NextEra Drop-In with Division of License Renewal (DLR), Division of Operating Reactor Licensing (DORL), and Division of Engineering (DE)

Location: NRC Headquarter, One White Flint (O9B4)

Date: March 29, 2016

Attendees:

NextEra Seabrook - Dean Curtland (Site Vice President), Michael Collins (Director of Engineering), Larry Nicholson (Director Fleet Licensing), Ken Browne (ASR Project Manager), Michael Ossing (Licensing Manager)

NRC - Chris Miller (DLR Director); Russell Chazell (DLR Technical Assistant); Tam Tran (DLR Project Manager); Paul Krohn (DORL Deputy Director (acting)); Ross-Lee, Mary Jane (DE Deputy Director); Yoira Diaz-Sanabria (Project Branch 1 Chief); Brian Wittick (RASB Branch Chief); Mel Gray and Fred Bower (Branch Chiefs, Region 1); Robert Gladney (DORL Project Manager); Doug Broaddus (DORL Branch Chief).

Summary

- The purpose of the drop-in was for NRC management to receive feedback on the progress of and path-forward for various activities associated with the management of alkali-silica reaction (ASR) issues at Seabrook Station both for current licensing basis and for license renewal, as provided by NextEra in its presentation (Attachment).
- Regarding license renewal, NextEra indicated that it has a project to address the staff concern for a comprehensive Aging Management Program (AMP) that will bound the station's monitoring efforts for ASR effects for extended operation and that is addressing the current management of ASR issues for operation (regarding ongoing operability determination). The AMP is supported by a methodology that is expected to be contained in a future license amendment request (LAR). NextEra indicated that the development of this AMP is on track and the applicant understands that the staff will conduct a Category 1 public meeting in April 2016 (after a 10 days public meeting notice) to discuss the pending issuance of requests for additional information (RAIs) in May 2016 regarding ASR AMPs.
- The NRC staff communicated that the only remaining issues for the License Renewal SER are the closure of the ASR open item and the response to Interim Staff Guidance (ISG) on buried piping. With respect to the final SER with no open items, the main issue to be addressed is the ASR issue. The draft micro crack RAI was provided to NextEra on March 28, 2016, and the draft macro crack and building deformation RAI will be available mid-April. Consistent with RIS-14-06 "Consideration of Current Operating Issues and Licensing Actions in License Renewal," the staff will need to review the license amendment for impacts to the ASR Aging Management Program. NextEra anticipates that its enhanced communication (e.g., support of staff audit/inspections, integrated project communication with DORL and DLR, etc.) and presented timeline on ASR activities (Attachment) will aid the staff in its efficient review for the completion of the license renewal action.

- The NRC staff further stated that the ASR RAIs being developed are based on the acceptance criteria in the staff standard review plan for license renewal (NUREG-1800). In addition, the NRC staff stated that future ASR activities (e.g., walk down) may result in a development that could impact the AMP, for which the staff would need further review.
- Regarding the upcoming LAR submittal, NextEra indicated that it plans to submit the LAR to demonstrate that American Concrete Institute (ACI) code acceptance criteria are met for ASR-affected structures at Seabrook and to support the ASR-related AMP. As shown on the NextEra presentation (Attachment), NextEra plans to request a public pre-submittal meeting for the upcoming LAR, to occur in late May or early June 2016, and plans to submit the LAR in July 2016. The pre-submittal meeting will provide information on the content and schedule of the upcoming LAR, which is expected to request a change to a method of evaluation described in the FSAR for demonstrating that ACI code acceptance criteria are met for ASR-affected structures at Seabrook.
- The NRC staff stated that it would need to receive and review the LAR in order to determine the review schedule, and whether its complexity is expected to extend the review beyond the normal 1-year period. NextEra indicated that it does not expect to have risk-informed information submitted in the LAR, which would make the review more complex.
- The NRC staff emphasized that integrated licensee communication with all involved NRC staff will be key throughout the LAR review (including the RAIs, public meetings, and the LAR review). The NRC staff also expressed that audits may be utilized.
- The NRC staff stated that it intends to make the meeting summary for this drop-in, including the attached NextEra presentation, publicly available in ADAMS. NextEra agreed that the presentation is suitable for public disclosure and contains no proprietary information. In addition, there will be opportunities for the public to receive more information about the Seabrook activities in upcoming public meetings between NRC and NextEra.

