

September 21, 2012

**UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION**

Before the Atomic Safety and Licensing Board

In the Matter of	)	
	)	Docket No. 50-443-LR
NextEra Energy Seabrook, LLC	)	
	)	ASLBP No. 10-906-02-LR
(Seabrook Station, Unit 1)	)	

**NEXTERA’S ANSWER OPPOSING ADMISSION OF  
CONTENTION CONCERNING ALKALI-SILICA REACTION**

**I. INTRODUCTION**

Pursuant to 10 C.F.R. § 2.309(h)(1), NextEra Energy Seabrook, LLC (“NextEra”) hereby answers and opposes admission of the newly proposed contention concerning its program to manage aging effects associated with alkali-silica reaction (“ASR”) (“the ASR Contention”)<sup>1</sup> submitted by Friends of the Coast and the New England Coalition (“FOTC/NEC”) on August 27, 2012 in the license renewal proceeding for Seabrook Station, Unit 1 (“Seabrook”). The ASR Contention should be rejected because it is untimely and fails to meet NRC standards for admissibility. The aging management program for ASR was submitted and available in May 2012, so at the latest, any challenge to its adequacy should have been brought three months ago. Further, FOTC/NEC’s claims are unsupported by any facts, expert opinion, or other information raising a genuine dispute with the adequacy of this program. FOTC/NEC purport to rely on NRC Staff statements made during a July 2012 ACRS subcommittee meeting, but those statements neither support FOTC/NEC’s claims nor provide any excuse for their tardiness.

---

<sup>1</sup> Friends of the Coast and New England Coalition’s Motion for Leave to File a New Contention Concerning NextEra Energy Seabrook’s Amendment of its Aging Management Program for Safety-Related Structures (Aug. 27, 2012) (“Motion”).

ASR is a type of alkali-aggregate reaction that can degrade concrete structures.

ASR is a slow chemical process in which alkalis, usually predominantly from the cement, react with certain reactive types of silica (e.g., chert, quartzite, opal, and strained quartz crystals) in the aggregate, when moisture is present. This reaction produces an alkali-silica gel that can absorb water and expand to cause micro-cracking of the concrete. Excessive expansion of the gel can lead to significant cracking which can change the mechanical properties of the concrete. In order for ASR to occur, three conditions must be present: a sufficient amount of reactive silica in the aggregate, adequate alkali content in the concrete, and sufficient moisture.<sup>2</sup>

Contrary to the baseless allegations in FOTC/NEC's Motion, when NextEra applied for license renewal, no documented occurrence of ASR had been previously observed in safety-related concrete at nuclear plants in the United States,<sup>3</sup> and ASR was not expected based on use of construction standards intended to avoid introducing reactive aggregates.<sup>4</sup>

After NextEra identified the presence of ASR in September 2010 through petrographic examination of concrete core borings performed at NextEra's own initiative, NextEra engaged highly qualified subject matter experts from the University of Texas, University of New Hampshire, Electric Power Research Institute, and several engineering firms to assist in assessing the concrete structures impacted by ASR. Over the next eighteen months, NextEra and the NRC Staff engaged in a series of transparent interactions, including audits, inspections, public meetings and requests for information. With the assistance of its experts, NextEra assessed the extent of the condition, performed additional petrographic examinations, and

---

<sup>2</sup> NRC Information Notice 2011-20: Concrete Degradation by Alkali-Silica Reaction (Nov, 18, 2011) (ADAMS Accession No. ML112241029) ("IN 2011-20").

<sup>3</sup> *See, e.g.*, American Concrete Institute, ACI 349.3R-02, Evaluation of Existing Nuclear Safety-Related Concrete Structures (2002) at ¶ 4.2.5, available at [http://civilwares.free.fr/ACI/MCP04/3493r\\_02.PDF](http://civilwares.free.fr/ACI/MCP04/3493r_02.PDF) ("no occurrences of ASR have been documented for nuclear safety-related concrete structures in the United States"). *See also* NRC Staff Presentation, Seabrook Concrete Degradation - Alkali Silica Reaction (May 24, 2011), Slide 5 ("First nuclear plant in U.S. to experience ASR") (ADAMS Accession No. ML12054A641).

<sup>4</sup> *See, e.g.*, NUREG-1801, Rev. 1, Generic Aging Lessons Learned Report (Sept. 2005) ("GALL Report") at II A 1-4 ("As described in NUREG-1557, investigations, tests, and petrographic examinations of aggregates performed in accordance with ASTM C295-54 or ASTM C227-50 can demonstrate that those aggregates do not react within reinforced concrete.").

evaluated the effect of ASR on concrete structures. The extent of condition review included analysis of 20 more core borings from five areas identified as most susceptible to ASR, which were sent to an independent testing laboratory in April 2011 for compressive strength testing, modulus of elasticity testing, and petrographic examinations. In addition, walk-down inspections and assessments of onsite concrete structures were conducted with participation from a trained, experienced petrographer. The extent of condition review has identified ASR in 131 localized areas. The testing and structural evaluations have been used to support prompt operability determinations,<sup>5</sup> with which the Staff has concurred.

Further, NextEra has used these expert evaluations to develop an Alkali-Silica Reaction (ASR) Monitoring Program, which it submitted on May 16, 2012 as a supplement to the LRA augmenting the Structures Monitoring Program.<sup>6</sup> The ASR Monitoring Program is structured according to the guidelines in ACI 349.3R, “Structural Condition Assessment of Buildings”<sup>7</sup> and establishes action levels based on the input of the subject matter experts and the following authoritative sources:

“Report on the Diagnosis, Prognosis, and Mitigation of Alkali-Silica Reaction in Transportation Structures,” U.S. Dept. of Transportation, Federal Highway Administration, January 2010, Report Number FHWA-HIF-09-004.

“Structural Effects of Alkali-Silica Reaction: Technical Guidance on the Appraisal of Existing Structures,” Institution of Structural Engineers, July 1992.

---

<sup>5</sup> SBK-L-12122, Seabrook Station – Response to Confirmatory Action Letter (June 8, 2012) at Encl. (ASR Project Corrective Action Plan) (ADAMS Accession No. ML12171A277) (“June 8, 2012 CAL Response”); SBK-L-12106, Seabrook Station – Response to Confirmatory Action Letter (May 24, 2012) at Encl. 1 (Root Cause for the Organizational Causes Associated with the Occurrence of ASR at Seabrook Station) (ADAMS Accession No. ML12151A396) (“May 24, 2012 CAL Response”). *See also* Meeting Summary Regarding Concrete Degradation Held on April 23, 2012 (May 4, 2012) at 3-4 (ADAMS Accession No. ML121220109) (“April 23, 2012 Meeting Summary”); NextEra, Impact of Alkali Silica Reaction on Seabrook Structures (April 23, 2012), slides 12-25 (ADAMS Accession No. ML121160422) (“NextEra April 23, 2012 Presentation”).

<sup>6</sup> SBK-L-12101, Seabrook Station, NextEra Energy Seabrook License Renewal Application, Structures Monitoring Program Supplement-Alkali-Silica Reaction (ASR) Monitoring (May 16, 2012) (ADAMS Accession No. ML12142A323) (“LRA Supplement”).

<sup>7</sup> *Id.* Encl. 2 at 3, 5.

ORNL/NRC/LTR-95/14, “In-Service Inspection Guidelines for Concrete Structures in Nuclear Power Plants,” December 1995.

“Seabrook Station: Impact of Alkali-Silica Reaction on Concrete Structures and Attachments,” MPR-3727, Revision 0, April 2012.<sup>8</sup>

Monitoring of crack growth is used to assess the long term implications of ASR and specify monitoring intervals. A Combined Cracking Index (“CCI”) and Individual Crack Width criteria provide thresholds for increasing levels of monitoring and structural evaluation. Under this hierarchy, the locations that represent the highest CCI values recorded during the baseline inspections (over 20 areas) will be re-inspected at six month intervals.<sup>9</sup>

NextEra is also undertaking longer term actions to address ASR. NextEra is currently monitoring the progression of ASR by detailed visual inspections and trending of the observable surface of the structures. This crack mapping and expansion monitoring provides the best correlation to the progression of ASR in the structures. These measurements will be taken at 6 month intervals until a reliable trend of ASR progression is established (typically requiring about 3 years of data to establish a trend)<sup>10</sup> and will be used in determining the progression of ASR and as a basis for any change to the frequency of the inspection.<sup>11</sup> In addition, large scale testing of representative reinforced concrete beams will be conducted at the University of Texas. These concrete beams will undergo accelerated ASR reaction and will be monitored for ASR expansion

---

<sup>8</sup> *Id.*, Encl. 2 at 6. See also ACRS PLR Subcommittee Transcript (July 10, 2012) (ADAMS Accession No. ML122070401) (“ACRS Transcript”) at 91-93, 101-02; NextEra’s Presentation to the ACRS License Renewal Subcommittee (July 10, 2012) at 29 (ADAMS Accession No. ML12199A295) (“NextEra ACRS Presentation”). This presentation is also attached to the ACRS Transcript. A more detailed explanation of how the actions levels were derived is provided in MPR-3727, “Seabrook Station: Impact of Alkali-Silica Reaction on Concrete Structures and Attachments” (Rev. 0, April 2012) at 44-45, which was submitted to the NRC as part of the May 24, 2012 CAL Response, *supra* note 5, and is found at ADAMS Accession No. ML12151A397.

<sup>9</sup> LRA Supplement, *supra* note 6, Encl. 2 at 3, 6-7, 9, 13.

<sup>10</sup> SBK-L-12104, Seabrook Station – Supplement to Actions for Resolution of Alkali Silica Reaction (ASR) Issues (May 10, 2012) at 2 (ADAMS Accession No. ML12131A479); June 8, 2012 CAL Response, *supra* note 5, Encl. at 6.

<sup>11</sup> LRA Supplement, *supra* note 6, Encl. 2 at 7, 9.

and crack index. Testing will establish the potential future impact to structural stability and provide action levels that are correlated to visual crack indices monitored on the exposed surfaces of structures.<sup>12</sup> If necessary, the action levels in ASR Monitoring Program (currently derived from authoritative sources as previously discussed) will be adjusted based on these test results.<sup>13</sup> In addition, the design parameters for ASR affected concrete determined from large-scale tests conducted by the University of Texas will be compared to ACI Design Code requirements and reconciled with Seabrook design basis calculations, allowing final closure of the operability determinations.<sup>14</sup>

In sum, NextEra has responded to its discovery of an aging effect not previously seen at U.S. nuclear plants, and not adequately addressed by prior NRC guidance, through retention of very qualified experts, careful research, comprehensive and methodical assessments, resulting in confirmation of the operability of affected structures, establishment of an ASR Monitoring Program, and identification and commissioning of longer term testing to verify the response of structures. In contrast, FOTC/NEC now seek to challenge the ASR Monitoring Program based on nothing more than bald and conclusory criticism unsupported by any expert opinion or other information demonstrating a genuine dispute. Further, the ASR Monitoring Program has been available since May, so at the latest, any challenge to the adequacy of that program should have been brought in June (within thirty days), and not three months after its submittal. Nor is this late filing justified by FOTC/NEC's attempt to piggy-back off of preliminary NRC Staff observations reflected in the ACRS subcommittee transcript. Such observations do not provide a good cause for a new contention where there is no showing that FOTC/NEC could not have

---

<sup>12</sup> June 8, 2012 CAL Response, *supra* note 5, Encl. at 6.

