UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
	)	
NEXTERA ENERGY SEABROOK LLC	)	Docket No. 50-443-LA2
	)	
(Seabrook Station, Unit 1)	)	
	)	

NRC STAFF'S ANSWER TO C-10 RESEARCH AND EDUCATION FOUNDATION, INC. PETITION FOR LEAVE TO INTERVENE

Brian G. Harris
Anita Ghosh
Jeremy Wachutka

Counsel for NRC Staff

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INTRODUCTION

Pursuant to 10 C.F.R. § 2.309(i), the U.S. Nuclear Regulatory Commission ("NRC") staff ("Staff") hereby files its answer to the C-10 Research and Education Foundation, Inc. ("C-10") Petition for Leave to Intervene ("Petition")[1] regarding the NextEra Energy Seabrook, LLC ("NextEra") license amendment request ("LAR") to adopt a methodology to account for the impacts of alkali-silica reaction ("ASR") on concrete structures at Seabrook Station, Unit No. 1 ("Seabrook").[2]

While portions of C-10's proposed contentions, when combined, could amount to a single admissible contention, C-10 has failed to establish standing in its Petition. Specifically, C-10 has not satisfied its burden of either demonstrating the traditional requirements for standing or demonstrating the existence of a proximity presumption of standing. Consequently, and without regard to the admissibility of C-10's proposed contentions, the Atomic Safety and Licensing Board ("Board") should deny the Petition. Should the Board examine the admissibility

[1] C-10 Research and Education Foundation, Inc. Petition for Leave to Intervene: Nuclear Regulatory Commission Docket No. 50-443 (April 10, 2017) (Agencywide Documents Access and Management System ("ADAMS") Accession No. ML17100B013) ("Petition").

[2] License Amendment Request 16-03, Revise Current Licensing Basis to Adopt a Methodology for the Analysis of Seismic Category I Structures with Concrete Affected by Alkali-Silica Reaction (Aug. 1, 2016) (ADAMS Accession No. ML16216A240) ("LAR").

of C-10's proposed contentions independent of the necessary showing of standing, the Board could find that, as explained below, when combined, portions of the proposed contentions amount to a single admissible contention. However, due to C-10's failure to establish standing to intervene in this proceeding, the Petition should be denied.

BACKGROUND

This proceeding concerns NextEra's request for a license amendment to revise Seabrook's Updated Final Safety Analysis Report ("UFSAR") to include methods for analyzing seismic Category I structures with concrete affected by ASR. Since 2010, the NRC has monitored, and continues to actively monitor, NextEra's treatment and analysis of ASR at Seabrook.

I. The NRC's Review of ASR at Seabrook

ASR is a chemical reaction in concrete in which alkalis, usually from the cement, react with certain reactive types of silica in the aggregate, in the presence of moisture.[3] This reaction produces an alkali-silica gel that can absorb water and expand to cause micro-cracking of the concrete.[4] Excessive expansion of the gel may lead to significant cracking that may change the mechanical properties of the concrete.[5] NextEra initially identified pattern cracking typical of ASR at Seabrook in the "B" Electrical Tunnel in 2009, and, subsequently, in several other seismic Category I structures.[6] Since 2010, the NRC has been actively monitoring NextEra's treatment and analysis of ASR at Seabrook under the NRC's reactor oversight process

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[3] NRC Information Notice 2011-20: Concrete Degradation by Alkali-Silica Reaction, at 2 (Nov. 18, 2011) (ADAMS Accession No. ML112241029) ("NRC IN 2011-20").

[4] *Id*.

[5] *Id*.

[6] LAR at 8 of 73 (unnumbered).

("ROP"),[7] and pursuant to the Staff's review of NextEra's 2010 license renewal application ("LRA") for Seabrook.[8]

On November 18, 2010, the Staff sent NextEra a request for additional information ("RAI") regarding NextEra's LRA, which noted that "cracks due to [ASR] have been observed in different Seabrook plant concrete structures, including the concrete enclosure building."[9] Specifically, the Staff asked NextEra to provide information on the results of concrete tests conducted at Seabrook in 2010. In a December 17, 2010, response, NextEra stated that it had performed a five-year interval inspection of the Containment Structure in accordance with ASME Section XI, Subsection IWL, using the guidance of American Concrete Institute ("ACI") 349.3R, "Evaluation of Existing Nuclear Safety-Related Concrete Structures."[10] Based on that inspection, NextEra found that there "has been no sign of detrimental cracking in the Containment Structure based on the inspection performed using the guidance of ACI 349.3R."[11] NextEra also stated that it had completed core sample analyses for petrographic evaluation, compressive strength, and modulus of elasticity. NextEra stated that these concrete tests had

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[7] Seabrook Station – NRC Inspection Report 05000443/2011010 Related to Alkali-Silica Reaction Issue in Safety Related Structures, Enclosure at ii (Mar. 26, 2012) (ADAMS Accession No. ML120480066) ("ASR IR"). The ROP is a risk-informed process for inspecting and assessing licensee performance. NRC Inspection Manual Chapter ("IMC") 0308, Reactor Oversight Process (ROP) Basis Document, at 1-2 (Nov. 8, 2007) (ADAMS Accession No. ML071860181) ("IMC 0308").

[8] Letter from Paul O. Freeman, Site Vice President, NextEra, to NRC, Seabrook Station Application for Renewed Operating License (May 25, 2010) (ADAMS Accession No. ML101590099) ("LRA").

[9] Request for Additional Information Related to the Review of the Seabrook Station License Renewal Application (TAC No ME4028) – Aging Management Programs, Enclosure, at 10 (Nov. 18, 2010) (ADAMS Accession No. ML103090558).

[10] Seabrook Station, Response to Request for Additional Information, NextEra Energy Seabrook License Renewal Application, Aging Management Programs, Enclosure 1, at 33 (Dec. 17, 2010) (ADAMS Accession No. ML103540534).

[11] *Id.*

confirmed the presence of ASR in the "B" Electrical Tunnel.[12] Moreover, the tests had identified a change in material properties due to ASR, with reductions from expected values reported in compressive strength and modulus of elasticity.[13] NextEra and the Staff continue to engage in RAIs on the LRA with respect to ASR.

NextEra conducted an interim structural assessment in 2012, which evaluated the structural adequacy of reinforced concrete structures at Seabrook affected by ASR and system/component anchorages in ASR-affected concrete.[14] The evaluation concluded that the reinforced structures at Seabrook remained suitable for continued service for an interim period given the extent of ASR identified at that time.[15] The evaluation noted that additional testing was required; these test programs would produce the data necessary to fully assess design compliance for the concrete structures at Seabrook.[16]

On May 16, 2012, the Staff issued Confirmatory Action Letter ("CAL") 1-2012-002 to NextEra to confirm the licensee's commitments with respect to planned actions to evaluate ASR-affected reinforced concrete structures at Seabrook.[17] In response to the CAL, NextEra committed to provide information to the Staff to allow it to assess the adequacy of NextEra's corrective actions to address this significant condition adverse to quality.[18] The Staff continues its oversight of ASR issues at Seabrook through regular 6-month inspections.[19]

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[12] Confirmatory Action Letter, Seabrook Station, Unit 1 – Information Related to Concrete Degradation Issues, at 1 (May 16, 2012) (ADAMS Accession No. ML12125A172) ("CAL").

[13] *Id*.

[14] LAR at 9 of 73 (unnumbered).

[15] *Id*.

[16] *Id*.

[17] CAL at 1.

[18] Seabrook Station, Unit No 1 – Confirmatory Action Letter Follow-Up Inspection - NRC Inspection Report 05000443/2012010 (Aug. 9, 2013) (ADAMS Accession No. ML13221A172).

[19] *See, e.g.*, *id.*

NextEra conducted large-scale test programs and used the test results and existing literature to develop a methodology for evaluating ASR-affected reinforced concrete structures at Seabrook.[20] This methodology for analyzing ASR in reinforced concrete structures at Seabrook is the basis for the LAR at issue in this proceeding.[21]

II. The Procedural History of ASR in the Seabrook License Renewal Adjudication

On October 20, 2010, Friends of the Coast and the New England Coalition ("FOTC/NEC") filed an initial petition to intervene in the Seabrook license renewal proceeding.[22] On February 15, 2011, the Atomic Safety and Licensing Board designated to preside over the proceeding found that FOTC/NEC had raised at least one admissible contention and admitted FOTC/NEC as a party to the proceeding.[23] On August 27, 2012, FOTC/NEC submitted a new contention challenging NextEra's aging management program for ASR at Seabrook during the license renewal period.[24] On November 8, 2012, the board issued an order denying admission of the proposed contention related to ASR on timeliness grounds.[25] On November 19, 2012, FOTC/NEC filed an interlocutory appeal before the Commission on the board's order denying admission of the proposed contention related to ASR.[26] On February 20, 2013, the Commission

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[20] LAR at 9 of 73 (unnumbered).

[21] *Id*.

[22] Friends of the Coast and New England Coalition Petition for Leave to Intervene, Request for Hearing, and Admission of Contentions (Oct. 20, 2010) (ADAMS Accession No. ML102940558; ADAMS Package Accession No. ML102940545).

[23] *NextEra Energy Seabrook, LLC* (Seabrook Station, Unit 1), LBP-11-02, 73 NRC 28 (2011), *aff'd in part, rev'd in part,* CLI-12-5, 75 NRC 201 (2012).

[24] 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 Concrete Structures, at 1-2 (Aug. 27, 2012) (ADAMS Accession No. ML12241A061).

[25] *See NextEra Energy Seabrook, LLC* (Seabrook Station, Unit 1), Memorandum and Order (Denying Motion for Leave to File New Contention) (Nov. 8, 2012) (unpublished) (ADAMS Accession No. ML12313A361).