Attachment
NextEra Energy Presentation
Seabrook Station, Unit 1
March 29, 2016

NextEra Energy Seabrook Station

ASR License Amendment Request Overview

March 29, 2016

The foundation for everything we do are the Values and Core Principles of our Nuclear Excellence Model

Nuclear Excellence Model

Vision

We are a team that delivers consistent excellent performance

Mission

We will produce energy in a safe, reliable, cost effective way, while caring for our employees, communities and the environment

Values

- Conduct all activities to demonstrate a deep respect for Nuclear Safety
- Live the Safety Guiding Principles
- Be a Self-Improving Culture & Learning Organization
- Maximize the time spent on Prevention and Detection to minimize / eliminate Correction activities
- Foster a work environment where we are the employer of choice

Core Principles

- Operationally Focused
- Passion for Excellence
- Engaged Leaders
- Standardized Processes
- Responsive to Stakeholders
- Effective Workforce Planning
- Engaged Employees
- Effective Long-Range Planning
- Strong Teamwork
- Strong Ownership & Accountability
- Effective Supervisors
- Work/life Balance

Strategic Focus Areas

Operational Excellence

Organizational Effectiveness

Generation Reliability

Effective Business & Financial Performance

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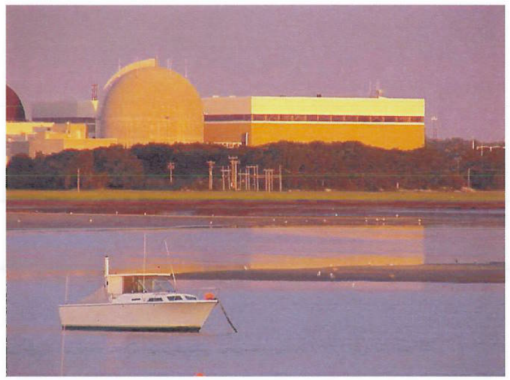
Seabrook is one of the newest plants in the United States and was acquired by NextEra Energy in 2002

Seabrook at a Glance

- **Began commercial operations in 1990**
  - Initial operating license until 2030
  - 20-year license extension (2030-2050) in progress
- **INPO Excellence Rating for eight-consecutive rating periods (16 years)**
- **Record run leading into the latest refueling (525 days)**
- **Approximately 520 permanent employees**
- **ISO 14001 compliant**



Seabrook Station provides approximately half of the electricity for New Hampshire, which is enough clean, reliable power for 1.2 million homes

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Seabrook Participants

- Dean Curtland – Site Vice President
- Michael Collins – Director of Engineering
- Larry Nicholson – Director Fleet Licensing
- Ken Browne – ASR Project Manager
- Michael Ossing – Licensing Manager

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Topics

- Status of University of Texas Testing activities
- Schedule to submit LAR to reconcile licensing basis for ASR
- Schedule of monitoring activities going forward
- Schedule for ASR Aging Management Plan revision
- License Renewal path forward

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License Amendment Request

- LAR will request a change to method described in Seabrook UFSAR for demonstrating code acceptance criteria are met
- Method changes to address ASR
  - Testing justifies that ASR-affected structures can be analyzed using original design properties and code provisions
  - Structural analysis evaluates adequacy of structures with consideration of deformation due to ASR-induced expansions