<sup>13</sup> NextEra ACRS Presentation, *supra* note 8, at 33; NextEra April 23, 2012 Presentation, *supra* note 5, at 36; April 23, 2012 Meeting Summary, *supra* note 5, at 4; June 8, 2012 CAL Response, *supra* note 5, Encl. at 6.

<sup>14</sup> NextEra April 23, 2012 Presentation, *supra* note 5, at 35; April 23, 2012 Meeting Summary, *supra* note 5, at 4.

made similar observations themselves if they had made any effort to engage experts. Moreover, the NRC Staff's observations during the ACRS subcommittee do not even support the particular claims that FOTC/NEC now make. Consequently, FOTC/NEC's ASR Contention is untimely and unsupported, and must therefore be rejected.

## II. BACKGROUND

In May 2010, NextEra submitted its Application to the NRC for a renewed operating license ("LRA") for Seabrook Station. In its Application, NextEra presented the results of groundwater analyses performed from November 2008 to September 2009 indicating that groundwater at the site is aggressive. LRA at 3.5-12.<sup>15</sup> As a result, the LRA identified degradation due to aggressive chemical attack as an applicable aging effect. *Id.* at 3.5-12, B-154. Consistent with the GALL Report, which calls for further evaluation of concrete exposed to aggressive groundwater (*see* NUREG-1801, Rev. 1, at II A 1-5), the Structures Monitoring Program<sup>16</sup> in NextEra's Application stated:

Seabrook Station has scheduled concrete testing during the second and third quarter of 2010. An evaluation will be performed based on the results of the testing and a determination of the concrete condition which may lead to additional testing or increased inspection frequency. Testing of concrete may consist of the following:

- a. concrete core samples
- b. penetration resistance tests

---

<sup>15</sup> NextEra had previously performed an evaluation in the early 1990s to assess the effect of the groundwater infiltration on the serviceability of the concrete walls and concluded that there would be no deleterious effect, based on the design and placement of the concrete and the determination at that time that the nature of the groundwater was non-aggressive. SBK-L-12061, Seabrook Station Response to Request for Additional Information NextEra Energy Seabrook License Renewal Application Supplemental Response –Alkali-Silica Reaction (ASR) (Mar. 30, 2012), Encl. at 2 (ADAMS Accession No. ML12094A364) ("March 30, 2012 Supplemental RAI Response").

<sup>16</sup> The Structures Monitoring Program is described in Section B.2.1.31 of the LRA. The concrete in the Seabrook Containment is also subject to aging management under the ASME Section XI, Subsection IWL program, as described in Section B.2.1.28 of the LRA. That section also identified the investigation described in the Structures Monitoring Program to evaluate aggressive chemical attack. *See* LRA at B-154.

- c. petrographic analysis of the concrete core samples
- d. visual inspection of rebar as they are exposed during the concrete coring

Seabrook will evaluate the results of the testing and, if required, undertake additional corrective actions in accordance with the Structures Monitoring

LRA at B-166. Consistent with the GALL Report (at II A 1-4), the LRA did not identify ASR as an applicable aging effect because the aggregates used in concrete structures had been selected using ASTM C295 to avoid potentially reactive aggregates. LRA at 3.5-17.

In keeping with its commitments in the LRA, NextEra initiated a comprehensive review of possible effects of aggressive ground water to in-scope structures. March 30, 2012 Supplemental RAI Response, *supra* note 15, at 2. During this review, NextEra performed a walkdown of plant structures, and the “B” Electrical Tunnel was identified as showing the most severe indications of groundwater infiltration. *Id.* NextEra removed core bores from this area for strength and elasticity testing, and petrographic examination. The results of the petrographic examination, received in September 2010, showed that the samples had experienced ASR. *Id.*<sup>17</sup>

The identification of ASR was discussed with the NRC Staff during an October 2010 audit of NextEra’s aging management programs,<sup>18</sup> and the results of the initial testing and plans for additional investigation were described in a December 2010 RAI response.<sup>19</sup> Based on the results, NextEra conducted a prompt operability determination for the affected tunnel; initiated

---

<sup>17</sup> See also April 23, 2012 Meeting Summary, *supra* note 5, at 3 (“NextEra identified that the concrete walls in the ‘B’ electrical tunnel were experiencing ASR in September 2010”).

<sup>18</sup> Audit Report Regarding the Seabrook Station License Renewal Application (Mar. 21, 2011) at 65 (ADAMS Accession No. ML110280424 ).

<sup>19</sup> SBK-L-10204, Seabrook Station Response to Request for Additional Information NextEra Energy Seabrook License Renewal Application Aging Management Programs, (Dec. 17, 2010) at 33, 37-38 (ADAMS Accession No. ML103540534). NextEra later determined, and has explained to the NRC, that the testing of core bores removed from ASR-affected reinforced concrete structures will identify conservative (low) values for mechanical properties, such as tensile strength and elastic modulus, due to the loss of confinement by reinforcing steel when the core is extracted from its structural context. March 30, 2012 Supplemental RAI Response, *supra* note 15, at 7-8.

an extent of condition review for five additional potentially susceptible areas, including the Containment Enclosure Building; and initiated a root cause analysis to identify any necessary corrective action including possible additional or augmented structural analysis. *Id.* at 37-38. In an April 14, 2011 RAI response,<sup>20</sup> which reported that the extent of condition review was scheduled to be complete in June 2011, NextEra also informed the NRC that:

The Seabrook Structural Monitoring Procedure will be revised to include actions for inspection and monitoring of concrete due to ASR. The Extent of Condition review will provide the plant staff with the scope of the effects of ASR on concrete structural elements at Seabrook. Actions will be taken on the basis of the extent of condition to keep the structures within the limits of the current design bases. The Seabrook Structural Monitoring Procedure will be revised to include direction on monitoring the presence of ASR.

*Id.*, Encl. at 6.

On May 23, 2011, the NRC published a report of its inspection of the Seabrook license renewal programs.<sup>21</sup> The cover letter to this Inspection Report explained:

We noted that your staff continued to develop an appropriate initial response to the aging effect of the alkali-silica reaction in certain concrete structures of Seabrook Station. Because your investigation and testing was ongoing and you were not currently in a position to propose a new or revised aging management program, the inspection team was unable to arrive at a conclusion about the adequacy of your aging management review for the alkali-silica reaction issue. As part of the ongoing review of your application for a renewed license, you should continue to inform the Division of License Renewal as you develop your response to the alkali-silica reaction issue.

May 23, 2011 Inspection Report, *supra* note 21, at 1. This report devoted a section to ASR and described in detail plant walkdowns conducted by NextEra, as well as the results of the penetration resistance tests and the testing of removed concrete cores. *Id.* at 17-18.

---

<sup>20</sup> SBK-L-11063, Seabrook Station Response to Request for Additional Information NextEra Energy Seabrook License Renewal Application RAI-Set 13 (Apr. 14, 2011), at 5-6 (ADAMS Accession No. ML11108A131).

<sup>21</sup> NRC Letter, NextEra Energy Seabrook NRC License Renewal Inspection Report 05000443/2011007 (May 23, 2011) (ADAMS Accession No. ML111360432) (“May 23, 2011 Inspection Report”).

As part of its extent of condition review, NextEra conducted additional concrete core sampling from five areas of the plant to provide perspective on both the additional areas that might be affected by ASR and the extent of ASR degradation within a given area. June 8, 2012 CAL Response, *supra* note 5, Encl. at 2. The five areas consisted of the Containment Enclosure Building, RCA walkway, DC Oil Storage Room, RHR Vaults, and EFW Pump House stairwell (*id.* at 2-3), which were chosen because they had the greatest similarity to the “B” Electrical Tunnel. March 30, 2012 Supplemental RAI Response, *supra* note 15, at 2. Four cores were taken from each area and were sent to an independent testing laboratory in April 2011 for compressive strength testing, modulus of elasticity testing and petrographic examinations. June 8, 2012 CAL Response, *supra* note 5, at 2-3. These petrographic examinations confirmed that the original Control Building lower electrical tunnel core samples showed the most significant ASR distress. *Id.* Testing of the core samples indicated the compressive strength in all areas actually increased since the original concrete placements and that compressive strength is greater than the strength required by design. *Id.* The unrestrained modulus of elasticity was generally lower compared to the calculated modulus of elasticity. *Id.*

The core samples provided several insights into the extent of ASR cracking over the affected areas. First, the areas affected were highly localized in that core samples taken from adjacent locations did not exhibit signs of ASR characteristics or features. Secondly, when the length of the cores were evaluated (i.e., depth into the wall) it was observable that the cracking was most severe at the exposed surface and reduced towards the center of the sample. This is consistent with the industry's understanding of the confinement effects on ASR expansion.

*Id.* at 3. NextEra’s evaluation of its test results showed that the affected structure walls are within design limits and fully capable of performing their safety functions, but potentially are subject to further degradation of material properties due to the effects of ASR. March 30, 2012 Supplemental RAI Response, *supra* note 15, at 2. Additional concrete core samples were also removed from the same areas in the lower electrical tunnel and were tested at a second

independent testing laboratory. Test results established that there was no reduction in the compressive strength of the concrete affected by ASR when compared to control core samples not affected by ASR. These test results are consistent with the concrete industry's understanding that ASR does not typically affect the compressive strength of concrete. *Id.*

Further, walk-down inspections and assessments of onsite concrete structures were conducted with participation from a trained, experienced petrographer during which additional areas of ASR degradation were identified. In total, 131 specific areas were identified as exhibiting features of ASR. June 8, 2012 CAL Response, *supra* note 5, Encl. at 3.

On July 11, 2011, NextEra submitted a special report regarding ASR to the NRC as required by a surveillance requirement in the Seabrook technical specifications.<sup>22</sup> It explained:

[A] small section of the below grade, exterior wall of the containment enclosure has been affected by alkali-silica reaction (ASR), resulting in a condition that meets the requirements in TS 3.6.5.3 for reporting to the NRC. ASR occurs over time in concrete between the alkalis in the cement paste and reactive silica, which is found in many common aggregates. The presence of water in hardened concrete is required for ASR to occur.

The analysis of samples of the containment enclosure building found that the concrete has acceptable compressive strength and reduced but still acceptable modulus of elasticity. The portion of the building walls affected by ASR is limited to below ground level areas that are subject to groundwater intrusion. An evaluation of this condition concluded that any change in the dynamic seismic response of the structure would be minor, and the containment enclosure building remains capable of performing its design function. NextEra is evaluating the long-term effects of ASR and what remediation would be appropriate.

Special Report, *supra* note 22, at 1.

On November 18, 2011, NRC published an Information Notice to all reactor licensees, describing the occurrence of ASR-induced concrete degradation at Seabrook.<sup>23</sup> That Information

---

<sup>22</sup> SBK-L-1114, Special Report Regarding Containment Enclosure Building Structural Integrity (July 11, 2011) (ADAMS Accession No. ML11199A046).

<sup>23</sup> IN 2011-20, *supra* note 2.

informed licensees that certain earlier construction standards previously credited as preventing ASR may not do so:

ASTM has several standards for testing aggregates during construction to verify that only non-reactive aggregates are present, thereby preventing future ASR-induced degradation. However, ASTM issued updated standards ASTM C1260 and ASTM C1293 and provided guidance in the appendices of ASTM C289 and ASTM C1293 that cautions that the tests described in ASTM C227 and ASTM C289 may not accurately predict aggregate reactivity when dealing with late- or slow-expanding aggregates containing strained quartz or microcrystalline quartz. Therefore, licensees that tested using ASTM C227 and ASTM C289 could have concrete that is susceptible to ASR-induced degradation.