[26] New England Coalition and Friends of the Coast's Notice of Appeal of ASLBP No. 10-906-02-LR-BD01 to NextEra Energy Seabrook, LLC (Nov. 19, 2012) (ADAMS Accession No. ML12324A478); Brief in Support of the New England Coalition and Friends of the Coast Appeal of ASLBP No. 10-906-02-

denied the petition for interlocutory review, without prejudice.[27] On August 5, 2015, the board dismissed the remaining admitted contention pursuant to a settlement agreement between the parties and terminated the license renewal proceeding.[28]

III. NextEra's License Amendment Request

On August 1, 2016, NextEra submitted the proposed LAR seeking to revise Seabrook's UFSAR to include methods for analyzing seismic Category I structures with concrete affected by ASR.[29] The LAR notes that Seismic Category I structures other than the containment building at Seabrook were originally designed to the requirements of ACI 318-71.[30] The Seabrook containment building was originally designed in accordance with the requirements of Section III of the American Society of Mechanical Engineers ("ASME") Boiler & Pressure Vessel Code (1975 Edition).[31] Neither of these codes, however, include methods to analyze and address the effects of ASR on structural properties.[32] NextEra states that the proposed LAR adopts a method to incorporate the material effects and loads of ASR into the Seabrook design basis to demonstrate that structures with ASR at Seabrook continue to meet the design codes for original construction, with the additional demand from ASR concrete expansion.[33]

The LAR states that due to limitations and a lack of representativeness in the publicly available test data related to ASR effects on structures, NextEra commissioned MPR

LR-BD01 (Denying Motion for Leave to File New Contention) (Nov. 19, 2012) (ADAMS Accession No. ML12324A478).

[27] *NextEra Energy Seabrook, LLC* (Seabrook Station, Unit 1), CLI-13-03, 77 NRC 51 (2013).

[28] *NextEra Energy Seabrook, LLC* (Seabrook Station, Unit 1), LBP-15-22, 82 NRC 49 (2015).

[29] LAR at 7-8 of 73 (unnumbered).

[30] *Id*.

[31] *Id*.

[32] *Id*. at 8, 10 of 73 (unnumbered).

[33] *Id*.

Associates ("MPR") to conduct large-scale test programs in collaboration with the Ferguson Structural Engineering Laboratory ("FSEL") at the University of Texas at Austin.[34] The MPR/FSEL large-scale test program included testing specimens that reflected the characteristics of ASR-affected structures at Seabrook and was completed at various levels of ASR cracking to assess its impact on selected structural limit states.[35] NextEra states that the results of the test program demonstrate that none of the assessed limit states are reduced by ASR when ASR expansion levels in Seabrook plant structures are below those evaluated in the test program.[36]

The results of the MPR/FSEL large-scale test program provide the basis for the LAR's conclusions regarding the impact of ASR on structural limit states and design considerations for Seabrook structures.[37] Specifically, NextEra concludes that no adjustments to structural properties are necessary when the extent of ASR is less than the limits from the test program. Additionally, NextEra states that, although test specimens experienced levels of ASR that bound ASR levels currently found at Seabrook, the number of available test specimens and nature of the testing prohibited NextEra from testing out to ASR levels where there was a clear change in limit state capacity.[38] The LAR explains that periodic monitoring of ASR is necessary to ensure that the conclusions of the test program remain valid and that the level of ASR at Seabrook does not exceed that considered under the test program.[39] Thus, the LAR proposes to include

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[34] LAR at 14-15 of 73 (unnumbered).

[35] *Id*. at 14-15 of 73 (unnumbered). NextEra evaluated the effects of ASR on the load carrying capability of structural members and its impact on other design considerations. The limit states correspond to the capacity associated with a specific mode of loading for structural members, including: (1) flexure and reinforcement anchorage; (2) shear; (3) compression; and (4) anchor bolts and structural attachments. *Id*.

[36] *Id*. at 15 of 73 (unnumbered).

[37] *Id*. at 15, 18 of 73 (unnumbered).

[38] *Id*. at 16 of 73 (unnumbered).

[39] *Id*.

a monitoring program to maintain the validity of the test program results for Seabrook structures.[40]

On February 7, 2017, the NRC published in the *Federal Register* a notice of opportunity to request a hearing on the LAR.[41] On April 10, 2017, in response to this notice, C-10 submitted its Petition in which it proposes ten contentions challenging NextEra's LAR.[42]

DISCUSSION

I. The Board Should Deny the Petition Because it Does Not Demonstrate that C-10 Has Standing

C-10 bears the burden of demonstrating standing.[43] C-10, however, has not demonstrated either a traditional showing of standing or a proximity presumption of standing in its Petition. Even when construed in favor of C-10,[44] the Petition's standing argument is legally insufficient because, contrary to the requirements of 10 C.F.R. § 2.309(d), it does not specifically identify any members of C-10 that may be affected by the granting of the Seabrook LAR. Additionally, although the Petition identifies C-10 as a potentially adversely affected entity, it does not specifically plead an injury-in-fact to C-10 itself from the granting of the Seabrook LAR. Instead of pleading an injury-in-fact specific to its members or to itself, C-10 only alleges an injury to the public in general. This amounts to an argument for standing as a "private attorney general"; however, such standing is not contemplated under the Atomic Energy Act of

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[40] LAR at 16, 29-33 of 73 (unnumbered).

[41] Applications and Amendments to Facility Operating Licenses and Combined Licenses Involving Proposed No Significant Hazards Considerations and Containing Sensitive Unclassified Non-Safeguards Information and Order Imposing Procedures for Access to Sensitive Unclassified Non-Safeguards Information, 82 Fed. Reg. 9601, 9604 (Feb. 7, 2017).

[42] *See generally* Petition.

[43] *See PPL Bell Bend, LLC* (Bell Bend Nuclear Power Plant), CLI-10-07, 71 NRC 133, 139 (2010); *Exelon Generation Co, LLC & PSEG Nuclear, LLC* (Peach Bottom Atomic Power Station, Units 2 & 3), CLI-05-26, 62 NRC 577, 581 (2005).

[44] *Georgia Inst. of Tech.* (Georgia Tech Research Reactor), CLI-95-12, 42 NRC 111, 115 (1995) (citing *Kelley v. Selin*, 42 F.3d 1501, 1508 (6th Cir.1995)) ("To evaluate a petitioner's standing, [the Commission] construe[s] the petition in favor of the petitioner.").

1954, as amended ("AEA"), § 189a.[45] Therefore, and without regard to the admissibility of C-10's proposed contentions, the Board should deny the Petition.

A. Standing Requirements

Section 189a. of the AEA states that "[i]n any proceeding under this Act, for the granting, suspending, revoking, or amending of any license … the Commission shall grant a hearing upon the request of any person whose interest may be affected by the proceeding …." Pursuant to 10 C.F.R. § 2.309(a), the Board will grant a hearing request in a proceeding for the amending of an NRC license if it determines that the petitioner has standing under the provisions of 10 C.F.R. § 2.309(d) and has proposed at least one admissible contention that meets the requirements of 10 C.F.R. § 2.309(f).

10 C.F.R. § 2.309(d) states, in pertinent part, that:

> A request for hearing or petition for leave to intervene must state:
>
> (i) The name, address and telephone number of the requestor or petitioner;
>
> (ii) The nature of the requestor's/petitioner's right under the Act to be made a party to the proceeding;
>
> (iii) The nature and extent of the requestor's/petitioner's property, financial or other interest in the proceeding; and
>
> (iv) The possible effect of any decision or order that may be issued in the proceeding on the requestor's/petitioner's interest.
>
> (2) *Rulings*. In ruling on a request for hearing or petition for leave to intervene, the Commission, the presiding officer, or the Atomic Safety and Licensing Board designated to rule on such requests must determine, among other things, whether the petitioner has an interest affected by the proceeding considering the factors enumerated in paragraph (d)(1) of this section.

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[45] *Entergy Nuclear Operations, Inc. & Entergy Nuclear Palisades, LLC* (Palisades Nuclear Plant), CLI-08-19, 68 NRC 251, 270 (citing *Palisades*, CL1-07-22, 65 NRC at 526, 529; *Consumers Energy Co., Nuclear Mgmt. Co., LLC, Entergy Nuclear Palisades, LLC & Entergy Nuclear Operations, Inc.* (Palisades Nuclear Plant), CLI-07-18, 65 NRC 399, 411-12 (2007)) ("[The] role as a 'private attorney general' is not contemplated under section 189a of the Atomic Energy Act.").

To determine whether a petitioner has a sufficient interest in a proceeding to be entitled to intervene as a matter of right under 10 C.F.R. § 2.309(d), the Commission has consistently applied "contemporaneous judicial concepts" of standing.[46] Contemporaneous judicial concepts of standing require that the petitioner plead "(1) [an alleged] injury in fact that is (2) fairly traceable to the challenged action, and (3) is likely to be redressed by a favorable decision."[47] Additionally, the alleged injury-in-fact must arguably be within the general interests protected by the statutes governing the challenged action (*e.g.,* the AEA, the National Environmental Policy Act of 1969, as amended ("NEPA"), *etc.*).[48]

The injury-in-fact pleading requirement must be satisfied by an injury that is "concrete and particularized," not "conjectural" or "hypothetical."[49] Thus, "pleadings must be something more than an ingenious academic exercise in the conceivable"; a petitioner "must allege that he will in fact be perceptibly harmed by the challenged agency action, not that he can imagine circumstances in which he could be affected by the agency's action."[50] Furthermore, a "'generalized grievance' shared in substantially equal measure by all or a large class of citizens will not result in a distinct and palpable harm sufficient to support standing."[51]

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[46] *Fla. Power & Light Co.* (St. Lucie, Units 1 & 2), CLI-89-21, 30 NRC 325, 329 (1989). *See also Fla. Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 & 4), CLI-15-25, 82 NRC 389, 394 (2015).