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Need for License Amendment

- Codes are for design and do not address degradation mechanisms such as ASR
- Codes require
  - Structures to be designed to resist all applicable loads
  - Consideration be given to the effects of forces due to prestressing, shrinkage, creep, etc.
- Original design analyses considered forces such as creep, shrinkage, etc. were negligible
  - ASR expansion results in an internal stress that is not negligible
- LAR will allow Seabrook to incorporate ASR-induced deformation and its effect into the UFSAR

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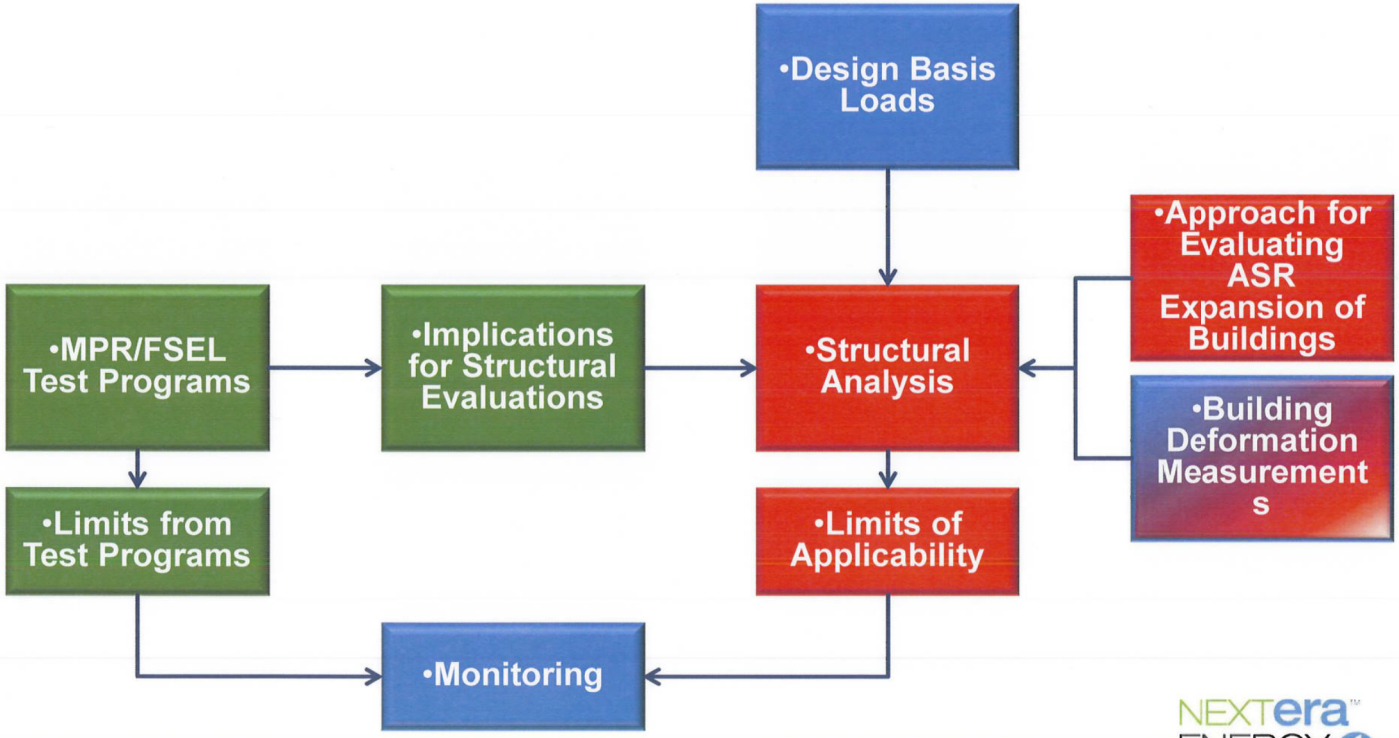
Approach for Addressing ASR at Seabrook Station



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LAR Content

Major content of LAR:

- Technical Evaluation of proposed UFSAR changes
  - Testing
  - Analyses to assess impact of ASR (capacity and deformation)
  - Monitoring plan with commitment
    - Limits from test programs
    - Limits of applicability from structural evaluations (approach)
- Markup of affected UFSAR pages

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LAR Supporting Documents

- Documents to be submitted with LAR
  - Implications of Large-Scale Test Program Results for Addressing ASR at Seabrook Station
  - Seabrook Structural Design Criteria - Supplement for the Impact of Alkali-Silica Reaction
- Documents available at time LAR is submitted
  - CEB structural analysis including effect of ASR
- Analyses to be completed in parallel with NRC review of LAR
  - Susceptibility evaluations
  - Structural analyses for other than CEB

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License Amendment Request

- LAR will request a change to method described in Seabrook UFSAR for demonstrating ACI 318-71 acceptance criteria are met
- Method changes to address ASR
  - Testing justifies that ASR-affected structures can be analyzed using original design properties and provisions in ACI 318-71
  - Structural analysis evaluates adequacy of structures with consideration of deformation due to ASR-induced expansions

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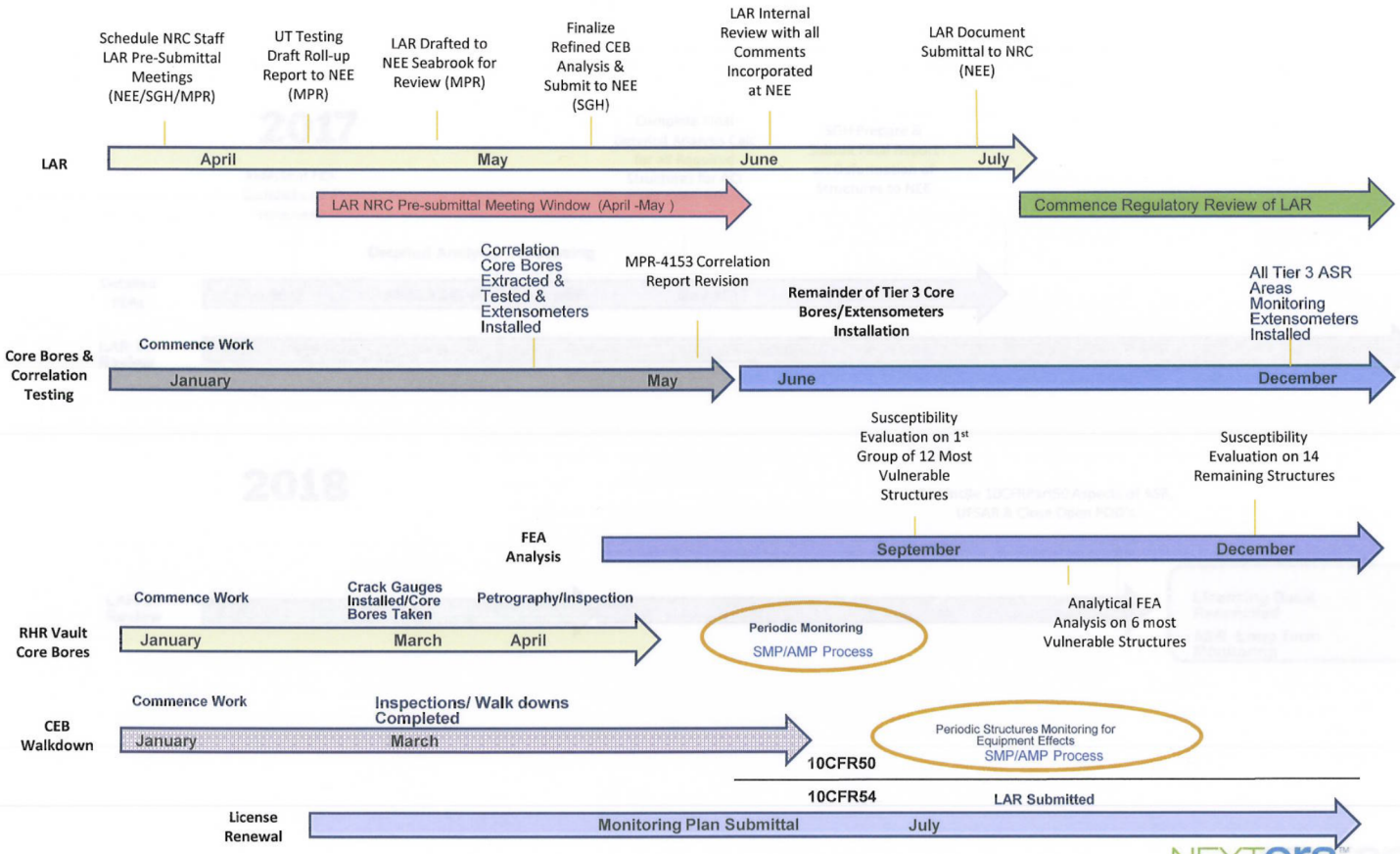
Seabrook Alkali Silica Reaction Issue Timeline 2016