IN 2011-20, *supra* note 2, at 3.

On March 30, 2012, NextEra sent a supplement to its August 11, 2011 RAI Response.

March 30, 2012 Supplemental RAI Response, *supra* note 15. In this Supplemental Response, NextEra explained that:

Due to the effects of ASR on material properties, NextEra has initiated actions to perform additional testing to demonstrate that the effects of ASR on in-scope structures can be managed to maintain the intended functions of affected structures through the Period of Extended Operation (PEO).

NextEra will perform accelerated expansion testing to determine remaining reactivity in the aggregate. In addition, NextEra has initiated actions to perform testing on full-scale replicas of station structural configurations that will provide the data necessary to establish the current and future implications of the effects of ASR on plant buildings. Specifically, these tests will elucidate the effects of ASR with regards to reinforcing steel anchorage, flexural stiffness and shear strength.

Through this testing, quantitative crack limits will be developed. The crack limits will be incorporated into the Structural Monitoring Program to manage the effects of ASR on concrete walls. These quantitative crack limits will be used to develop acceptance criteria such that corrective action can be implemented prior to loss of intended function.

NextEra will demonstrate that the effects of ASR on in-scope structures can be managed to maintain the intended functions of affected structures through the PEO.

*Id.*, Encl. at 3.

NextEra identified a five point strategy going forward to addressing the ASR mechanism:

1. Establishment of rate of degradation - In order to predict future degradation and its impact on design margins, the rate at which ASR is continuing to occur must be established. The rate is highly dependent upon the specifics of the actual aggregate. Short term and long term reactivity testing of the aggregates used in Seabrook concrete will be performed. The testing will establish the extent that the aggregate has reacted to date and what additional reactivity is expected going forward.
2. Perform structural testing of ASR affected concrete elements - In order to determine the effect of ASR on concrete properties, full scale testing of ASR affected concrete beams will be performed. Data obtained from the testing will be used to correlate the degree of ASR with the impact on mechanical properties of in-situ concrete.
3. Reconcile the Current Licensing Basis - Utilizing results of testing and knowledge learned on concrete ASR degradation, areas of concrete structures impacted with ASR will be reviewed/reanalyzed to ensure they are in compliance with the Current Licensing Basis.
4. Monitoring - Update the Structural Monitoring Program to include monitoring criteria that address ASR concrete degradation, its progression, and the impact on the integrity of the structure.
5. Potential Mitigation Strategies of ASR- Elimination of groundwater in-leakage to prevent further degradation. Consideration of application of lithium salts or other techniques to stop or slow the ASR reaction.

*Id.* at 13-14.

NextEra also told the NRC that it had initiated actions to perform testing on full-scale replicas of station structural configurations to provide the data necessary to establish the current and future implications of ASR deterioration on concrete material properties of plant structures.

*Id.* at 14. This testing would be used to develop a “crack mapping index” (quantitative damage limits) that would be used to enhance both the Structures Monitoring Program and the Section XI IWL Program. *Id.*

Finally, NextEra explained, in its Supplemental RAI Response, that it would inspect 20 previously inspected cracked locations at six months intervals in order to establish a trend of

ASR propagation. These 20 areas show cracking characteristics with the greatest similarity to the “B” Electrical Tunnel, where the ASR is most advanced. *Id.* at 17.

On April 23, 2012, the NRC and NextEra held a public meeting to discuss NextEra’s plans and schedule regarding concrete degradation caused by ASR. This meeting was publicly noticed, and the NRC Staff made both a conference bridge line and a webinar (for viewing the presentations) available during the meeting.<sup>24</sup> In that meeting, the NRC Staff presented its current assessment of ASR affected structures. As reflected in the NRC Staff’s presentation slides, the Staff’s own experts have conducted inspections and reviews of NextEra’s evaluations and analyses and identified no immediate safety concern.<sup>25</sup> ASR affected structures are operable but degraded.<sup>26</sup>

- Field walk-downs confirm no visible indication of significant deformation, distortion, or displacement of structures, or rebar corrosion,
- ASR identified at localized areas in the concrete walls, and
- Progression of ASR degradation occurs slowly.<sup>27</sup>

At that same meeting, NextEra provided an extensive presentation on the discovery of ASR at Seabrook, the extent of condition testing, the evaluation of structures, the actions it had taken to date, and its plans going forward.<sup>28</sup> NextEra also stated that it would submit an ASR aging management program for the Seabrook LRA by May 25, 2012.<sup>29</sup> NextEra explained that this program would initially reflect criteria to be used for periodic inspection of the 20 previously

---

<sup>24</sup> ADAMS Accession No. ML121070659; *See* April 23, 2012 Meeting Summary, *supra* note 5, at 1.

<sup>25</sup> Seabrook Concrete Degradation by Alkali Silica Reaction – Public Meeting (April 23, 2012) at 3 (ADAMS Accession No. ML121160433).

<sup>26</sup> *Id.*

<sup>27</sup> *Id.*

<sup>28</sup> NextEra April 23, 2012 Presentation, *supra* note 5; Dr. O. Bayrak, Structural Assessment of Seabrook Station – Role of Concrete Material Testing (Apr. 23, 2012) (ADAMS Accession No. ML121160349 ); April 23, 2012 Meeting Summary, *supra* note 5, at 3-5.

<sup>29</sup> April 23, 2012 Meeting Summary, *supra* note 5, at 5.

crack indexed locations, at 6-month intervals, and that the program criteria and frequency will be revised as the full-scale concrete beam test program develops.<sup>30</sup> This meeting was widely attended by the public and press,<sup>31</sup> including representatives of groups such as the Seacoast Anti-Pollution League and the C-10 Research and Education Foundation, who provided a list of questions to the NRC.<sup>32</sup>

On May 16, 2012, NRC sent NextEra a Confirmatory Action Letter, which confirmed commitments by NextEra regarding ASR.<sup>33</sup> Among other commitments, this letter confirmed NextEra's plans to submit: (1) the root cause report associated with the occurrence of ASR by May 25, 2012; (2) the evaluation, "Impact of ASR on Concrete Structures and Attachments," by May 25, 2012;<sup>34</sup> (3) the corrective action plan for the continued assessment of ASR in concrete structures by June 8, 2012;<sup>35</sup> and (4) information regarding concrete testing planned for the University of Texas, by June 30, 2012.<sup>36</sup>

Also on May 16, 2012, NextEra amended its LRA to provide a supplement to its Structures Monitoring Program focused on aging management of ASR-related degradation.<sup>37</sup> This letter augmented the existing Structures Monitoring Program, B.2.1.31, by addition of a

---

<sup>30</sup> NextEra April 23, 2012 Presentation, *supra* note 5, at 35-36; April 23, 2012 Meeting Summary, *supra* note 5, at 4.

<sup>31</sup> April 23, 2012 Meeting Summary, *supra* note 5, at Enclosure.

<sup>32</sup> See April 23, 2012 Meeting Summary, *supra* note 5, at 6, referencing ADAMS Accession No. ML 121160459, as well as two other papers submitted by C-10 that are not on ADAMS Accession but are available at [http://www.ucsusa.org/assets/documents/nuclear\\_power/brown-seabrook-concrete-report-3-14-12.pdf](http://www.ucsusa.org/assets/documents/nuclear_power/brown-seabrook-concrete-report-3-14-12.pdf); and [http://www.ucsusa.org/assets/documents/nuclear\\_power/concrete-degradation.pdf](http://www.ucsusa.org/assets/documents/nuclear_power/concrete-degradation.pdf).

<sup>33</sup> NRC Letter CAL No. 1-2012-002, Confirmatory Action Letter, Seabrook Station Unit 1- Information Related to Concrete Degradation Issues, (May 16, 2012) (ADAMS Accession No. ML12125A172).

<sup>34</sup> NextEra submitted the root cause report and ASR evaluation to NRC in its May 24, 2012 CAL Response, *supra* note 5.

<sup>35</sup> NextEra submitted the corrective action plan to NRC in its June 8, 2012 CAL Response, *supra* note 5.

<sup>36</sup> NextEra submitted the information regarding testing at the University of Texas to NRC in SBK-L-12129, Seabrook Station Response to Confirmatory Action Letter, (June 21, 2012) (ADAMS Accession Nos. ML12179A281 and ML12179A282) ("June 21, 2012 CAL Response").

<sup>37</sup> LRA Supplement, *supra* note 6.

plant specific Alkali-Silica Reaction (ASR) Monitoring Program, B.2.1.31A, which will identify plant structures affected by ASR, monitor its progression and take corrective action such that intended functions are maintained. LRA Supplement, *supra* not 6, Encl. 2 at 2.

The NRC published its Safety Evaluation Report (“SER”) with Open Items on June 8, 2012.<sup>38</sup> The SER with open items reflects the status of the Staff’s review through May 16, 2012; so, it does not reflect consideration of NextEra’s ASR AMP. *See* SER with Open Items, *supra* note 38, at 1, 3-116 n.1. The Plant License Renewal Subcommittee of the Advisory Committee on Reactor Safeguards (“ACRS”) met to review the NRC Staff’s SER with Open Items on July 10, 2010.<sup>39</sup> During the subcommittee meeting, the deputy director of the NRC’s Division of License Renewal explained that NextEra’s ASR AMP had not been included as part of the NRC Staff’s formal review that is reflected in the SER with Open Items and is “continuing under staff review.” ACRS Transcript, *supra* note 8, at 14. She explained that, with respect to the ASR AMP, the Staff would only be able to offer “preliminary observations” and “early impressions” and would not be able to provide conclusions. *Id.* at 14-15. Nevertheless, the ACRS Subcommittee was interested in this topic, so NextEra included a discussion of its past actions and proposed AMP,<sup>40</sup> and the NRC Staff also presented its preliminary views.<sup>41</sup>

### III. STANDARDS FOR ADMISSION

The NRC does not look with favor on amended or new contentions filed after the initial filing. *Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Units 2 and 3), CLI-04-36, 60 N.R.C. 631, 636 (2004). As the Commission has repeatedly stressed,

---

<sup>38</sup> NRC Letter, Safety Evaluation Report with Open Items Related to the License Renewal of Seabrook Station, (June 8, 2012) (ADAMS Accession No.ML12160A374) (“SER with Open Items”).

<sup>39</sup> ACRS Transcript, *supra* note 8.

<sup>40</sup> NextEra ACRS Presentation, *supra* note 8; ACRS Transcript, *supra* note 8, at 58-125.

<sup>41</sup> ACRS Transcript, *supra* note 8, at -154-78.

our contention admissibility and timeliness rules require a high level of discipline and preparation by petitioners “who must examine the publicly available material and set forth their claims and the support for their claims at the outset.” There simply would be “no end to NRC licensing proceedings if petitioners could disregard our timeliness requirements” and add new contentions at their convenience during the course of a proceeding based on information that could have formed the basis for a timely contention at the outset of the proceeding. Our expanding adjudicatory docket makes it critically important that parties comply with our pleading requirements and that the Board enforce those requirements.