[47] *Turkey Point*, CLI-15-25, 82 NRC at 394 (citing *Sequoyah Fuels Corp. & Gen. Atomics* (Gore, Okla. Site), CLI-94-12, 40 NRC 64, 71-72 (1994); *Lujan v. Defenders of Wildlife*, 504 U.S. 555, 560-61 (1992)).

[48] *Int'l Uranium (USA) Corp.* (White Mesa Uranium Mill), CLI-01-21, 54 NRC 247, 250 (2001); *St. Lucie*, CLI-89-21, 30 NRC at 329.

[49] *Sequoyah Fuels Corp*., CLI-94-12, 40 NRC at 72 (citations omitted).

[50] *Nuclear Fuel Services, Inc.* (Erwin, Tenn.), CLI-04-13, 59 NRC 244, 248 (2004) (quoting *United States v. Students Challenging Regulatory Agency Procedures (SCRAP)*, 412 U.S. 669, 688-89 (1973)).

[51] *U.S. Enrichment Corp*. (Paducah, Ky.), CLI-01-23, 54 NRC 267, 272 (2001) (quoting *Metro. Edison Co.* (Three Mile Island Nuclear Station, Unit No. 1), CLI-83-25, 18 NRC 327, 333 (1983)). *See also Nuclear Mgmt. Co., LLC* (Monticello Nuclear Generating Plant), LBP-05-31, 62 NRC 735, 746

With respect to the traceability pleading requirement, the Commission has held that, in license amendment proceedings, "a petitioner … must assert an injury-in-fact associated with *the challenged license amendment*, not simply a general objection to the facility."[52] Similarly, the Commission has stated that, "[s]ince a license amendment involves a facility with ongoing operations, a petitioner's challenge must show that the amendment will cause a distinct new harm or threat apart from the activities already licensed. Conclusory allegations about potential radiological harm from the facility in general, which are not tied to the specific amendment at issue, are insufficient to establish standing."[53] Moreover, simply enumerating the proposed license changes and alleging without substantiation that the changes will lead to offsite radiological consequences is not sufficient.[54] Although the cause of the injury need not flow directly from the challenged action, "the chain of causation must be plausible."[55]

If the petitioner is an organization, then it must satisfy these traditional standing pleading requirements through a demonstration of either organizational standing or representational standing.[56] The Commission has stated that organizations seeking to establish organizational standing "must satisfy the same 'standing' requirements as individuals seeking to intervene" because "an organization, like an individual, is considered a 'person' as [the Commission has] defined that word in 10 C.F.R. § 2.4 and as [the Commission has] used it in 10 C.F.R. § 2.309 regarding standing."[57] As with an individual, an organization seeking standing must itself have

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(2005); *Envirocare of Utah, Inc.* (Byproduct Material Waste Disposal License), LBP-92-8, 35 NRC 167, 174 (1992).

[52] *Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-04, 49 NRC 185, 188 (1999).

[53] *White Mesa*, CLI-01-21, 54 NRC at 251 (citation and internal quotation marks omitted).

[54] *Zion*, CLI-99-04, 49 NRC at 192.

[55] *Turkey Point*, CLI-15-25, 82 NRC at 394.

[56] *Georgia Tech*, CLI-95-12, 42 NRC at 115.

[57] *Palisades*, CLI-07-18, 65 NRC at 411.

suffered a concrete and particularized injury and not merely assert "general environmental and policy interests."[58] For instance, an organization would have organizational standing if it had suffered or will suffer a concrete and demonstrable injury to its activities, with the consequent drain on its resources, as opposed to a mere setback to its abstract social interests.[59]

In order to establish representational standing, an organization must demonstrate how at least one of its members may be affected by the proposed action, must identify that member, and "must demonstrate that the member has (preferably by affidavit) authorized the organization to represent him or her and to request a hearing on his or her behalf."[60] The member seeking representation must qualify for standing in his or her own right; the interests that the organization seeks to protect must be germane to its own purpose; and neither the claim asserted nor the relief requested must require the individual member to participate in the organization's lawsuit.[61] The failure of an organization to identify the member or members that it purports to represent and to provide proof of authorization via affidavit or other means precludes the organization from establishing representational standing.[62]

As an alternative to satisfying contemporaneous judicial concepts of standing, a petitioner may demonstrate that it is eligible for a "proximity presumption" of standing. For instance, in power reactor construction permit, operating license, or license renewal proceedings, the Commission presumes standing without an evaluation of the traditional standing pleading requirements for people that have demonstrated that they live within, or

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[58] *Palisades*, CLI-07-18, 65 NRC at 411-12 (citing *Sierra Club v. Morton*, 405 U.S. 727, 734-35 (1972); *Three Mile Island*, CLI-83-25, 18 NRC at 332); *White Mesa*, CLI-01-21, 54 N.R.C. at 252 (citing *Transnuclear, Inc.* (Export of 93.15% Enriched Uranium), CLI-94-1, 39 NRC 1, 5 (1994); *Sacramento Mun. Util. Dist.* (Rancho Seco Nuclear Generating Station), CLI-92-2, 35 NRC 47, 59-61 (1992)).

[59] *People for the Ethical Treatment of Animals v. USDA*, 797 F.3d 1087, 1093 (D.C. Cir. 2015).

[60] *Palisades*, CLI-07-18, 65 NRC at 409.

[61] *Id.*; *Private Fuel Storage* (Independent Spent Fuel Storage Installation), CLI-99-10, 49 NRC 318, 323 (1999) (citing *Hunt v. Washington State Apple Advert. Comm'n*, 432 U.S. 333, 343 (1977)).

[62] *See Palisades*, CLI-07-18, 65 NRC at 409-10.

otherwise have frequent contacts within, approximately 50 miles of the power reactor facility based on "the presumption that an accident associated with the nuclear facility could adversely affect the health and safety of [the] people working or living offsite but within a certain distance of that facility."[63] In license amendment proceedings, however, the Commission only presumes standing for people that have demonstrated that the proposed license amendment "quite obviously" entails an increased potential for offsite radiological consequences.[64] Moreover, the distance at which the petitioner can be presumed to be affected by the proposed action must be judged on a case-by-case basis, taking into account the nature of the proposed action and the significance of the radioactive source involved.[65] Examples of "significant" license amendment proceedings that petitioners have demonstrated as raising an obvious potential for offsite radiological consequences within the proximity of a facility, and thus as giving rise to the proximity presumption, include increases to spent fuel storage capacities[66] and extended power uprates.[67] However, the petitioner bears the burden to demonstrate that a proposed action raises an obvious potential for offsite radiological consequences.[68] If the petitioner fails to

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[63] *Peach Bottom*, CLI-05-26, 62 NRC at 580. *See also Calvert Cliffs 3 Nuclear Project, LLC* (Calvert Cliffs Nuclear Power Plant, Unit 3), CLI-09-20, 70 NRC 911, 915-16 (2009) (citing *Consumers Energy Co.* (Big Rock Point Independent Spent Fuel Storage Installation), CLI-07-19, 65 NRC 423, 426 (2007)).

[64] *Zion*, CLI-99-04, 49 NRC at 191 (internal quotation marks omitted). *See also St. Lucie*, CLI-89-21, 30 NRC at 329 (explaining that the proximity presumption applies in license amendment proceedings to "major alterations to the facility with a clear potential for offsite consequences.").

[65] *U.S. Dep't of Energy* (Plutonium Export License), CLI-04-17, 59 NRC 357, 365 (2004); *Peach Bottom*, CLI-05-26, 62 NRC at 580-81.

[66] *St. Lucie*, CLI-89-21, 30 NRC at 329 (citing *Va. Elec. Power Co.* (N. Anna Nuclear Power Station, Units 1 & 2), ALAB-522, 9 NRC 54 (1979)); *Carolina Power & Light Co.* (Shearon Harris Nuclear Power Plant), LBP-99-25, 50 NRC 25, 29-30 (1999); *Ne. Nuclear Energy Co.* (Millstone Nuclear Power Station, Unit 3), LBP-00-2, 51 NRC 25, 27-28 (2000).

[67] *Fla. Power & Light Co.* (St. Lucie Nuclear Power Plant, Unit 1), LBP-11-29, 74 NRC 612, 619 (2011); *PPL Susquehanna LLC* (Susquehanna Steam Electric Station, Units 1 & 2), LBP-07-10, 66 NRC 1, 18 (2007); *Entergy Nuclear Vermont Yankee, LLC* (Vermont Yankee Nuclear Power Station), LBP-04-28, 60 NRC 548, 553 (2004).

[68] *Peach Bottom*, CLI-05-26, 62 NRC at 581.

satisfy this burden, then the standing inquiry reverts to the traditional standing analysis of whether the petitioner has made a particularized showing of injury-in-fact, traceability, and redressability.[69]

B. The Board Should Deny the Petition Because it Does Not Demonstrate a Traditional Showing of Standing

C-10's standing argument is insufficient because, first, it does not demonstrate a traditional showing of standing to either (1) a member of C-10 that C-10 has demonstrated that it is authorized to represent (*i.e.,* representational standing) or (2) C-10 itself (*i.e.,* organizational standing).

1. C-10 Does Not Satisfy the Requirements for Representational Standing

On its face, the Petition does not satisfy the requirements for representational standing. In order to satisfy the requirements for representational standing, C-10 was required, among other things, to (1) identify, by affidavit or other evidence, a member of C-10 that had authorized C-10 to represent him or her and request a hearing on his or her behalf and (2) demonstrate an injury-in-fact to this member that is fairly traceable to the Seabrook LAR and that would be redressed by a favorable decision in this proceeding (*i.e.,* demonstrate the traditional standing requirements with respect to this member).[70] Instead of doing this, however, C-10 merely

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[69] *Peach Bottom*, CLI-05-26, 62 NRC at 581; *Palisades*, CLI-08-19, 68 NRC at 268-69; *St. Lucie*, CLI-89-21, 30 NRC at 329-30; *Commonwealth Edison Co.* (Zion Nuclear Power Station, Units 1 & 2), CLI-99-04, 49 NRC 185, 191 (1999); *Fla. Power & Light Co.* (Turkey Point Nuclear Plant, Units 3 & 4), LBP-08-18, 68 NRC 533, 539 (2008).

