
6. Start planning review of Engineering Evaluation and potential impact on
 - a. Part 50 Operability
 - b. Part 54 Aging Effect
 - c. Need for addition 71002 LRI on ASR aging management program
 - d. ???? others
7. Be ready to respond to what if's:
 - a. Contentions
 - b. Demonstrations
 - c. Public meetings surrounding the ASR issue – DEIS Sept 15, 2011
8. Others ????

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TALKING POINTS

- (Time Left) Q&As and Review/Critique

Open Forum for review and Q&As

Actions from conference call:

Critique (revisit purpose and success)

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Attachment – Updated Timeline

Background – where we were - Seabrook Concrete ASR Issue

June 2009	Walkdowns as part of license renewal application preparations
June 1, 2010	License Renewal Application (LRA) received
July 21, 2010	LRA found acceptable for docketing, opportunity for hearing
October 2010	License Renewal Audit results pointed to need for a good number of requests for additional information in this area (conference calls with Region I and DLR started discussion on need to regularly communicate at the branch and division levels, one more frequently than the other)
Fall 2010	Immediate and Prompt Operability Review (POD) based on core samples taken in Control Building (August 2010)
December 31, 2010	End of resident quarterly report period – POD reviewed – Inspection Report 05000443/2011002, issued Feb. 2011 on POD – No findings noted since laboratory results determined compressive strength and modulus of elasticity met UFSAR values (degradation into reserve strength NOT design margin)
February 15, 2011	ASLB Memorandum and Order (several issues accepted for hearing – not associated with the concrete Issue)
March 31, 2011	End of resident quarterly report period – POD reviewed – Inspection Report 05000443/2011002, issued May 12, 2011, with two violations in the structures monitoring area wrt 50.65 a(1) and b(2)
April 8, 2011	Last day of License Renewal Inspection (IP71002) – Inspection Report 05000443/2011007 issued May 19, 2011 and notes in cover letter: "Except for Structures Monitoring Program, results support a reasonable assurance determination for license renewal.
May 8, 2011	Last Executive Brief
May 26, 2011	DLR coordinated ASR seminar in headquarters
June 2011	Status Calls with NextEra revealed change in plans Control Building (CB) POD is on hold for final 9/30/11 <ul style="list-style-type: none">- Extent of condition review was to finalize CB POD Extent of Condition Building review has new POD open pending 9/30/11 <ul style="list-style-type: none">- Compressive strength going up for extent of condition review (different labs involved)

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- Modulus of elasticity degraded but not as bad at Control Building.
- NextEra digesting DE questions and DLR RAI questions

June 29, 2011

RAI issued by DLR - extensive questions on three major areas (structure monitoring, spent fuel pool, containment concrete)

June 30, 2011

End of quarterly resident report period – related URIs/NCV (green) raised Inspection Report 05000443/2011003, issued August 12, 2011

- open PODs;
- 50.59 screen issue;
- NCV (green) on timely Initial and Prompt ODs for results on extent of condition review for other buildings
- another NCV (green) issued related to the adequacy of the OD, unrelated system

August 11, 2011

NextEra Response to RAI dated June 29, 2011 – under DLR review
ASR Project Plans not specific

See next timeline of core samples (input from resident inspectors)

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Timeline for CB Operability Determination EOC Cores – 5 Buildings

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DATE	ACTIVITY
Aug-10	CB / ET test results & petrographic analysis complete - confirm ASR
Sep-10	CB / CT POD & C-S-1-10150 - operable
12/3/10	Quote from Altran for QA and SGH for Lab Testing
12/9/10	Issue EC for Coring & PRT
12/10/10	Quote from Miller Engineering for Cores & PRT
12/20/10	Submit to PRB for Request Funds (CAR)
1/7/11	Contract to Miller for Cores & PRT
1/19/11	PRB approves funding
Jan-11	Prepare WO for cores and develop work schedules
Jan-Feb 2011	Miller clearance, badging & training for site access
2/10/2011	Issue contract to Altran (QA) and SGH (Lab)
2/15/2011	Start inplant coring
2/17/2011	4 RCAW cores to SGH for petrographic and physical testing
3/7-25/11	License Renewal Inspection
3/15/2011	Complete coring in all buildings
3/17/2011	Initial transfer of 16 cores to SGH - Tritium concerns cause 3 week delay
3/20/2011	Send core sample to GEL lab for tritium analysis
3/31/2011	Approve Miller Engineering PRT report
4/1/2011	Approve GEL report of tritium analysis
4/1/2011	Start OR14
4/4-8/11	License Renewal Inspection
4/7/2011	Deliver 16 cores to SGH
4/21/2011	AR1644074 - CEB low modulus
4/25/2011	EC250348 / Calc C-S-1-10156 - CEB integrity intact / OPERABLE
5/23/2011	End OR14
5/27/2011	Receive draft SGH report physical testing (not peer checked, QA cert'd)
6/16/2011	Initial vendor certified test data (EFW, EV, EDG) available to NextEra
6/27/2011	AR1664399 - low modulus 4EOC buildings - SM expectation OPERABLE
6/28/2011	EC250348 / Calc C-S-1-10160 & POD for AR1664399 - Buildings Operable
6/30/2011	Comitment to NRC to complete Control Building OD EOC Reviews
7/1/2011	Receive SGH draft report - petrographs (dated 7/1/11)
7/14/2011	Approve SGH petrograph report
8/3/2011	Approve SGH report (compressive strength & modulus) dated 7/27/11