*AmerGen Energy Co., LLC* (Oyster Creek Nuclear Generating Station), CLI-09-7, 69 N.R.C. 235, 271-72 (2009) (citations omitted).

In keeping with this policy, new contentions filed after the initial deadline for contentions in a proceeding will not be entertained absent a determination by the presiding officer that the proponent has demonstrated good cause by showing that:

- (i) The information upon which the amended or new contention is based was not previously available;
- (ii) The information upon which the amended or new contention is based is materially different than information previously available; and
- (iii) The amended or new contention has been submitted in a timely fashion based on the availability of the subsequent information.

10 C.F.R. § 2.309(c)(1) (as recently amended<sup>42</sup>). The NRC typically applies a “30-day clock” to the filing of a new contention based on new information,<sup>43</sup> and this has been the standard established in this proceeding.<sup>44</sup>

In essence, under these standards, a proponent of a new contention must show that it could not have raised its contention earlier. “[T]he unavailability of [a] document does not constitute a showing of good cause for admitting a late-filed contention when the *factual*

---

<sup>42</sup> Amendments to Adjudicatory Process Rules and Related Requirements, 77 Fed. Reg. 46,562, 46,591 (Aug. 3, 2012).

<sup>43</sup> *Southern Nuclear Operating Co.*, (Vogtle Electric Generating Plant, Units 3 and 4), CLI-11-08, 74 N.R.C. \_\_\_, slip op. at 3 n.8 (Sept. 27, 2011).

<sup>44</sup> Initial Scheduling Order (April 4, 2011) at 4.

*predicate* for that contention is available from other sources in a timely manner.” *Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), CLI-83-19, 17 N.R.C.1041, 1043 (1983) (emphasis added). Therefore, an intervenor cannot establish good cause for filing a late contention when the information on which the contention is based was publicly available “for some time” prior to the filing of the contention. *Philadelphia Electric Co.* (Limerick Generating Station, Units 1 and 2), ALAB-828, 23 N.R.C. 13, 21 (1986). “Hearing petitioners have an ‘ironclad obligation to examine the publicly available documentary material pertaining to the facility in question with sufficient care to enable the petitioner to uncover any information that could serve as the foundation for a specific contention.’” *Duke Energy Corp.* (McGuire Nuclear Station, Units 1 and 2; Catawba Nuclear Station, Units 1 and 2), CLI-02-28, 56 N.R.C. 373, 386 (2002), quoting Final Rule, Rules of Practice for Domestic Licensing Proceedings - Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,170 (Aug. 11, 1989).

Consequently, an intervenor may not delay filing a contention until a document becomes available that collects, summarizes, or places in context the facts supporting that contention. *Northern States Power Co.* (Prairie Island Nuclear Generating Plant, Units 1 and 2), CLI-10-27, 72 N.R.C. 481, 496 (2010). “To conclude otherwise would turn on its head the regulatory requirement that new contentions be based on “information . . . *not previously available.*” *Id.* (emphasis in original). Similarly, that an issue is discussed or highlighted in an ACRS meeting does not make a new contention timely, where the underlying analysis being challenged was previously available. *Oyster Creek*, CLI-09-7, 69 N.R.C. at 274-75. Thus, where “discussion with the ACRS members did not alter the technical information available to [an intervenor],” the Commission has “reject[ed] [an intervenor’s] attempt to use the ACRS meeting, or its transcript, as an artificial bridge to extend the time in which a contention could be filed.” *Vogtle*, CLI-11-8,

slip op. at 12-13, 18. *See also Private Fuel Storage LLC* (Independent Spent Fuel Storage Installation), LBP-00-08, 51 N.R.C. 146, 153 n.2 (2000) (NRC Staff's endorsement or non-endorsement of applicant's viewpoint clearly reflected in the application does not have the effect of restarting the filing clock).

Even if a petitioner satisfies the requirements of 10 C.F.R. § 2.309(f)(2) and 10 C.F.R. § 2.309(c), it must still demonstrate that its new contention satisfies the standards for admissibility in 10 C.F.R. § 2.309(f)(1)(i)-(vii). *Sacramento Municipal Utility District* (Rancho Seco Nuclear Generating Station), CLI-93-12, 37 N.R.C. 355, 362-63 (1993). That rule requires that an admissible contention:

- (i) Provide a specific statement of the issue of law or fact to be raised or controverted;
- (ii) Provide a brief explanation of the basis for the contention;
- (iii) Demonstrate that the issue raised in the contention is within the scope of the proceeding;
- (iv) Demonstrate that the issue raised in the contention is material to the findings the NRC must make to support the action that is involved in the proceeding;
- (v) Provide a concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue and on which the petitioner intends to rely at hearing, together with references to the specific sources and documents on which the requestor/petitioner intends to rely to support its position on the issue; and
- (vi) Provide sufficient information to show that a genuine dispute exists with the applicant/licensee on a material issue of law or fact. This information must include references to specific portions of the application (including the applicant's environmental report and safety report) that the petitioner disputes and the supporting reasons for each dispute, or, if the petitioner believes that the application fails to contain information on a relevant matter as required by law, the identification of each failure and the supporting reasons for the petitioner's belief.

10 C.F.R. §§ 2.309(f)(1)(i)-(vi).

These pleading standards governing the admissibility of contentions are the result of a 1989 amendment to 10 C.F.R. § 2.714, now § 2.309, which was intended “to raise the threshold for the admission of contentions.” 54 Fed. Reg. 33,168 (Aug. 11, 1989); *see also Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 N.R.C. 328, 334 (199); *Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 1, 2 and 3), CLI-91-12, 34 N.R.C. 149, 155-56 (1991). The Commission has stated that the “contention rule is strict by design,” having been “toughened . . . in 1989 because in prior years ‘licensing boards had admitted and litigated numerous contentions that appeared to be based on little more than speculation.’” *Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Units 2 and 3), CLI-01-24, 54 N.R.C. 349, 358 (2001) (citation omitted). The pleading standards are to be enforced rigorously. “If any one . . . is not met, a contention must be rejected.” *Palo Verde*, CLI-91-12, 34 N.R.C. at 155 (citation omitted). A licensing board is not to overlook a deficiency in a contention or assume the existence of missing information. *Id.*

The Commission has explained that this “strict contention rule” serves multiple purposes, which include putting other parties on notice of the specific grievances and assuring that full adjudicatory hearings are triggered only by those able to proffer at least some minimal factual and legal foundation in support of their contentions. *Oconee*, CLI-99-11, 49 N.R.C. at 334. By raising the threshold for admission of contentions, the NRC intended to obviate lengthy hearing delays caused in the past by poorly defined or supported contentions. *Id.* As the Commission reiterated in incorporating these same standards into the new Part 2 rules, “[t]he threshold standard is necessary to ensure that hearings cover only genuine and pertinent issues of concern and that issues are framed and supported concisely enough at the outset to ensure that the

proceedings are effective and focused on real, concrete issues.” 69 Fed. Reg. 2,182, 2,189-90 (Jan. 14, 2004).

Under these standards, a petitioner is obligated “to provide the [technical] analyses and expert opinion” or other information “showing why its bases support its contention.” *Georgia Institute of Technology* (Georgia Tech Research Reactor, Atlanta, Georgia), LBP-95-6, 41 N.R.C. 281, 305, *vacated in part and remanded on other grounds*, CLI-95-10, 42 N.R.C. 1, *aff’d in part*, CLI-95-12, 42 N.R.C. 191 (1995). Where a petitioner has failed to do so, “the [Licensing] Board may not make factual inferences on [the] petitioner’s behalf.” *Id.*, *citing Palo Verde*, CLI-91-12, 34 N.R.C. 149.

Further, admissible contentions “must explain, with specificity, particular safety or legal reasons requiring rejection of the contested [application].” *Millstone*, CLI-01-24, 54 N.R.C. at 359-60. In particular, this explanation must demonstrate that the contention is “material” to the NRC’s findings and that a genuine dispute on a material issue of law or fact exists. 10 C.F.R. § 2.309(f)(1)(iv), (vi). The Commission has defined a “material” issue as meaning one where “resolution of the dispute *would make a difference in the outcome* of the licensing proceeding.” 54 Fed. Reg. at 33,172 (emphasis added).

As observed by the Commission, this threshold requirement is consistent with judicial decisions, such as *Conn. Bankers Association v. Board of Governors*, 627 F.2d 245, 251 (D.C. Cir. 1980), which held that:

[A] protestant does not become entitled to an evidentiary hearing merely on request, or on a bald or conclusory allegation that . . . a dispute exists. The protestant must make a minimal showing that material facts are in dispute, thereby demonstrating that an “inquiry in depth” is appropriate.

*Id.* (footnote omitted); *see also Baltimore Gas & Electric Co.* (Calvert Cliffs Nuclear Power Plant, Units 1 and 2), CLI-98-14, 48 N.R.C. 39, 41 (1998) (“It is the responsibility of the

Petitioner to provide the necessary information to satisfy the basis requirement for the admission of its contentions . . . .”). A contention, therefore, is not to be admitted “where an intervenor has no facts to support its position and where the intervenor contemplates using discovery or cross-examination as a fishing expedition which might produce relevant supporting facts.” 54 Fed. Reg. at 33,171.<sup>45</sup> The contention rule bars contentions where petitioners have what amounts only to generalized suspicions, hoping to substantiate them later, or simply a desire for more time and more information in order to identify a genuine material dispute for litigation. *Duke Energy Corp.* (McGuire Nuclear Station, Units 1 and 2), CLI-03-17, 58 N.R.C. 419, 424 (2003).

Therefore, under the Rules of Practice, a mere reference to documents does not provide an adequate basis for a contention. *Baltimore Gas & Electric Co.* (Calvert Cliffs Nuclear Power Plant, Units 1 and 2), CLI-98-25, 48 N.R.C. 325, 348 (1998). An intervenor must do more than submit “bald or conclusory allegation[s]” of a dispute with the applicant. *Millstone*, CLI-01-24, 54 N.R.C. at 358. Rather, NRC’s pleading standards require a petitioner to read the pertinent portions of the license application, including the safety analysis report and the environmental report, state the applicant’s position and the petitioner’s opposing view, and explain why it has a disagreement with the applicant. 54 Fed. Reg. at 33,170; *Millstone*, CLI-01-24, 54 N.R.C. at 358. If the petitioner does not believe these materials address a relevant issue, the petitioner is “to explain why the application is deficient.”

#### **IV. THE ASR CONTENTION IS UNTIMELY AND DOES NOT MEET ADMISSIBILITY STANDARDS**

The ASR Contention is inadmissible because it both is untimely and fails to meet the NRC’s standards for an admissible contention. The proposed contention is untimely because it

---

<sup>45</sup> See also *Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), ALAB-687, 16 N.R.C. 460, 468 (1982), *vacated in part on other grounds*, CLI-83-19, 17 N.R.C. 1041 (1983).

was not submitted within thirty days of the program that it seeks to challenge, and it is inadmissible because FOTC/NEC's various criticisms of the ASR Monitoring Program are unsupported by any information demonstrating a genuine, material dispute.