[70] *Palisades*, CLI-07-18, 65 NRC at 409-10. *See also Westinghouse Elec. Co., LLC* (Hematite Decommissioning Project), LBP-09-28, 70 NRC 1019, 1025-26 (2009) (finding that the petitioner had failed to demonstrate representational standing because it had only stated that it "'represent[s] the interests of more than one thousand Idaho citizens'" but did not "identify by name and address a single member of its organization" or "verify that any member has authorized [the petitioner] to request a hearing on that member's behalf."); *Cogema Mining, Inc*. (Irigaray & Christensen Ranch Facilities), LBP-09-13, 70 NRC 168, 189-90 (2009) (finding that the petitioner had failed to demonstrate representational standing because, even though the petition identified an individual, it did not specify the individual's address or in what way the individual would be impacted by the proposed action); *Monticello*, LBP-05-31, 62 NRC at 745-46 (finding that the petitioner had failed to demonstrate representational standing because it had only stated that "'the decision made in this proceeding has the possible effect … of transforming the broader community in which [the petitioner's] personnel live and work into an abandoned sacrifice zone'" and did not identify its members, their distance from the facility, or its authority to represent these

asserts that "most of [its] members reside in the communities adjacent to [Seabrook]" and that the people that it represents are "the citizens within a ten-mile radius of [Seabrook]."[71] C-10 does not provide an affidavit from, or even specifically identify, any of these claimed members. If a board "were to find that such a vague and cursory showing established standing, it would render [10 C.F.R. §] 2.309(d) virtually meaningless."[72]

Moreover, as a consequence of not specifically identifying any of its members, C-10 cannot satisfy the requirement of pleading the individual standing of these members in order to demonstrate representational standing. Instead, C-10 merely asserts, in general, that the NRC's approval of the Seabrook LAR "could put *the public* at serious risk by allowing NextEra to continue to operate Seabrook … with no way to adequately remedy [its] deteriorating concrete" and could have "potentially disastrous consequences for the safety of *surrounding communities*."[73] The Commission has stated that such a statement "simply enumerating the proposed license changes and alleging without substantiation that the changes will lead to offsite radiological consequences" is not sufficient to satisfy the standing requirement.[74] Additionally, C-10's assertion of an injury-in-fact to "the public" and "surrounding communities" instead of injury to specific and identified members of the C-10 Foundation is a "generalized

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members in "an affidavit or other express delegation of authority ….."); *Allied-Gen. Nuclear Services* (Barnwell Fuel Receiving & Storage Station), ALAB-328, 3 NRC 420, 422-23 (1976) ("While the petition raises a question whether some property interests of ACLU/SC members may be injured as a result of this proceeding, we are left to speculate what they might be or how they might be injured" and "ACLU/SC has further complicated matters by its failure to supply affidavits from its members which state what their concerns are and why they wish ACLU/SC to represent them.").

[71] Petition at 1.

[72] *Monticello*, LBP-05-31, 62 NRC at 746 (finding that a petitioner had not satisfied the standing requirement, in part, because it had not provided affidavits or even specifically identified any individual whose interests it sought to represent).

[73] Petition at 1-2 (emphasis added).

[74] *Zion*, CLI-99-04, 49 NRC at 192. *See also Palisades*, CLI-07-18, 65 NRC at 410 (The Commission requires "fact-specific standing allegations, not conclusory assertions.").

grievance shared in substantially equal measure by all or a large class of citizens" and does "not result in a distinct and palpable harm sufficient to support standing."[75]

For these reasons, C-10 has failed to demonstrate representational standing and, therefore, the Board should deny the Petition.[76]

2. C-10 Does Not Satisfy the Requirements for Organizational Standing

C-10 also does not satisfy the requirements for organizational standing because it does not demonstrate the traditional standing requirements with respect to itself. Specifically, C-10 does not describe a distinct and palpable injury-in-fact to itself that is fairly traceable to the Seabrook LAR. Instead, the only injuries that C-10 alleges are to the public in general.

C-10's pleading of organizational standing is analogous to an organizational standing pleading that was rejected by the Supreme Court in *Sierra Club v. Morton*. In that case, the Sierra Club sued to halt the proposed development of a ski resort. The Sierra Club asserted that it was a membership corporation with "a special interest in the conservation and the sound maintenance of the national parks, game refuges and forests of the country," and complained that the development "would destroy or otherwise adversely affect the scenery, natural and historic objects and wildlife of the [Sequoia National Park] and would impair the enjoyment of the park for future generations."[77] The Sierra Club unsuccessfully argued that its lawsuit was a "public" action and that the club's "longstanding concern with and expertise in such matters

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[75] *USEC,* CLI-01-23, 54 NRC at 272.

[76] C-10 cannot cure this failure to submit member affidavits with its Petition by subsequently submitting member affidavits as part of its reply brief because the acceptance and consideration of such belatedly submitted evidence regarding standing would deprive the other parties to the proceeding of the opportunity to challenge the substantive sufficiency of the evidence. *Palisades*, CLI-08-19, 68 NRC at 261-62 ("It is not acceptable in NRC practice for a petitioner to claim standing based on vague assertions, and when that fails, to attempt to repair the defective pleading with fresh details offered for the first time in a [reply, including] authorization affidavits filed with replies …. [T]o the extent that certain of [the Commission's] past Memoranda and Orders might be read to imply that authorization affidavits may be filed with a reply, [the Commission] disavow[s] such an interpretation.").

[77] *Sierra Club v. Morton,* 405 U.S. 727, 730, 734.

were sufficient to give it standing as a 'representative of the public.'"[78] The Supreme Court, however, held that, although the Sierra Club's complaint described an injury-in-fact, the club had not demonstrated that it was itself among the injured.[79] The Supreme Court stated that "a mere 'interest in a problem,' no matter how longstanding the interest and no matter how qualified the organization is in evaluating the problem, is not sufficient by itself to render the organization 'adversely affected' or 'aggrieved' …."[80]

C-10's pleading in this proceeding suffers from the same defect as did the Sierra Club's pleading in *Morton*. Like the Sierra Club's pleading, C-10's pleading points to C-10's longstanding "mission … to protect public health and the environment" and its "vision [of] a clean, safe, sustainable energy future" as well as its expertise in "plant safety and security issues."[81] C-10 then ties this mission of, and expertise in, protecting the "public" with the concern that the NRC's approval of the Seabrook LAR could put this same "public" and "surrounding communities" at serious risk.[82] Thus, as in *Morton*, although C-10's pleading may identify an injury to the public, it does not demonstrate that C-10 itself is among the injured. Consequently, C-10 has failed to satisfy the organizational standing requirement.

C-10's pleading of organizational standing is also distinguishable from cases in which organizational standing has been found based on the demonstration of a specific injury-in-fact to the organization itself and not to the public in general. For instance, in *People for the Ethical Treatment of Animals v. USDA*, the People for the Ethical Treatment of Animals ("PETA") alleged that the United States Department of Agriculture ("USDA") had acted unlawfully by

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[78] 405 U.S. 727 at 736.

[79] *Id*. at 734-35.

[80] *Id*. at 739.

[81] Petition at 1.

[82] *Id*. at 1-2.

announcing that it intended to apply the protections of the Animal Welfare Act ("AWA"), 7 U.S.C. §§ 2131 *et seq.*, to birds and then failing to do so for more than ten years.[83] In its pleading, PETA stated that its mission was to prevent "cruelty and inhumane treatment of animals" through, among other things, cruelty investigations and public education.[84] PETA alleged that the USDA's failure to apply the AWA's protections to birds had perceptibly impaired PETA from preventing cruelty to these animals through its normal process of submitting USDA complaints and had deprived PETA of key information that it relies on to educate the public.[85] Specifically, PETA alleged that, as a direct result of USDA's failure to act, PETA had "been forced to expend more than $10,000 on staff attorney time not related to this litigation and related expenses" and that it expected to "continue expending more than $3,000 per year on the same unless and until the court grants the relief requested in this case."[86] Based on this pleading, the District of Columbia Circuit held that PETA had satisfied organizational standing by demonstrating that, in support of its mission, its organization had expended, and would be required to continue to expend, resources due to allegedly unlawful conduct by the USDA.[87]

Contrary to the pleading in *PETA*, C-10's pleading does not demonstrate that the NRC's approval of the Seabrook LAR would injure C-10's interests and, consequently, that C-10 would expend resources to counteract those injuries.[88] For instance, although C-10 asserts that its "core service is to operate a field monitoring network to measure real-time radiological

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[83] *People for the Ethical Treatment of Animals v. USDA,* 797 F.3d at 1089.

[84] *Id*. at 1094.

[85] *Id*. at 1094-95.

[86] *Id*. at 1096.

[87] *Id*. at 1097.

[88] This does not include an expenditure of resources to litigation or to investigation in anticipation of litigation, which is considered a self-inflicted budgetary choice that cannot qualify as an injury-in-fact for purposes of organizational standing. *Id.* at 1093 (citing *Am. Soc. for Prevention of Cruelty to Animals v. Feld Entm't, Inc*., 659 F.3d 13, 25 (D.C. Cir. 2011)).

emissions from" Seabrook and to serve as an "informational resource,"[89] it does not attempt to explain how these activities would be affected by the Seabrook LAR. Again, all that C-10 states with respect to the Seabrook LAR is that it "could put *the public* at serious risk" and could have "potentially disastrous consequences for the safety of *surrounding communities*."[90] A risk to "the public" is demonstrably not an allegation of a specific injury-in-fact to C-10 itself. Consequently, C-10 has failed to satisfy the organizational standing requirement.