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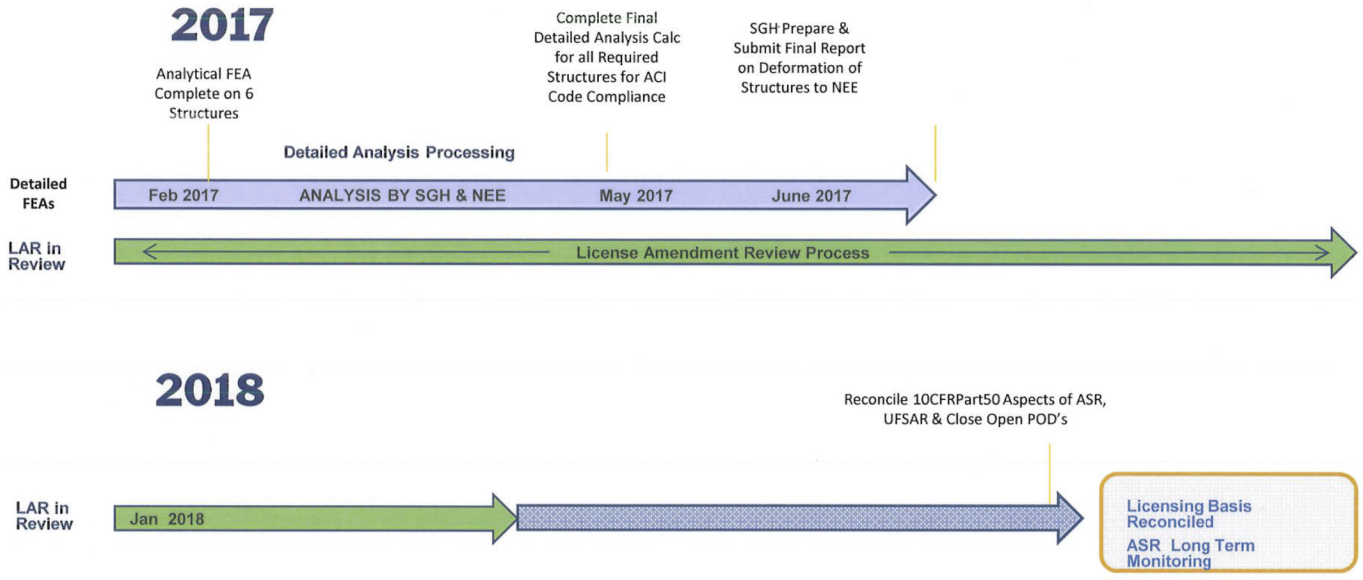
Seabrook Alkali Silica Reaction Issue Timeline 2017-2018



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