The ASR Contention seeks to challenge the adequacy of the ASR Monitoring Program that NextEra submitted on May 16, 2012. *See* Motion at 8. To be considered timely, any challenge to the adequacy of this program should have been brought at the latest<sup>46</sup> within 30 days of that submission, as the Board's Initial Scheduling Order provides. Initial Scheduling Order (April 4, 2011) at 4. Instead, FOTC/NEC has delayed for over three months. There is no good cause for this late filing.<sup>47</sup>

Nor is there any validity to FOTC/NEC's argument that the ACRS Transcript is the "new" information on which they base the proposed contention. *See* Motion at 8, 17. As shown in more detail below, FOTC/NEC make eight particular claims regarding the adequacy the ASR Monitoring Program, which are set out on pages 9 and 11 of the Motion, but none of these claims is based on new information in the ACRS Transcript. Instead, those claims simply reflect FOTC/NEC's criticisms that could have been raised when the new program was filed. Indeed, in an email message *on July 9, 2012* informing the parties of its intent to file a new contention alleging inadequate consideration of ASR, FOTC/NEC stated:

---

<sup>46</sup> Indeed, arguably, FOTC/NEC should have raised the need for ASR monitoring when it first learned of this new aging effect. Programmatic enhancements do not confer an automatic right to file new contentions. *See Oyster Creek*, CLI-09-7, 69 N.R.C. at 273-74. Rather, under the logic approved in *Oyster Creek*, if the ASR Monitoring Program augmenting the Structures Monitoring Program is inadequate, then the Structures Monitoring Program was a priori inadequate, and FOTC/NEC had a regulatory obligation to challenge it when the existence of ASR was disclosed. *See id.* at 274.

<sup>47</sup> FOTC/NEC states that the ASR Monitoring Program was provided to them in the NRC Staff Disclosures dated July 6, 2012. Motion at 8. This assertion is irrelevant, because the ASR Monitoring Program was placed in ADAMS Accession on May 22, 2012. Further, NextEra had announced during the April 23, 2012 public meeting that it would submit the ASR Monitoring Program by May 25, 2012. April 23, 2012 Meeting Summary, *supra* note 5, at 5. Therefore, FOTC/NEC should have been aware of this submission in May (and, in fact, make no claim that they were not).

The timing of this contention . . . is founded on our determination that that there is now accrued sufficient information to provide a reasonable fact basis for the contention(s). This contention is based primarily on NRC's recently issued confirmatory action letter regarding NextEra Seabrook actions in response to; NextEra's root cause analysis and extent-of-condition review, and the Staff Safety Evaluation Report (with open items).

Email from R. Shadis to M. Spencer, S. Hamrick, and M. Smith, "RE: 10 CFR 2.323 Consultation Re: Seabrook" (July 9, 2012) (attached). Thus, by FOTC/NEC's own admission, FOTC/NEC already had sufficient information *before* the July 10, 2012 ACRS subcommittee meeting to formulate a contention on ASR. In sum, FOTC/NEC's reference to the ACRS appears nothing more than a pretext for FOTC/NEC's untimely filing.

Further, because the ACRS Transcript does not in fact support FOTC/NEC's claims, and FOTC/NEC provide no other support, none of FOTC/NEC claims are supported by any basis, facts, expert opinion, document, source, or other information demonstrating a genuine, material dispute with the ASR Monitoring Program. FOTC/NEC's unsupported claims do not satisfy the NRC's standards for contention admissibility.

Before discussing FOTC/NEC's eight claims, it should be noted that the proposed contention itself is overly broad and vague. As worded, the proposed contention appears to challenge the adequacy of the entire LRA to manage any effects of aging. *See* Motion at 8 ("The [NextEra LRA] as amended by the [ASR Monitoring Program] . . . fails to demonstrate . . . that the effects of aging . . . are adequately managed."). Such a broad claim does not satisfy 10 C.F.R. § 2.309(f)(1)(i) and is neither supported nor supportable.

**A. None of the FOTC/NEC's Particular Claims Are Timely or Supported**

**1. Baseline Inspection**

FOTC/NEC's first claim, alleging that the Structures Monitoring Program does not provide a baseline for all affected structures from which to register and monitor trending (Motion

at 9), is untimely. This claim appears to be nothing more than unsupported criticism of the Structures Monitoring Program (included in the original LRA) or perhaps the ASR Monitoring Program (submitted in May). It should be noted that the ASR Monitoring Programs states, in no less than five places, that:

NextEra has performed a baseline inspection and ASR associated cracks have been evaluated and categorized. NextEra has assessed 131 accessible areas to date in this manner. The areas affected by ASR have been identified and assessed for apparent degradation from ASR, including estimation of in situ expansion.

LRA Supplement, *supra* note 6, Encl. 2 at 7, 8, 9, 13, 14. If FOTC/NEC had any concern regarding this information, they should have submitted their contention within 30 days of the LRA Supplement, not three months later. FOTC/NEC provide no good cause for their failure to have raised this claim earlier.

The ACRS Transcript does not provide any support for FOTC/NEC's claim that NextEra's program fails to provide a baseline, and thus, the transcript does not supply good cause for making this claim now. Nowhere in the ACRS Transcript is there any statement by the NRC Staff (or ACRS) faulting NextEra's program for not including a baseline. There is one NRC presentation slide indicating that acceptable Aging Management Program for ASR should be based on a number of elements, including a baseline inspection,<sup>48</sup> but this slide does not assert that NextEra's program fails to include this element. Moreover, the need for a structure monitoring program to include a baseline is far from new. The GALL Report describes an acceptable Structures Monitoring Program as being based on NUMARC 93-01, Rev. 2, and Regulatory Guide 1.160, Rev. 2 (which endorses NUMARC 93-01). *See* NUREG-1801, Rev. 1 at XI S-19. NUMARC 93-01 states "The baseline condition of plant structures should be

---

<sup>48</sup> NRC Staff Presentation Before the Advisory Committee on Reactor Safeguards (ACRS), License Renewal Subcommittee, Seabrook Station, Unit 1 (Seabrook), Safety Evaluation Report (SER) with Open Items (July 10, 2012) at 31, attached to ACRS Transcript, *supra* note 8.

established to facilitate condition monitoring activities.”) NUMARC 93-01, Rev. 2, Industry Guideline for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants (April 1996) at 39 (ADAMS Accession No. ML101020415).<sup>49</sup> Seabrook’s LRA explicitly states that its Structures Monitoring Program is based on this guidance (LRA at B-164) and identified the baseline inspections that had been performed at the time of its submittal (LRA at 170-71).

Further, rather than reflecting any failure to provide a baseline for ASR, the ACRS Transcript clearly reflects NextEra’s establishment of such a baseline after its discovery. ACRS Transcript, *supra* note 8, at 121 (baseline inspections completed); *id.* at 93 (collected baseline data using combined crack index and crack width); NextEra slides at 30 (baseline data collected; baseline data gathered). Obviously, such information corroborating the information in the LRA Supplement provides no good cause to now challenge its adequacy.

In addition to being untimely, the claim regarding baseline inspections fails to meet admissibility standards. First, FOTC/NEC do not address the information in the Structures Monitoring Program indicating use of baseline inspections generally, or the information in the LRA Supplement reflecting the establishment of a baseline for ASR monitoring. The failure to address and dispute the information in these programs makes this contention inadmissible under 10 C.F.R. § 2.309(f)(1)(vi) (supporting information “must include references to the specific portions of the application . . . that the petitioner disputes and the supporting reasons for each dispute. . . .”). It is not clear that FOTC/NEC have even read the LRA Supplement, and certainly their contention provides no reasons for disputing the discussion in that LRA Supplement reflecting the establishment of a baseline. As the Commission has previously admonished, “Friends/NEC have an ‘ironclad obligation’ to review the Application thoroughly and to base

---

<sup>49</sup> There are more recent versions of this industry guidance, but they contain the same statement. *See* NUMARC 93-01 Rev. 4A (April 2011) at 42 (ADAMS Accession No. ML11116A198).

their challenges on its contents.” *NextEra Energy Seabrook, LLC* (Seabrook Station, Unit 1), CLI-12-05, 76 N.R.C. \_\_\_, slip op. at 14 (Mar. 8, 2012) (footnote omitted). FOTC/NEC have not done so.

In addition, FOTC/NEC do not provide any basis for their claim, as required by 10 C.F.R. § 2.309(f)(1)(ii). FOTC/NEC do not provide any alleged facts or expert opinion supporting their claim, as required by 10 C.F.R. § 2.309(f)(1)(v). They do not identify any sources or documents on which they intend to rely to support this claim, as required by the same section. And they do not provide sufficient – indeed, any – information to demonstrate a genuine dispute with the application, as 10 C.F.R. § 2.309(f)(1)(vi) requires. As already discussed, the ACRS Transcript provides no such support. Here, NextEra’s ASR Monitoring Program, including the development of a baseline, was devised with the input from multiple subject matter experts and consideration of a number of authoritative sources referenced in the LRA Supplement.<sup>50</sup> FOTC/NEC’s conclusory and unsupported claim provides no basis for challenging this program. As the Commission has made clear, an intervenor must do more than submit “bald or conclusory allegation[s]” of a dispute with the applicant. *Millstone*, CLI-01-24, 54 N.R.C. at 358.

## 2. Visual Inspection

FOTC/NEC’s second claim, that visual inspection of surface indications alone is not adequate gauge the status of internal chemical processes such as ASR (Motion at 9), is untimely. The ASR Monitoring Program clearly states that visual inspection is used to detect ASR:

ASR is detected by visual observation of cracking on the surface of the concrete. The cracking is typically accompanied by the presence of moisture and efflorescence. Concrete affected by expansive ASR is typically characterized by a network or "pattern" of cracks. ASR involves the formation of an alkali-silica gel which expands when exposed to water. Microcracking due to ASR is generated through forces applied by the expanding aggregate particles and/or

---

<sup>50</sup> LRA Supplement, *supra* note 6, Encl. 2 at 6.

swelling of the alkali-silica gel within and around the boundaries of reacting aggregate particles. The ASR gel may exude from the crack forming white secondary deposits at the concrete surface. The gel also often causes a dark discoloration of the cement paste surrounding the crack at the concrete surface. Visual observation of the conditions described above is used to identify the presence of ASR.

LRA Supplement, *supra* note 6, Encl. 2 at 11. *See also id.* at 2-3. Thus, FOTC/NEC could have challenged this aspect of the ASR Monitoring Program after its submittal in May.

Further, the ACRS Transcript provides no good cause for a late challenge to the use of visual inspection described in the program. FOTC/NEC do not identify any statement in the ACRS transcript indicating that visual inspection is an inadequate method of identifying concrete structures that may be affected by ASR. A member of the NRC Staff did state, during the ACRS subcommittee meeting that one cannot *rule out* the presence of ASR without petrographic examination (*see* ACRS Transcript, *supra* note 8, at 170, 176-77 (emphasis added)), but he added: “You can rule in and say yes, if you see pattern cracking and if you want to consider it ASR that's fine.” ACRS Transcript, *supra* note 8, at 170. Thus, this statement does not provide any basis to challenge NextEra’s use of visual inspection to identify cracking to be monitored as ASR.<sup>51</sup> Moreover, the NRC Staff’s position that only petrographic examination unequivocally confirms ASR-induced degradation is not new information, as this position was stated clearly in the NRC’s November 2011 Information Notice:

ASR can be identified as a likely cause of degradation during visual inspection by the unique “craze,” “map” or “patterned” cracking and the presence of alkali-silica gel (see Figure 1 in the enclosure). However, ASR-induced degradation can only be confirmed by optical microscopy performed as part of petrographic examination of concrete core samples.