Finally, in *Palisades*, the Commission rejected standing arguments substantively similar to C-10's standing argument. Specifically, the Commission refused to find organizational standing for numerous organizations that had asserted, like C-10, longstanding missions to keep the public informed regarding a specific nuclear power plant, to be involved in environmental issues, and to advocate for energy issues and that had asserted that their offices were located within the vicinity of the nuclear power plant.[91] The Commission held that such arguments did not demonstrate a discrete institutional injury to each organization itself, but only demonstrated general environmental and policy interests of the sort that the Commission has repeatedly found insufficient for organizational standing.[92]

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[89] Petition at 1.

An employee of C-10 has also stated that the C-10 field monitoring network is "not an early warning system" and does "not respond to catastrophic events …." *See* Carol Feingold, *C-10 Executive Director Looks to the Future*, Wicked Local Newburyport, May 3, 2017, *available at* http://newburyport.wickedlocal.com/news/20170503/c-10-executive-director-looks-to-future.

[90] Petition at 1-2 (emphasis added).

[91] *Palisades*, CLI-08-19, 68 NRC at 269-70.

[92] *Id*. *See also Palisades*, CLI-07-18, 65 NRC at 411-12; *Peach Bottom*, CLI-05-26, 62 NRC at 579-80 (finding that a petitioner's involvement in monitoring a facility for safety and radiation levels and publishing documents addressing nuclear issues did not demonstrate an injury sufficient to demonstrate standing).

As illustrated by the above precedent, C-10 has failed to demonstrate organizational standing and, therefore, the Board should deny the Petition.[93]

C. The Board Should Deny the Petition Because it Does Not Demonstrate a Proximity Presumption of Standing

C-10's standing argument is insufficient because, second, it does not demonstrate a proximity presumption of standing to either (1) a member of C-10 that C-10 has demonstrated that it is authorized to represent or (2) C-10 itself.

1. C-10 Does Not Satisfy the Requirements for the Proximity Presumption of Standing to its Members

In order to show that the proximity presumption of standing should apply, C-10 must at least provide plausible factual allegations that satisfy each element of standing.[94] Therefore, among other things, C-10 must factually allege a radiological injury to an individual within the vicinity of Seabrook and how the granting of the Seabrook LAR would raise an obvious potential for this injury.[95]

C-10, however, cannot demonstrate a proximity presumption of standing to a member of C-10 because, as explained above, C-10 has not identified any specific member of C-10 and has not provided an affidavit or other evidence to show that this member has authorized C-10 to represent him or her and to request a hearing on his or her behalf. Additionally, C-10 provides no evidence, by affidavit or otherwise, to factually support its statements that, "most of our members reside in the communities adjacent to the plant" and that "the people we represent

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[93] C-10 cannot cure its failure to plead the elements of standing in its Petition by subsequently pleading the elements of standing in its reply brief because doing so would deprive the other parties to the proceeding of the opportunity to challenge the sufficiency of the pleading. *See Palisades*, CLI-08-19, 68 NRC at 261-62.

[94] *Southern Nuclear Op. Co., Inc.* (Vogtle Electric Generating Plant, Units 3 & 4), LBP-16-5, 83 NRC 259, 269 (2016) (quoting *U.S. Army Installation Command* (Schoefield Barracks, Oahu, Haw., and Pohakuloa Training Area, Island of Hawaii, Haw.), LBP-10-4, 71 NRC 216, 229-30 (2010)).

[95] *St. Lucie*, CLI-89-21, 30 NRC at 329-30.

[are] the citizens within a ten-mile radius of [Seabrook]."[96] Thus C-10 provides no way of knowing who specifically C-10 represents and where these individuals reside and have frequent contacts in relation to Seabrook. Without such specific, factual allegations that C-10 has members within the vicinity of Seabrook, the availability of the proximity presumption of standing cannot even be evaluated with respect to C-10's members, let alone granted. Therefore, the Board should deny the Petition.[97]

2. C-10 Does Not Satisfy the Requirements for the Proximity Presumption of Standing to Itself

Whereas C-10 does not factually allege the identities of any of its members and where they reside in relation to Seabrook, it does factually allege that C-10 itself is within the vicinity of Seabrook. Specifically, C-10 provides its address and states, as part of its signed Petition, that "[its] office is located within the [Emergency Planning Zone] of Seabrook."[98] However, C-10 still does not demonstrate a proximity presumption of standing because it never factually alleges an obvious potential for offsite radiological consequences to itself. Instead, C-10 only alleges offsite radiological consequences to the public such as through its discussion of "serious risk" to "the public" and "potentially disastrous [safety] consequences" to the "surrounding communities" posed by the "radioactive substances contained within the [containment structures and spent

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[96] Petition at 1.

[97] C-10 cannot cure its failure to plead the elements of standing in its Petition by subsequently pleading the elements of standing in its reply brief because doing so would deprive the other parties to the proceeding of the opportunity to challenge the sufficiency of the pleading. *See Palisades*, CLI-08-19, 68 NRC at 261-62.

[98] Petition at 1. The Commission's regulations provide for a "plume exposure pathway emergency planning zone (EPZ)" and an "ingestion pathway EPZ." 10 C.F.R. § 50.33(g). "The exact size and configuration of the EPZs surrounding a particular nuclear power reactor shall be determined in relation to the local emergency response needs and capabilities as they are affected by such conditions as demography, topography, land characteristics, access routes, and jurisdictional boundaries"; however, "[g]enerally, the plume exposure pathway EPZ for nuclear power reactors shall consist of an area about 10 miles (16 km) in radius and the ingestion pathway EPZ shall consist of an area about 50 miles (80 km) in radius." *Id*. Based on the Petition's reference to "the EPZ of [Seabrook]" and the address provided for C-10 in the Petition, the Staff understands that C-10 is asserting that its office is located within 10 miles of Seabrook.

fuel pool] walls."[99] Since C-10 never alleges radiological consequences to itself and since neither the Staff nor the Board may provide this allegation on behalf of C-10,[100] C-10 has not satisfied its burden of demonstrating a proximity presumption of standing and, consequently, the Board should deny the Petition.[101]

D. C-10 Impermissibly Seeks to Intervene as a "Private Attorney General"

All of the above-identified deficiencies in C-10's standing argument support the conclusion that C-10 has not satisfied either the contemporaneous judicial concepts of standing or the Commission's proximity presumption of standing. Instead, it appears that C-10 is attempting to intervene as a "private attorney general." For example, C-10 highlights its mission of "protect[ing] public health and the environment" and its vision of a "clean, safe, sustainable energy future."[102] C-10 alleges that the ultimate consequences of granting the Seabrook LAR would be to "the public" and to the "surrounding communities."[103] Moreover, C-10 seeks a "[]complete picture of the actual state of concrete degradation" for "the surrounding

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[99] Petition at 1-2, 6, 8. *See also* Petition at 6 ("endanger the public health and safety").

[100] *See AmerGen Energy Co., LLC* (Oyster Creek Nuclear Generating Station), CLI-09-7, 69 NRC 235, 260 (2009) ("While a board may view a petitioner's supporting information in a light favorable to the petitioner, it cannot do so by ignoring [the] contention admissibility rules, which require the petitioner (not the board) to supply all of the required elements for a valid intervention petition.").

Construing a pleading in favor of a petitioner because the petitioner is *pro se* also does not alter the fact that the petitioner bears the burden of supplying all of the required elements for a valid intervention petition and that a board cannot read such elements into a petition. *DTE Elec. Co.* (Fermi Nuclear Power Plant, Unit 2), CLI-15-18, 82 NRC 135, 145-46 (2015) (citing *South Carolina Elec. & Gas Co. & South Carolina Pub. Serv. Auth. (also referred to as Santee Cooper)* (Virgil C. Summer Nuclear Station, Units 2 & 3), CLI-10-1, 71 NRC 1, 6 (2010); *Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, & 3), CLI-99-11, 49 NRC 328, 338-39 (1999); *Statement of Policy on Conduct of Adjudicatory Proceedings*, CLI-98-12, 48 NRC 18, 22 (1998); *Pilgrim v. Littlefield*, 92 F.3d 413, 416 (6th Cir. 1996); *Hall v. Bellmon*, 935 F.2d 1106, 1110 (10th Cir. 1991)).

[101] C-10 cannot cure its failure to plead the elements of standing in its Petition by subsequently pleading the elements of standing in its reply brief because doing so would deprive the other parties to the proceeding of the opportunity to challenge the sufficiency of the pleading. *See Palisades*, CLI-08-19, 68 NRC at 261-62.

[102] Petition at 1.

[103] *Id*. at 1-2, 6.

communities" and to "reassure the surrounding families" and argues that the proprietary information in the Seabrook LAR should be made public for "*citizens* concerned with safety protocols in the nuclear industry."[104] The Supreme Court has used the phrase "private attorney general" to "describe the function performed by persons upon whom Congress has conferred the right to seek judicial review of agency action."[105] The Commission has made clear, however, that the role of "private attorney general" is not contemplated under AEA § 189a.[106] Therefore, C-10's arguments in this vein cannot carry its burden of demonstrating standing,[107] even when they are construed in favor of C-10.[108]

Consequently, and without regard to the admissibility of C-10's proposed contentions, the Board should deny the Petition for failing to demonstrate standing.

II. When Combined, Portions of the Proposed Contentions Amount to a Single Admissible Contention while the Remaining Arguments are Inadmissible

A. Contention Admissibility Requirements

In addition to establishing standing, to intervene in a license amendment proceeding, a petitioner must also submit at least one admissible contention. The legal requirements governing the admissibility of contentions are well-established and set forth in 10 C.F.R. § 2.309(f) of the Commission's Rules of Practice and Procedure. Specifically, in order to be admitted, a contention must satisfy the following requirements:

> (f) *Contentions*. (1) A request for hearing or petition for leave to intervene must set forth with particularity the contentions sought to be raised. For each contention, the request or petition must:

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[104] Petition at 2, 6, 8 (emphasis added).