---

<sup>51</sup> The NRC Staff’s concern appears to have been whether NextEra has ruled out ASR as the cause of pattern cracking observed in two areas of the containment. *See* ACRS Transcript, *supra* note 8, at 160-61. As NextEra responded during the ACRS Subcommittee meeting, “since it was wetted at one time and it does show pattern cracking we are monitoring that as a potential ASR location. So it’s not being ignored, it’s actively being monitored for ASR in that location.” *Id.* at 165-66.

IN 2011-20, *supra* note 2, at 2.

FOTC/NEC's second claim also fails to meet the NRC standards for admissibility. FOTC/NEC do not provide any basis for their claim, as required by 10 C.F.R. § 2.309(f)(1)(ii). FOTC/NEC do not provide any alleged facts or expert opinion supporting their claim, or identify any sources or documents on which they intend to rely to support this claim, as required by 10 C.F.R. § 2.309(f)(1)(v). It does not provide sufficient – indeed, any – information to demonstrate a genuine dispute with the applicant, as 10 C.F.R. § 2.309(f)(1)(vi) requires.

As previously discussed, the ACRS Transcript provides no basis to question use of visual inspection to identify concrete structures that may be affected by ASR. To the extent that FOTC/NEC may be alleging that petrographic examination is needed to confirm that ASR is occurring, FOTC/NEC provide no explanation why the petrographic examination already performed by NextEra (previously publicly disclosed and reflected in the ASR Monitoring Program<sup>52</sup>) is inadequate.

Perhaps FOTC/NEC are implying that there could be ASR cracking occurring inside concrete structures that would not be evidenced from surface cracking, or that interior cracking could be greater than surface indications. If so, FOTC/NEC do not provide one whit of support for such a hypothesis, which finds no support and is actually refuted in the ACRS Transcript. As reflected in the ACRS Transcript, the petrographic examination of core samples at Seabrook has shown that ASR will be worse on the surface. ACRS Transcript, *supra* note 8, at 68-69, 115.

So once you're inside that rebar field you don't see the cracking. This would also be the wetted and dried surface. So you get that alkali flow at that surface. That would also tend to make the reaction greater, but there's two things going on. One, it's free expansion which allows more cracking and then you have that wetting/drying effect. So, the exposed surface is what you can see, but the good

---

<sup>52</sup> NextEra April 23, 2012 Presentation, *supra* note 5, at 12-16; June 8, 2012 CAL Response, *supra* note 5, Encl. at 2-3; LRA Supplement, *supra* note 6, Encl. 2, at 16, 17.

news to that is it's also where the worst conditions are going to be. Pass that around.

MR. BARTON: But there's no guarantee that you wouldn't have cracking deeper in because you've got moisture in that concrete that's captured in there, right?

MR. NOBLE: There's no guarantee you would not have it and we've seen it in the cores. But like I said, the extent is less than what you see on the visible surface.

*Id.* at 69. *See also* NextEra ACRS Presentation, *supra* note 8, at 23 (“When the length of the cores were evaluated (i.e., depth into the wall) it was observed that the cracking was most severe at the exposed surface and reduced towards the center of the wall.”). Further, this same information was provided in the June 8, 2012 CAL Response, *supra* note 5, at 3 (“when the length of the cores were evaluated (i.e., depth into the wall) it was observable that the cracking was most severe at the exposed surface and reduced towards the center of the sample.”).

Again, it bears repeating that NextEra’s ASR Monitoring Program, including use of visual inspection to detect ASR, was devised with the input from multiple subject matter experts and consideration of a number of authoritative sources referenced in the LRA Supplement. FOTC/NEC’s unsupported claim that visual inspection is inadequate fails to demonstrate any genuine dispute.

### 3. Inaccessible Areas

FOTC/NEC’s third claim, that the proposed monitoring program makes no allowance for inspection of inaccessible or buried concrete save for opportunistic inspections which may never happen or which are not necessarily biased toward areas and structures most likely to be severely affected (Motion at 9), is untimely. There is no statement anywhere in the ACRS transcript concerning inspection of inaccessible or buried concrete that may be affected by ASR. Thus, the ACRS provides no good cause for FOTC/NEC’s attempt to challenge the ASR Monitoring

Program on this basis now. Any such challenge to the ASR Monitoring Program should have been raised within 30 days of that program being submitted.

In addition to being untimely, the claim regarding inspection of inaccessible areas fails to meet admissibility standards. First, FOTC/NEC do not address the information in the Structures Monitoring Program providing for inspection of inaccessible areas. The Structures Monitoring Program (which the ASR Monitoring Program augments) states:

Examination of inaccessible areas, such as buried concrete foundations, will be completed during inspections of opportunity *or during focused inspections*. An evaluation of these opportunistic or focused inspections for buried concrete will be performed under the Maintenance Rule Program every 5 years (*if no opportunistic inspection was performed during a 5-year period, a focused 5 year inspection is required*) to ensure that the condition of buried concrete foundations on site is characterized sufficiently to provide reasonable assurance that the foundations on site will perform their intended function through the period of extended operation. Additional inspections may be performed in the event that an opportunistic or focused inspection or visible portions of the concrete foundation reveal degradation and will be entered into the Corrective Action Program (CAP).

LRA at B-165 to B-166 (emphasis added). Thus, the allegation that only opportunistic inspections are conducted is belied by the LRA, and FOTC/NEC's failure to address and dispute these provisions in the Structures Monitoring Program makes their claim inadmissible under 10 C.F.R. § 2.309(f)(1)(vi) (supporting information "must include references to the specific portions of the application . . . that the petitioner disputes and the supporting reasons for each dispute. . .").

In addition, FOTC/NEC do not provide any basis for their claim regarding inspection of inaccessible areas, as required by 10 C.F.R. § 2.309(f)(1)(ii). Although FOTC/NEC later refer to a statement by a member of the Staff that most affected structures are below grade and subjected to about 30 to 40 feet of groundwater, while some are exposed to 80 feet of groundwater (Motion 12, quoting ACRS Transcript, *supra* note 8, at 158), this statement provides no support for

FOTC/NEC's claim that the "[t]he proposed monitoring program makes no allowance for inspection of inaccessible or buried concrete save for opportunistic inspections." Motion at 9. Further, the Staff's statement does not identify any deficiency in the Structures Monitoring Program, including the provisions on inspection of inaccessible structures, and thus, provides no basis for any challenge to the adequacy of that program. FOTC/NEC do not provide any alleged facts or expert opinion supporting their claim, as required by 10 C.F.R. § 2.309(f)(1)(v). They do not identify any sources or documents on which they intend to rely to support this claim, as required by the same section. And they do not provide sufficient – indeed, any – information to demonstrate a genuine dispute with the application, particularly the inspection provisions in the Structures Monitoring Program, as 10 C.F.R. § 2.309(f)(1)(vi) requires. As already discussed, the ACRS Transcript provides no such support.

#### 4. Monitoring of Other Factors

FOTC/NEC's fourth claim, that the proposed monitoring program makes no provision for monitoring ASR-aggravating factors, such as the moisture content, the presence of liquid water, the potential of chemically aggressive water, or the temperature of affected of susceptible concrete (Motion at 9), is untimely. Once more, there is not a single statement in the ACRS Transcript suggesting that the ASR Monitoring Program should include monitoring for moisture content, groundwater chemistry, or concrete temperature. Thus, if FOTC/NEC believed that the ASR program was lacking for not including such monitoring, they should have raised this issue when NextEra submitted its LRA Supplement. The ACRS Transcript provides no good cause for raising this issue now.

For the same reason, the ACRS Transcript provides no basis or support for this claim necessary to meet admissibility standards. Nor does FOTC/NEC provide any other basis, thus

failing to meet 10 C.F.R. § 2.309(f)(1)(ii). In addition, FOTC/NEC do not provide any alleged facts or expert opinion supporting their claim, or identify any sources or documents on which they intend to rely to support this claim, as 10 C.F.R. § 2.309(f)(1)(v) requires. Further, they do not meet the requirement in 10 C.F.R. § 2.309(f)(1)(vi) to provide information demonstrating a genuine dispute with the applicant.

In addition, FOTC/NEC fail to demonstrate the materiality of their claims, as required by 10 C.F.R. § 2.309(f)(1)(iv). FOTC/NEC provide no explanation why monitoring the chemistry of groundwater is material to management of ASR. ASR is caused by alkalis, usually predominantly from the cement, reacting with silica in the aggregate, when moisture is present. IN 2011-20, *supra* note 2, at 2. It is not an aging effect caused by a chemical attack of water.

In any event, the LRA already includes groundwater monitoring. As explained in the Structures Monitoring Program:

Detection of aggressive subsurface environments will be completed through the sampling of groundwater. This procedure monitors groundwater for chloride concentration, sulfate concentration and pH on a 5 year basis.

LRA at B-165.<sup>53</sup> FOTC/NEC do not address this discussion of groundwater monitoring in the application, as required by 10 C.F.R. § 2.309(f)(1)(vi), and thus fail to demonstrate any genuine dispute with it. As previously discussed, the NRC's pleading standards require a petitioner to read the pertinent portions of the license application, state the applicant's position and the petitioner's opposing view, and explain why it has a disagreement with the applicant. 54 Fed. Reg. at 33,170. FOTC/NEC have not done so.

---

<sup>53</sup> As was also discussed during the ACRS subcommittee meeting, NextEra has implemented a procedure to maintain the annulus between containment and the containment enclosure building in a dewatered state and installed a camera to monitor it. ACRS Transcript, *supra* note 8, at 54. The prior commitment to dewater this area is reflected in the ASR Monitoring Program. LRA Supplement, *supra* note 6, Encl. 2 at 17-18 ("NextEra has previously committed to maintaining the exterior surface of the Containment Structure in a dewatered state (LRA Commitment #52).").

## 5. Training

FOTC/NEC's fifth claim, alleging that first field observations are to be done by untrained or minimally-trained personnel (Motion at 9), is untimely and entirely unsupported. Nowhere in the ACRS Transcript or any of the presentation materials is there any support for this claim. Consequently, the ACRS Transcript provides no good cause for FOTC/NEC's attempt to challenge the ASR Monitoring Program on this basis.

Moreover, this claim is also inadmissible because it is unsupported and fails to address information in the LRA. The Structures Monitoring Program (which the ASR Monitoring Program augments) clearly states:

Individuals conducting the inspection and reviewing the results are qualified per the Seabrook Station Structures Monitoring Program, which is in accordance with the requirements specified in ACI 349.3R-96, "Evaluation of Existing Nuclear Safety related Concrete Structures". Individuals conducting the inspection and reviewing the results are to possess expertise in the design and inspection of steel, concrete and masonry structures. These individuals must either be a licensed Professional Engineer experienced in this area, or will work under the direction of a licensed Professional Engineer experienced in this area.

LRA at B-165.<sup>54</sup> Similarly, the ASR Monitoring Program states,

ASR is detected by visual inspections performed by qualified individuals. These individuals must either be a licensed Professional Engineer experienced in this area, or will work under the direction of a licensed Professional Engineer.

LRA Supplement, *supra* note 6, Encl. 2 at 12. FOTC/NEC do not address this information or provide any basis for disputing it. FOTC/NEC do not identify any facts or expert opinion that supports their claim. They do not identify any sources or documents on which they intend to rely to support this claim. They do not provide any information demonstrating a genuine dispute with

---

<sup>54</sup> It should be noted that personnel who inspect the containment concrete surfaces under the ASME Section XI, Subsection IWF Program discussed in Section B.2.1.29 of the LRA, are required be qualified in accordance with IWA-2300. *See* 10 C.F.R. § 50.55a(b)(1)(viii)(2)(F). Any challenge to the sufficiency of this qualification requirement is barred by 10 C.F.R. § 2.335(b).

the application. Therefore, this claim does not satisfy the standards in 10 C.F.R. § 2.309(ii), (v) or (vi) and is inadmissible.

#### 6. Active Mitigation

FOTC/NEC's sixth claim, alleging that the ASR Monitoring Program fails because there is no active component proposed to arrest, mitigate or manage the growth of ASR, such as a stringent de-watering program, waterproofing or waterproof membranes (Motion at 9-10, 12), is untimely. The ASR Monitoring Program explicitly states that the program does not rely on preventive actions (LRA Supplement, *supra* note 6, Encl. 2 at 10), so FOTC/NEC could have challenged the absence of preventive actions after the ASR Monitoring Program was filed.<sup>55</sup> FOTC/NEC provide no good cause for waiting three months to do so. Further, the ACRS Transcript provides no such good cause for FOTC/NEC's delay, as there is not a single statement in that transcript indicating that NextEra's program needs to include dewatering or waterproofing.

In addition, this claim fails to meet the contention admissibility standards, because it is not supported by any basis (per 10 C.F.R. § 2.309(f)(1)(ii)), is not supported by any facts or expert opinion and does not identify any sources or documents on which FOTC/NEC intend to rely (per 10 C.F.R. § 2.309(f)(1)(v)), and does not include any information demonstrating a genuine dispute with the applicant (per 10 C.F.R. § 2.309(f)(1)(vi)). FOTC/NEC do not identify any NRC requirement that an applicant take active measures to arrest ASR. Indeed, the NRC's license renewal rules require that aging effects be adequately "managed" not "arrested" or precluded. *See* 10 C.F.R. § 54.17(a)(3). In addition, NRC guidance clearly indicates that aging

---

<sup>55</sup> It should be noted that NextEra has made a previous commitment to maintain the area between the containment and the containment enclosure building in a dewatered state. *See supra* note 53. FOTC/NEC provide no basis to challenge the adequacy of this commitment.

may be adequately managed through condition or performance monitoring that does not include preventive actions. *See* Standard Review Plan for Review of License Renewal Applications for Nuclear Power Plants, NUREG-1800, Rev. 1 (Sept. 2005) at A.1-3 (“For condition or performance monitoring programs, they do not rely on preventive actions and thus, this information need not be provided.”). Nor does FOTC/NEC provide any information indicating that arresting ASR is needed to maintain the current licensing basis, or that actions such as dewatering or installation of new waterproof membranes would be practical or effective.<sup>56</sup> FOTC/NEC assert that “there is no sign of a cost/benefit analysis for such an undertaking” (Motion at 12), but do not identify any NRC requirement that a license renewal applicant perform cost benefit analyses in support of its choice of measures to manage the effects of aging.

Thus, FOTC/NEC’s claim that active mitigation is required is nothing more than an unsupported criticism of NextEra’s ASR Monitoring Program that could have been brought months ago. It is therefore inadmissible.

## 7. Inspection Intervals

FOTC/NEC’s seventh claim, alleging that NextEra has proposed intervals of inspection of sixth months that appears nominal and not tied to any calculation of the rate of growth of ASR in any given set of locations (Motion at 10), is untimely and inadmissible. As reflected in the LRA Supplement, monitoring of the Cracking Index and Individual Crack Width will be

---

<sup>56</sup> Not only does the ACRS Transcript not support the need for preventive measures, it includes considerable discussion why further measures appear impractical. *See* ACRS Transcript, *supra* note 8, at 85-86 (“there really hasn’t been any mitigation strategy for existing concrete that’s been shown to have any efficacy. . . . [S]topping groundwater intrusion . . . would not necessarily prevent progression of ASR”); *id.* at 89 (“injecting [waterproofing] material . . . helped in some localized areas . . . [but] tended to move groundwater from one location to another.” “We put five dewatering systems in. . . That does slow groundwater intrusion . . . but . . . doesn’t stop it completely or dry it out.”); *id.* at 84 (“no efficacy in using [lithium] as a topical applicant”). *See also* NextEra ACRS Presentation, *supra* note 8, at 28 (“ASR mitigation techniques have been shown to be ineffective”). FOTC/NEC have not provided any information demonstrating any genuine dispute with NextEra on these points.

performed at six months intervals in the areas identified through baseline inspection as having the largest combined cracking index; and trend data from these follow-up inspections will be used in determining the progression of ASR degradation and a basis for any change to the frequency of the inspection of ASR affected areas. LRA Supplement, *supra* note 6, Encl. 2 at 3, 7, 9 and 13. Thus, this information was included in the May submittal and could have been challenged at that time.<sup>57</sup> FOTC/NEC does not identify any portion of the ACRS Transcript identifying concern with the initial six month monitoring interval currently in place,<sup>58</sup> or provide any other good cause for seeking to challenge this aspect of the monitoring program at this late juncture.

Rather than providing any basis for concern with the initial six month interval, the limited discussion of the crack monitoring inspections during the ACRS subcommittee meeting supports the reasonableness of the initial interval. As reflected in the transcript, the rate of progression is very slow, and the first two inspection results having been “essentially identical” (ACRS Transcript at 80), with “no evidence or no suggestion of any change in concrete expansion” (*id.* at 97). Such information, which merely supports the approach described in the LRA Supplement, cannot provide a basis for FOTC/NEC’s late challenge.

---

<sup>57</sup> Indeed, the initial inspection frequency and adjustment as trending data is developed was discussed both in the March 30 2012 Supplemental RAI Response and in the April 23, 2012 public meeting. Thus, this information has been available for nearly six months. March 30, 2012 Supplemental RAI Response, *supra* note 15, at 17; NextEra April 23, 2012 Presentation, *supra* note 5, at 35-36; April 23, 2012 Meeting Summary, *supra* note 5, at 4.

<sup>58</sup> During the ACRS meeting, the NRC Staff did express concern that the aging management program does not include trending data to determine the extent and rate of degradation of mechanical properties from tests. ACRS Transcript, *supra* note 8, at 149. The NRC Staff explained that the long term degradation of mechanical properties (*id.* at 174), and the need to have more data on long term tests (*id.* at 177). The NRC Staff acknowledged their review was evolving and could change with new information. *Id.* at 149. This discussion relates to the mechanical properties of concrete, not the adequacy of monitoring crack growth to detect any progression at six month intervals. As previously discussed, NextEra has commissioned the University of Texas to provide full scale tests to provide this information.

Further, FOTC/NEC's challenge to the initial inspection frequency is not supported by any basis, facts or expert opinion, document or source, or other information demonstrating a genuine dispute with the application. Both NextEra and the Staff have indicated that ASR progression occurs slowly.<sup>59</sup> FOTC/NEC provides no information that indicates that expansion of ASR cracking might progress at such a rate as to challenge the integrity of structures during an inspection interval. Again, NextEra's program was developed with the assistance of well qualified subject matter experts, and based on a number of authoritative sources referenced in the LRA Supplement.<sup>60</sup> FOTC/NEC's unsupported assertion simply provides no basis to question the adequacy of the program. Nor does FOTC/NEC provide any explanation why their concern is material. As NextEra has explained on several occasions, it takes about two to three years of monitoring to develop a trend on rate of cracking progression. ACRS Transcript at 80; June 8, 2012 CAL Response, *supra* note 5, Encl. 1 at 6. Because the period of extended operation will not commence until 2030, the current inspection and monitoring provides ample time to develop a trend and make any adjustment that might be needed prior to the period of extended operation. For all of these reasons, this claim fails to meet the admissibility standards in 10 C.F.R. § 2.309(f)(1)(ii), (9v), (v) and (vi).

## 8. Structural Dynamics

FOTC/NEC's last claim, alleging that NextEra has determined the extent to which concrete has degraded or lost its structural function by relying on testing measurements of a very limited number of samples for a very limited number of structural dynamics (Motion at 10), is untimely. While the ACRS Transcript reflects the fact that the large scale testing to provide

---

<sup>59</sup> ACRS Transcript, *supra* note 8, at 80; IN 2011-20, *supra* note 2, at 2; *See* Seabrook Concrete Degradation by Alkali Silica Reaction – Public Meeting (April 23, 2012), *supra* note 25, at 3.

<sup>60</sup> LRA Supplement, *supra* note 6, Encl. 2 at 6.

representative test data on the strength of concrete elements is a longer term action not yet complete, that information is not new. That this longer term, large scale testing was planned was reflected in the March 30, 2012 Supplemental RAI Response,<sup>61</sup> discussed in the April 23, 2012 meeting,<sup>62</sup> described in the June 8 2012 CAL Response,<sup>63</sup> and described in the June 21, 2012 CAL Response.<sup>64</sup> The schedule for completion of this large scale testing in 2014 was included in the June 8 2012 CAL Response.<sup>65</sup> Thus, the ACRS Transcript provides no good cause for the late complaint that the ASR Monitoring Program has been submitted in advance of longer term large scale testing. FOTC/NEC should have known this when the ASR Monitoring Program was submitted in May.

In addition, FOTC/NEC's last claim fails to meet the admissibility standards. First, this claim appears to challenge NextEra's operability determinations and appears unrelated to the aging management program (which must manage aging in a manner maintaining the CLB).<sup>66</sup> Therefore, this claim does not meet 10 C.F.R. § 2.309(f)(1)(iii) (requiring demonstration that the issues is within the scope of the proceeding) or 10 C.F.R. § 2.309(f)(1)(iv) (requiring demonstration that the issue is material to the findings that the NRC must make). In addition, FOTC/NEC do not provide any basis for their claim, as required by 10 C.F.R. § 2.309(f)(1)(ii). The only document that FOTC/NEC identifies as a basis for their claim is ACRS Transcript, but

---

<sup>61</sup> March 30, 2012 Supplemental RAI Response, *supra* note 15. Encl. 1 at 19.

<sup>62</sup> April 23, 2012 Meeting Summary, *supra* note 5, at 4; NextEra April 23, 2012 Presentation, *supra* note 5, at 34.

<sup>63</sup> June 8, 2012 CAL Response, *supra* note 5, Encl. at 6, 9.

<sup>64</sup> June 21, 2012 CAL Response, *supra* note 36.

<sup>65</sup> June 8, 2012 CAL Response, *supra* note 5, Encl. at 9.

<sup>66</sup> 10 C.F.R. § 54.20. *See also* 56 Fed. Reg. 64,943, 64,952 (Dec. 13, 1991) ("Both the licensees' programs for ensuring safe operation and the Commission's regulatory oversight program have been effective in identifying and correcting plant-specific noncompliance with the licensing bases. These programs will continue to be implemented throughout the remaining term of the operating license, as well as the term of any renewed license. In view of the comprehensiveness, effectiveness, and continuing nature of these programs, the Commission concludes that license renewal should not include a new, broadscoped inquiry into compliance that is separate from and parallel to the Commission's ongoing compliance oversight activity.").

that transcript does not express any concern with NextEra's plan for large scale testing. To the contrary, the NRC Staff stated:

So, and the applicant initially planned to do small-scale tests commonly used when there's an ASR to detect the mechanical properties changes and also to determine where they are in the degradation phase, how much the ASR has progressed and how much is left. However, they have engaged the experts now from University of Texas and they are going to -- in a different approach which is they're going to do large-scale tests as the applicant ha[s] explained. *We do agree with them that this could be a useful way to do it* but we haven't looked at it in more detail.