[105] *Morton*, 405 U.S. at 737-38.

[106] *Palisades*, CLI-08-19, 68 NRC at 270 (citing *Palisades*, CL1-07-22, 65 NRC at 526, 529; *Palisades*, CLI-07-18, 65 NRC at 411-12).

[107] *See id*. at 270 (rejecting "private attorney general" standing arguments); *Palisades*, CL1-07-22, 65 NRC at 529 (same); *Palisades*, CLI-07-18, 65 NRC at 411-12 (same); *Peach Bottom*, CLI-05-26, 62 NRC at 579-80 (same).

[108] *Georgia Tech*, CLI-95-12, 42 NRC at 115 (citing *Kelley v. Selin*, 42 F.3d at 1508).

> (i) Provide a specific statement of the issue of law or fact to be raised or controverted …
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> (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;
>
> (vi) … [P]rovide 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 …
>
> (2) Contentions must be based on documents or other information available at the time the petition is to be filed, such as the application, supporting safety analysis report, environmental report or other supporting document filed by an applicant or licensee, or otherwise available to a petitioner. On issues arising under the National Environmental Policy Act, participants shall file contentions based on the applicant's environmental report ….

10 C.F.R. § 2.309(f)(1)-(2). Pursuant to 10 C.F.R. § 2.309(f)(1)(iii), a proposed contention must be rejected if it raises issues outside of the scope of this proceeding.[109] Thus, a proposed contention that challenges a license amendment must confine itself to "health, safety or environmental issues fairly raised by [the license amendment]."[110] Moreover, a proposed

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[109] *See Arizona Pub. Serv. Co.* (Palo Verde Nuclear Generating Station, Units 1, 2, & 3), LBP-91-19, 33 NRC 397, 400, 411-12 (1991).

[110] *Commonwealth Edison Co.* (Dresden Nuclear Power Station, Unit 1), CLI-81-25, 14 NRC 616, 624 (1981).

contention must be rejected if it raises an issue that the Board is not authorized to adjudicate.[111] For example, a licensing board has no jurisdiction to rule on the propriety of a Staff determination that a proposed license amendment presents no significant hazards considerations.[112]

Pursuant to 10 C.F.R. § 2.309(f)(1)(iv), a proposed contention must be rejected if it raises an issue that is not material to the findings the NRC must make to support the action that is involved in the proceeding. The proponent of a proposed contention in a licensing proceeding "must demonstrate that the subject matter of the contention would impact the grant or denial of [the] pending license application."[113] In other words, the issue in the proposed contention "must make a difference in the outcome of the licensing proceeding so as to entitle the petitioner to cognizable relief."[114]

Finally, the Commission has emphasized that the 10 C.F.R. § 2.309(f)(1) contention admissibility requirements are "strict by design."[115] Failure to comply with any one of the 10 C.F.R. § 2.309(f)(1) requirements is grounds for dismissing the proposed contention.[116]

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[111] *See Pub. Serv. Co. of Indiana, Inc.* (Marble Hill Nuclear Generating Station, Units 1 & 2), ALAB-316, 3 NRC 167, 170-71 (1976).

[112] *See Entergy Nuclear Operations, Inc.* (Indian Point, Unit 2), CLI-16-05, 83 NRC 131, 145 (2016).

[113] *Entergy Nuclear Operations, Inc.* (Indian Point, Units 2 & 3), LBP-08-13, 68 NRC 43, 62 (2008).

[114] *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 179 (1998), *reconsid. granted in part on other grounds,* LBP-98-10, 47 NRC 288 (1998) (citing Rules of Practice for Domestic Licensing Proceedings – Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,172 (Aug. 11, 1989) (Final Rule)).

[115] *Dominion Nuclear Conn., Inc.* (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001), *petition for reconsid'n denied*, CLI-02-01, 55 NRC 1 (2002).

[116] *PFS*, CLI-99-10, 49 NRC at 325 (citing *Palo Verde*, CLI-91-12, 34 NRC at 155-56).

B. When Combined, Portions of Contentions A, B, C, D, G, and H Amount to a Single Admissible Contention

None of C-10's contentions are independently admissible. When combined, however, portions of Contentions A, B, C, D, G, and H amount to a single admissible contention. Contention D argues that the MPR/FSEL large-scale test program yielded data that are not representative of the progression of ASR in Seabrook concrete.[117] Contention D, in and of itself, is not admissible because it does not explicitly explain why the representativeness of the test program is material to the findings that the Staff must make on the LAR. Portions of Contentions A, B, C, G, and H do, however, argue how a non-representative test program could affect the findings that the Staff must make on the LAR.[118] Therefore, this section of the Staff's answer discusses Contention D first and then discusses Contentions A, B, C, G, and H. As this discussion demonstrates, consistent with the Board's authority to reformulate a petitioner's arguments while not itself generating arguments on behalf of the petitioner,[119] had C-10 established its standing to intervene, the Board could have found that the Petition had articulated a single admissible contention, which the Staff has rewritten as follows:

> The MPR/FSEL large-scale test program is not bounding of the Seabrook concrete because of the age of the Seabrook concrete, the length of time that ASR has propagated in the Seabrook concrete, the effect of water at varying levels of height and varying levels of salt concentration on the Seabrook concrete, the effect of heat on the Seabrook concrete, and the effect of radiation on the Seabrook concrete. As a result, the proposed monitoring, acceptance criteria, and inspection intervals are not adequate.

However, because C-10 did not establish standing, its contentions, even when reformulated, do not give rise to a hearing and the Petition should be denied.

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[117] Petition at 8.

[118] Other portions of C-10's contentions appear to make assertions regarding the Seabrook LRA and the current operations at Seabrook. These issues are outside of the scope of this proceeding on the LAR and cannot form the basis of an admissible contention.

[119] *See, e.g., Fermi,* CLI-15-18, 82 NRC at 145-46.

1. <u>Contention D (Representativeness)</u>

Contention D states:

> The Large-Scale Test Program, undertaken for NextEra at the Ferguson Structural Engineering Laboratory (FSEL), has yielded data that are not "representative" of the progression of ASR at Seabrook Station, and therefore cannot be substituted for the required comprehensive petrographic analysis of in-situ concrete at the Seabrook reactor—now many years overdue.[120]

C-10 refers to statements in the LAR that the MPR/FSEL large-scale test program was designed to be "representative" of the structural characteristics of safety-related structures at Seabrook.[121] However, C-10 argues that the "data stream [created by the test program] in all likelihood *misrepresents* the progression of ASR degradation at a nuclear power facility."[122] As support for this argument, C-10 asserts that the test program's use of wetted absorbent fabric and misters could not accurately represent the potential presence of groundwater on one side of the reinforced concrete at Seabrook.[123] C-10 also asserts that the test program was not representative because it did not sufficiently account for the "advancement of ASR over the course of 35-40 years," the components used to form the concrete at Seabrook, the potential for "relatively high salt content" groundwater, and the potential exposure of the concrete to "significant, even high levels of heat" and "significant, and even high levels of radiation and the resulting neutron bombardment."[124] C-10 concludes that, at the very least, the data from the test program must be validated by "the full range of petrographic testing" of Seabrook's concrete itself and provides the opinion of Dr. Brown in support of this statement.[125]

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[120] Petition at 8.

[121] *Id*. at 8-9 (citing MPR-4288, Rev. 0, *Seabrook Station: Impact of Alkali-Silica Reaction on Structural Design Evaluations,* at 4-1, 4-3 (July 31, 2016) (ADAMS Accession No. ML16216A241)).

[122] Petition at 9.

[123] *Id*. at 9-10.

[124] *Id*. at 10.

[125] *Id*. at 9.

Contention D provides a specific statement of the issue of law or fact to be raised or controverted (*i.e.,* whether the test program is representative of the Seabrook concrete), it provides the basis for this contention (*i.e.,* that the test program does not sufficiently account for the Seabrook concrete with respect to "[its] age; the length of time ASR has propagated; the effect of the fresh water at varying levels; the effect of the salt in the water at varying levels of height and concentration; the effects of heat; the effects of radiation"),[126] it provides alleged facts or expert opinions supporting its position (*i.e.,* the opinion of Dr. Brown), and it shows that a genuine dispute exists with the applicant (*i.e.,* by citing to LAR statements that the test program is representative of the Seabrook concrete). However, Contention D is not admissible in and of itself because it does not explain why its representativeness argument is within the scope of the proceeding or material to any of the findings that the Staff must make on the LAR. Contention D merely asserts, in the abstract, that the test program is not representative of the Seabrook concrete and does not explain what effect this alleged lack of representativeness has on the LAR or the findings that the Staff must make on the LAR.

Portions of Contentions A, B, C, G, and H do, however, assert consequences from the alleged lack of representativeness of the test program. For instance, these contentions raise concerns with the monitoring, acceptance criteria, and inspection intervals proposed in the LAR, all of which are based in part on the LAR's finding that the test program is representative of the Seabrook concrete.[127] Therefore, when combined with these portions of Contentions A, B, C, G, and H, as discussed in detailed below, Contention D amounts to an admissible contention.

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[126] Petition at 11.

[127] *See, e.g.,* LAR at 16 of 73 (unnumbered) ("[The MPR/FSEL testing showed a] Combined Cracking Index (CCI) methodology based on crack width summation … to be effective for in-plane expansion monitoring [and that] [s]nap ring borehole extensometers (SRBEs) provided accurate and reliable measurements for monitoring through-thickness expansion."); LAR at 30 of 73 (unnumbered) ("[The SRBE] was selected because it was shown to be accurate and reliable in the MPR/FSEL testing."); LAR at 31 of 73 (unnumbered) (discussing structural limit states in light of the test program); LAR at 31-32 of 73 (unnumbered) (discussing monitoring frequencies in light of the test program).