ACRS Transcript, *supra* note 8, at 171-72 (emphasis added). FOTC/NEC do not identify any other sources or documents on which they intends to rely to support this claim, as required by 10 C.F.R. § 2.309(f)(1)(v), or provide any alleged facts or expert opinion supporting their claim, as required by that same section.

Most importantly, FOTC/NEC have not shown that their claim is material to the findings that the NRC must make, as required by 10 C.F.R. § 2.309(f)(1)(iv), or provided sufficient information to demonstrate a genuine dispute with the applicant on a material issue, as 10 C.F.R. § 2.309(f)(1)(vi) requires. FOTC/NEC do not dispute that NextEra has commissioned large scale tests to determine to determine the strength of representative structural elements as ASR progresses. FOTC/NEC do not dispute the sufficiency of the parameters which will be examined, which were identified in both the April 23, 2012 meeting<sup>67</sup> and in the testing plan submitted with the June 21, 2012 CAL Response.<sup>68</sup> FOTC/NEC do not dispute the adequacy of the testing methodology also described in depth in the June 21, 2012 CAL Response.<sup>69</sup> FOTC/NEC do not dispute NextEra's commitment to adjust the action levels in the ASR

---

<sup>67</sup> NextEra April 23, 2012 Presentation, *supra* note 5, at 34.

<sup>68</sup> June 21, 2012 CAL Response, *supra* note 36.

<sup>69</sup> *Id.*

Monitoring Program based on the large scale test results.<sup>70</sup> And FOTC/NEC do not dispute that these actions are scheduled to be complete long before the period of extended operation.<sup>71</sup> In sum, no genuine or material dispute is apparent.

#### **V. FOTC/NEC'S SUA SPONTE REQUEST IS UNFOUNDED AND IMPROPER**

Separate from their proposed contention, FOTC/NEC insinuate that NextEra willfully violated 10 C.F.R. § 50.9 by concealing knowledge of the presence of ASR when it filed the LRA (Motion at 3-5), asserting that “[i]t strains to credulity to accept that NextEra did not know from the get-go that it was dealing with Alkali Silica Reaction” (*id.* at 3) and “that NextEra’s decision to omit consideration of this known condition constitutes a material false statement; subject to sanctions” (*id.* at 5). FOTC/NEC make it clear that these allegations are not part of their contention (*id.* at 6)<sup>72</sup> and that they are not seeking sanctions (*id.* at 5 n.6), but suggest that the Board take up this matter *sua sponte* (*id.*). FOTC/NEC’s suggestion must be denied because it is both inconsistent with the NRC rules and utterly baseless.

Under the NRC rules, matters not put into controversy by the parties will be examined and decided by the presiding officer only where “the presiding officer determines that a serious safety, environmental, or common defense and security matter exists, *and the Commission approves of an examination of and decision on the matter upon its referral by the presiding*

---

<sup>70</sup> March 30, 2012 Supplemental RAI Response, *supra* note 15, Encl. 1 at 18 (“Based on test results, thresholds will be established for corrective action prior to loss of intended functions”); NextEra April 23, 2012 Presentation, *supra* note 5, at 36 (“AMP criteria and frequency will be revised as the full-scale concrete beam test program develops”); June 8, 2012 CAL Response, *supra* note 5, Encl. at 6 (“Actions levels will be established based on correlation between the structural testing results and observed expansion levels/crack mapping”); NextEra ACRS Presentation, *supra* note 8, at 33 (“Actions levels will be established based on correlation between the test results and observed expansion levels/crack indices. Update ASR Monitoring Program with plant specific action levels.”).

<sup>71</sup> June 8, 2012 CAL Response, *supra* note 5, Encl. at 9.

<sup>72</sup> As FOTC/NEC state, “Friends/NEC believes its duty to be done in informing the Atomic Safety and Licensing Board . . . of this perceived transgression of regulations; Friends/NEC wishes to get on with discussion of the remaining factual background and then evaluating the merits of its proposed contention.” Motion at 6.

*officer.*” 10 C.F.R. § 2.340(a) (emphasis added). Such a determination must be based on “specific facts.” *Louisiana Power & Light Co.* (Waterford Steam Electric Station, Unit 3), CLI-86-1, 23 N.R.C. 1, 5 (1986) (citing the former 10 C.F.R. § 2.760a and *Texas Utilities Generating Co.* (Comanche Peak Steam Electric Station, Units 1 and 2), CLI-81-24, 14 N.R.C. 614, 615 (1981). Further, “[s]uch authority is to be exercised only in extraordinary circumstances.” Commission Statement of Policy on Conduct of Adjudicatory Proceedings, CLI-98-12, 48 N.R.C. 18, 23 (1998).

Here, FOTC/NEC’s scurrilous allegations are not based on “specific facts” demonstrating a serious safety issue but rather on nothing more than pure speculation and conjecture. The assertion that NextEra must have known from the “get-go” that it was dealing with ASR is refuted by the undisputed facts that (1) ASR had never before been seen at a U.S. nuclear plant,<sup>73</sup> (2) the GALL Report reflected the common understanding that it would not be an applicable aging effect for concrete with aggregate that had been tested under specified standards (which had been employed when Seabrook was built),<sup>74</sup> and (3) it was not until 2011 that the NRC issued an Information Notice informing licensees that certain construction testing under certain standards might not accurately predict aggregate reactivity when dealing with late- or slow-expanding aggregates.<sup>75</sup>

FOTC/NEC appear to be relying solely on their inference from the NRC’s May 16, 2012 Confirmatory Action letter (*supra* note 33), which stated that NextEra identified concrete degradation of below grade structures in June 2009. Motion at 2 n.1. That letter makes no statement that the conditions observed in June 2009 were ASR or should have been recognized

---

<sup>73</sup> See *supra* note 3.

<sup>74</sup> See *supra* note 4.

<sup>75</sup> IN 2011-20, *supra* note 2, at 3.

as such. Nor does it support FOTC/NEC's characterization that NextEra discovered concrete structures were "substantially deteriorated." *Compare* Motion at 2. In fact, the degradation that was observed in June 2009 was evidence during walkdowns of groundwater intrusion and some superficial corrosion on exposed steel (conduit supports, etc.) in the affected areas. There was no indication of impact to the concrete other than some localized hairline cracks well below the size that would be of concern. Further, FOTC/NEC's attempt to construe this NRC letter as reflecting identification of ASR in 2009 is refuted by the NRC Staff's inspection findings:

As a result, ASR degradation of the CB concrete, which could reduce the concrete strength to less than its design basis requirements, was not identified or evaluated by NextEra until core bores were taken and analyzed in August 2010 as part of Seabrook license renewal initiatives.<sup>76</sup>

In sum, FOTC/NEC's scurrilous allegations have no basis, and their suggestion that this matter be considered *sua sponte* must be denied.

## VI. CONCLUSION

For all of the above stated reasons, the proposed contention should be rejected as inadmissible.

Respectfully Submitted,

/Signed electronically by David R. Lewis/

---

David R. Lewis  
PILLSBURY WINTHROP SHAW PITTMAN LLP  
2300 N Street, NW  
Washington, DC 20037-1128  
Tel. (202) 663-8474

Counsel for NextEra

Dated: September 21, 2012

---

<sup>76</sup> NRC Letter, Seabrook Station Unit No. 1 – NRC Integrated Inspection Report 05000443/2011002 (May 12, 2011), Encl. at 9 (ADAMS Accession No. ML111330689).

**From:** [Raymond Shadis](#)  
**To:** ["Spencer, Mary"](#); [Hamrick, Steven](#); [Smith, Maxwell](#)  
**Subject:** RE: 10 CFR 2.323 Consultation Re: Seabrook  
**Date:** Monday, July 09, 2012 11:52:03 AM

---

Good Day,

Friends of the Coast/New England Coalition is considering filing three proposed new contentions, pursuant to 10 C.F.R. 2.309(f)(1) and 2.309(f)(2), in the NextEra Seabrook Generating Station Proceeding.

The first new contention will challenge the failure of the Environmental Report for the NextEra Seabrook Generating Station License renewal application to address the environmental impacts of spent fuel pool leakage and/or fires and accidents; as well as the environmental impacts that may occur if a spent fuel repository does not become available. The contention is based on the United States Court of Appeals for the District of Columbia Circuit's recent decision in *State of New York v. NRC*, No. 11-1045 (June 8, 2012), which invalidated the Nuclear Regulatory Commission's Waste Confidence Decision Update (75 Fed. Reg. 81,037 (Dec. 23, 2010)) and the NRC's final rule regarding Consideration of Environmental Impacts of Spent Fuel After Cessation of Reactor Operation (75 Fed. Reg. 81,032 (Dec. 23, 2010)). *State of New York* vacated the generic findings in 10 C.F.R. 51.23(a) regarding the safety and environmental impacts of spent fuel storage. As a result, the NRC no longer has any legal basis for Section 51.23(b), which relies on those findings to exempt both the agency staff and license applicants from addressing long-term spent fuel storage impacts in individual licensing proceedings. Accordingly, these impacts must be addressed before a license is issued.

The second contention : NextEra Seabrook has not incorporated into its License Renewal Application (LRA) adequate consideration of alkali –silica reaction in the Time-Limited Aging Analysis (TLAA) or Aging Management Plan (AMP) for affected safety-related structures, systems, and components(SSCs) or for those affected non-safety related SSCs , the failure of which may affect safety-related SSCs. The timing of this contention, as well as the third proposed contention, is founded on our determination that that there is now accrued sufficient information to provide a reasonable fact basis for the contention(s). This contention is based primarily on NRC's recently issued confirmatory action letter regarding NextEra Seabrook actions in response to; NextEra's root cause analysis and extent-of-condition review, and the Staff Safety Evaluation Report (with open items)

[The third contention: NextEra has not incorporated into its LRA adequate consideration of water penetration into the space between concrete containment and steel containment liner \(or shell\) and the consequent corrosion and weakening of the steel liner; and the potential weakening of the containment concrete and/or corrosion and weakening of the steel liner and containment-embedded steel reinforcement and fasteners.](#)

Pursuant to 10 C.F.R. 2.323, I am writing to see if you would oppose this Motion. I intend to file at least the first proposed contention later today, Monday, July 9th, and I would appreciate a response as soon as possible. If you have any questions, please do not hesitate to contact me.

[Ray Shadis](#)  
for Friends/NEC

Raymond Shadis  
Friends of the Coast/New England Coalition  
207-882-7801  
207-380-5994 (cell)

---

**UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION**

Before the Atomic Safety and Licensing Board

In the Matter of	)	
	)	Docket No. 50-443-LR
NextEra Energy Seabrook, LLC	)	
	)	ASLBP No. 10-906-02-LR
(Seabrook Station, Unit 1)	)	

**CERTIFICATE OF SERVICE**

I hereby certify that NextEra's Answer Opposing Admission of Contention Concerning Alkali-Silica Reaction, dated September 21, 2012, has been served through the E-Filing system on the participants in the above-captioned proceeding, this 21st day of September, 2012.

/Signed electronically by David R. Lewis/

\_\_\_\_\_  
David R. Lewis