2. Contention A (Visual Inspections, Crack Index, and Extensometers)

Contention A states:

> Visual inspection, crack width indexing, and extensometer deployment are not sufficient tools for determining the presence and extent of Alkali-Silica Reactor (ASR) in safety-related structures at Seabrook Station.[128]

Contention A disputes the LAR's reliance on visual inspections, crack width indexing, and extensometer deployment in its monitoring program. Specifically, Contention A asserts that visual inspections of concrete surfaces may not reveal the presence of ASR.[129] Contention A also disputes the LAR's use of crack width indexing, specifically where the LAR notes that expansion measurements from the MPR/FSEL large-scale test program have shown that a crack index provides a "reasonable and conservative approximation" of strain for concrete undergoing ASR expansion.[130] Contention A contends that utilizing a crack index that only considers crack width can give a false indication of the rate of ASR advancement because concrete restrained by reinforcement will cause microcracks of greater number without restricting the length of cracks.[131] Further, Contention A argues that extensometers may miss localized damage propagating in-plane from ASR.[132] Contention A asserts that while visual inspection, crack width indexing, and extensometer deployment are each a legitimate tool "that can, and should, be used to analyze the advancement of ASR, only sample testing of in-situ

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[128] Petition at 3.

[129] *Id*. at 3, 4.

[130] *Id*. at 3 (citing LAR, Enclosure 7, Section 3.3.4).

[131] *Id*. at 4.

[132] *Id*. The LAR explains that an extensometer is an instrument installed in a borehole that is perpendicular to the face of the wall (or slab). The instrument consists of two anchors and a rod. The rod is attached to the anchor installed deep in the borehole and slides through a hole in the anchor installed near the surface. Extensometers will be used to measuring through-thickness expansion of plant structures. Specifically, expansion is monitored by measuring the distance between the end of the rod and the reference surface on the anchor near the surface. LAR at 30 of 73 (unnumbered).

concrete can accurately gauge the extent of ASR within a given concrete matrix" and that reliance on these methods without accompanying in-situ testing is insufficient.[133]

Contention A is admissible to the extent that it challenges the representativeness of the MPR/FSEL large-scale test program. Contention A, in this respect, is within the scope of this proceeding to the extent that it challenges the LAR's reliance on visual inspections, crack width indexing, and extensometers to assess ASR at Seabrook based on the results of the test program. Likewise, this portion of Contention A is material to the extent that the Staff must verify the representativeness of the test program to determine whether the use of visual inspections, crack width indexing, and extensometers is appropriate for Seabrook's ASR monitoring program. Contention A is supported by March 2013 and November 2013 reports disputing the reliability of using a crack width index, and Dr. Paul Brown's 2016 commentary specifically disputing the reliability of extensometers.[134] Finally, Contention A raises a genuine dispute with the LAR as to whether the test program is sufficiently representative such that it can provide a valid basis for NextEra's conclusion that visual inspections, crack width indexing, and extensometers are effective methods for assessing and monitoring ASR at Seabrook. Therefore, Contention A is admissible to the extent that its arguments challenge the representativeness of the test program.

Contention A, however, is inadmissible to the extent that it argues that the monitoring program involving visual inspections, crack width indexing, and extensometer deployment

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[133] Petition at 4.

[134] *Id*. at 3-4 (citing Nov. 2013 UCS Report at 3, March 2013 UCS Report at 6, and P. Brown Commentary 9/30/16). Contention A also relies on a June 19, 2013 document entitled "Seabrook Issues: Crack Displacement and Reinforcement" asserting that in a reinforced structure, ASR will manifest by creating networks of microcracks, while crack widths will remain narrow. This document was not publically available, nor was it attached to the Petition. The Staff requested the document from C-10 and was given a PDF document with a caption noting that the contents were copied and pasted from an email from Paul Brown, PhD to Deborah Grinnell, C-10. Because this document was neither publically available nor produced at the time the Petition was filed, the Staff does not consider it as meeting the requirements of 10 C.F.R. § 2.309(f)(1)(v).

proposed in the LAR must be replaced by a program of in-situ sampling of the Seabrook concrete.[135] This argument is not within the scope of the LAR or material to the findings that the Staff must make on the LAR. Specifically, to approve the LAR, the Staff must determine whether the proposed monitoring program, based on the test program, is sufficient. Thus, to the extent that C-10 argues that a different monitoring program could have also been sufficient, this argument is inadmissible because it is immaterial and outside the scope of this proceeding.[136]

3. Contention B (Prestressing Effect)

Contention B states:

> Expansion occurring within a reinforced concrete structure due to Alkali-Silica Reaction is not equivalent to a pre-stressing effect. Any mitigation of lost structural capacity, due to reinforcement, is temporary and unpredictable.[137]

Contention B disputes NextEra's statements in the LAR regarding the prestressing effect in reinforced concrete. Enclosure 2 to the LAR states, "[w]hen reinforcement is present to restrain the tensile force exerted by ASR expansion, an equivalent compressive force develops in the concrete that is comparable to prestressing."[138] The LAR also states that "the change in material properties does not necessarily result in a corresponding decrease in capacity of a reinforced concrete structure [because] ASR-induced expansion in reinforced concrete has a pre-stressing effect that mitigates the loss of structural capacity."[139] In contrast, Contention B argues that the assertion that ASR-impacted concrete held under "restraint" by reinforcing steel

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[135] Petition at 3-4.

[136] *See also id*. at 10 ("C-10 proposes that 'mining' the necessary concrete beams from the unused [Seabrook] Unit 2 for a thorough petrographic regimen, would get us all much closer to data that is truly 'representative' of the ASR dynamics at work in [Seabrook] Unit 1 ….").

[137] *Id*. at 4.

[138] *Id*. at 5 (citing LAR, Enclosure 2, Section 4.2) (emphasis omitted).

[139] *Id*. (citing LAR, Section 2.1) (emphasis omitted).

increases in strength "reflects a false understanding of the forces at work."[140] Contention B further states that concrete may show "a temporary increase in certain measures of strength, but irrevocably will advance toward failure."[141]

As support, Contention B refers to Dr. Paul Brown's 2016 commentary regarding NextEra's LAR, which asserts that "restraint does not stop the progress of the reaction" and that "[t]he course of ASR in restrained samples is known to initially cause pore filling, resulting in densification, which will for some period of time counteract the loss of structural capacity … [h]owever, eventually cracking does occur with an abrupt loss of mechanical properties …."[142] As further support, Contention B refers to a March 2013 Union of Concerned Scientists ("UCS") report noting Dr. Paul Brown's assertion that expansive ASR in concrete under restraint results in higher densities of microcracks, which reduces the strength of concrete.[143]

Contention B argues that expansion occurring within a reinforced concrete structure due to ASR is not equivalent to a prestressing effect and that NextEra has "a false understanding of the forces at work."[144] This argument is not material to the findings that the NRC must make because the LAR depends on limits derived from the MPR/FSEL large-scale test program such that, as long as the test program was bounding of the Seabrook concrete, then the limits would also be bounding regardless of which theory correctly explains the forces giving rise to these limits. In other words, if the limits of the concrete used in the test program match the limits of

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[140] Petition at 5.

[141] *Id*. (emphasis omitted).

[142] *Id*. (citing E-mail from D. Grinnel, C-10, to J. Poole, NRC, Re: C-10 and USC cover letter with Paul Brown's comments on Seabrook ASR LAR, at Attachment "Commentary on Seabrook Station, License Amendment Request 16-03" (Sept. 30, 2016) (ADAMS Accession No. ML16306A248) ("P. Brown Commentary 9/30/16")).

[143] Petition at 5 (citing Union of Concerned Scientists, Commentary on "Seabrook Station: Impact of Alkali-Silica Reaction on Concrete Structures and Attachments" (Mar. 2013), *available at* http://www.c-10.org/research/wp-content/uploads/2013/11/C-10_UCSMarch2013commentary.pdf ("UCS 3/13")).

[144] *Id*. at 4-5.

the Seabrook concrete, then the statements in the LAR regarding the prestressing effect of concrete are not material to the findings that the Staff must make on the LAR. Therefore, this argument is inadmissible.

However, portions of Contention B could be admissible to the extent that C-10 is challenging the representativeness of the test program itself. Contention B, in this respect, is within the scope of this proceeding to the extent that it challenges the LAR's reliance on the results of the test program in determining the effect of ASR in reinforced concrete at Seabrook. Also, this aspect of Contention B is material because, in order to approve the LAR, the Staff must determine that NextEra's evaluation of ASR behavior (including any prestressing effect) based on its test program is representative of the structures at Seabrook. In addition, as explained above, Contention B is supported by the opinion of Dr. Paul Brown. Finally, this aspect of Contention B raises a genuine dispute with the LAR because it challenges the sufficiency of NextEra's determination, based on the results of the test program, that the prestressing effect impacts the structures at Seabrook. Thus, portions of Contention B are admissible to the extent that C-10 challenges the representativeness of the test program.

4. Contention C (Petrographic Analysis)

Contention C states:

> Thorough petrographic analysis, including core sample testing of Seabrook's in-situ concrete, must be integral to NextEra's assessment of the advance of ASR. Because of the extreme danger imposed by the radioactive substances contained within their walls, petrographic analysis of concrete from the Containment structures and the Spent Fuel Pool should be required by NRC. NextEra's choice not to continue core sample testing–especially for safety-related structures—is based on spurious assumptions, leaves inspectors and the surrounding communities with an unnecessarily incomplete picture of the actual state of concrete degradation, and could endanger the public health and safety.[145]

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[145] Petition at 6.

Contention C disputes NextEra's rationale for not undertaking petrographic analysis by asserting that the behavior of an ASR-affected core no longer reflects that of the confined structure once it has been removed from the structure and the prestressing effect is lost.[146] Contention C also argues that the scientific consensus is that thorough investigation of degraded concrete structures must include petrography and testing of core samples.[147] As explained below, Contention C is only admissible to the extent that some of its arguments complement and support portions of Contentions B and D.

Contention C raises arguments similar to those raised in Contention B with respect to the prestressing effect on concrete and the compressive strength of concrete. For example, similar to Contention B, as described above, Contention C argues that the discernable benefit from ASR expansion in confinement is temporary because micro-cracking leads to an "autocatalytic collapse of the concrete's properties."[148] Moreover, Contention C argues that petrographic analysis is necessary much like in Contention B, which states that "the danger in misconstruing the effects of ASR, acting with the restraint imposed by reinforc[ing] steel" is that serious degradation may go unnoticed without employing thorough petrographic analysis.[149] To the extent that the arguments in these two contentions raise similar issues regarding the effect of prestressing and microcracks, the Staff submits that these portions of Contention C are admissible for the same reasons outlined in the response to Contention B above.

Contention C also asserts that NextEra should perform petrographic analysis at Seabrook and disputes NextEra's reliance on the concept of a prestressing effect in reinforced concrete and the loss of any such effect when core samples are removed from the structure as

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[146] Petition at 6 (citing UFSAR, Rev. 16, Section 3.8).

[147] *Id*. at 7.

[148] *Id*. at 7, 8.

[149] *Id*. at 5.

a reason for not undertaking petrographic testing.[150] As support, Contention C refers to the opinion of Dr. Paul Brown asserting that core sampling should be done and that models for predicting the path of ASR in reinforced structures have been described in papers specifically citing the need to carry out core testing in reinforced concrete and the omission of any reference to these models in the LAR.[151] However, C-10's generalized assertions that petrographic analysis is necessary at Seabrook are not admissible because they are not material to the findings that the Staff must make in approving this LAR. To approve the LAR, the Staff must determine that NextEra's evaluation of ASR behavior based on the MPR/FSEL large-scale test program is representative of the structures at Seabrook. Therefore, the arguments in Contention C that NextEra should have subjected the Seabrook concrete to petrographic analysis are immaterial if the limits on the Seabrook concrete can be independently derived from the test program.

However, these portions of Contention C could be admissible to the extent that C-10 is challenging the representativeness of the test program itself. As explained above, Contention D argues that the test program is not representative of the progression of ASR at Seabrook and that, therefore, petrographic analysis is necessary.[152] Thus, to the extent that C-10's arguments in Contention C pertain to the representativeness of the test program, these portions of Contention C should be admitted.

Finally, C-10 also argues that NextEra must perform petrographic analysis of core samples at Seabrook to assess ASR because the Seabrook reactor presents great risk of environmental and human consequences due to the storage of highly radioactive substances,

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[150] Petition at 7, 8.

[151] *Id*. at 7 (citing P. Brown Commentary 9/30/16).

[152] *Id*. at 8-10.

which can be found in concrete structures and the spent fuel pool.[153] However, C-10's conclusory assertions about the risk of harm at Seabrook are unsupported and thus are insufficient to support an admissible contention under 10 C.F.R. § 2.309(f)(1)(v). Therefore, this portion of Contention C is not admissible and should be dismissed.

5. Contention G (Tipping Point)

Contention G states:

> Omitted from the LAR 16-03 is the "tipping point" concept. While there is acknowledgement of the progressive nature of ASR, there has been no testing nor proposed future testing of either manufactured concrete samples as in the FSEL (Ferguson Structural Engineering Laboratory) Texas tests nor of actual concrete from Seabrook Station itself to the point of failure/limit state.[154]

C-10 states that it considers the "tipping point" to be the point at which structural failure is reached.[155] C-10 faults NextEra for not testing out to this "tipping point."[156] It states that, without such testing, NextEra cannot find that the "tipping point" will not occur.[157]

The LAR states that the MPR/FSEL large-scale test program involved "levels of ASR that bound ASR levels currently found in Seabrook structures …."[158] The LAR states that the test program did not "test[] out to ASR levels where there was a clear change in limit state capacity."[159] However, the LAR provides "limits to maintain the validity of the test program results for Seabrook structures."[160] That is, the LAR derived limits from the test program, which

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[153] Petition at 6-8.

[154] *Id*. at 13.

[155] *Id*. at 14.

[156] *Id*.

[157] *Id*.

[158] LAR at 16 of 73 (unnumbered).

[159] LAR at 16 of 73 (unnumbered).

[160] *Id*.

are more conservative than the "tipping point," and ensures that the Seabrook concrete will not reach the "tipping point" by requiring that the concrete be maintained within these limits.[161]

Since the LAR is structured such that the limits on the Seabrook concrete are more conservative than the "tipping point" of the concrete, whether NextEra should be required to affirmatively determine this "tipping point" is not material to the findings that the NRC must make on the LAR. The findings that the NRC must make on the LAR include finding that there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, that there is reasonable assurance that such activities will be conducted in compliance with the Commission's regulations, and that the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.[162] None of these findings would be affected by an academic inquiry into what, exactly, is the Seabrook concrete's "tipping point." Instead, it would be sufficient for NextEra to show that the LAR will limit the Seabrook concrete to a point known to be less than the "tipping point." Therefore, Contention G is inadmissible to the extent that it demands the determination of a Seabrook concrete "tipping point" that is greater than the limits imposed by the LAR.

However, the limits imposed by the LAR are derived from, and, in turn, determined to be conservative by the MPR/FSEL large-scale test program. Thus, to the extent that C-10 argues that the test program is not representative of the Seabrook concrete, the limits in the LAR may also not be conservative with respect to the Seabrook concrete's "tipping point." As a result, although Contention G, in and of itself, is inadmissible, it is admissible in combination with Contention D with respect to whether the test program is bounding of the Seabrook concrete such that the expansion limits proposed by the LAR are adequate.

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[161] LAR at 31 of 73 (unnumbered).

[162] 10 C.F.R. § 50.40.

6. Contention H (Inspection Intervals)

Contention H states:

> The proposed inspection intervals laid out in [the LAR] are too long, and too fixed, to effectively measure the ongoing effects of ASR to structures at [Seabrook] in a timely manner.[163]

C-10 argues that the LAR's inspection intervals are insufficient to detect declining conditions in the Seabrook concrete structures because "there is no real knowledge of the speed of disintegration of concrete …."[164] C-10 argues that there is insufficient basis for the inspection intervals because they are derived from the MPR/FSEL large-scale test program and not from the testing of Seabrook concrete.[165] C-10 has identified a specific dispute with the LAR and has provided some limited support in the referenced documents. However, since the LAR includes periodic monitoring of ASR to ensure that the conclusions of the test program remain valid and that the level of ASR at Seabrook does not exceed that considered under the test program,[166] the issue in dispute is the representativeness of the test program. To this extent, C-10's challenge to the appropriateness of the LAR's inspection intervals amounts to an admissible contention when added to Contention D.

C. Reformulation of Contentions A, B, C, D, G, and H

As explained above, Contention D, which generally challenges the representativeness of the MPR/FSEL large-scale test program, forms the basis of an admissible contention when combined with portions of Contentions A, B, C, G, and H. Due to the interrelationship of these proposed contentions, the Staff suggests, in order to improve clarity, re-writing the contentions as the following single, admissible contention:

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[163] Petition at 2, 15.

[164] *Id*. at 15.

[165] *Id*. 15.

[166] LAR at 16, 26, 31-32 of 73 (unnumbered).

> The MPR/FSEL large-scale test program is not bounding of the Seabrook concrete because of the age of the Seabrook concrete, the length of time that ASR has propagated in the Seabrook concrete, the effect of water at varying levels of height and varying levels of salt concentration on the Seabrook concrete, the effect of heat on the Seabrook concrete, and the effect of radiation on the Seabrook concrete. As a result, the proposed monitoring, acceptance criteria, and inspection intervals are not adequate.

However, because C-10 has failed to carry its burden of demonstrating standing, its Petition should be denied in its entirety notwithstanding its inclusion of this single, admissible contention.

D. Contentions E, F, I, and J are Inadmissible

Contentions E, F, I, and J are inadmissible. In general, these contentions are inadmissible because they raise issues that are outside the scope of the LAR, raise issues that are not material to the findings that the Staff must make on the LAR, or impermissibly challenge the Commission's regulations.

1. Contention E (Proprietary Data)

Contention E states:

> NextEra's insistence that data from the FSEL testing are proprietary is not good science, and undermine any trust within nearby communities that the ASR problem is being handled with the public's best interests at heart. NextEra's cloaking this data behind a proprietary curtain harms the interests of the community around Seabrook as well as the nuclear community. C-10 anticipates that the proceeding initiated by our filing will result in this data seeing the light of day for the benefit of many.[167]

C-10 bases this contention on two issues: (1) people located near Seabrook have a "right to know just how safe … the most dangerous components of the reactor facility are" and (2) "publication of test results would allow the larger engineering community to have access to the data, so that proper feedback mechanisms for review are established."[168] Contention E is inadmissible because it fails to raise an issue that is material to the findings that the Staff must

[167] Petition at 11.

[168] *Id*.

make on the LAR, raises issues that are outside the limited scope of this proceeding, and impermissibly challenges the Commission's regulations.

a. Contention E is Not Material to the LAR

The Commission's regulations provide for withholding a wide range of information.[169] Specifically, the Commission's regulations allow licensees and applicants to withhold information from public disclosure that constitutes "[t]rade secrets and commercial or financial information obtained from a person and privileged or confidential."[170] As NextEra affirmed, limited information developed by MPR/FSEL has been withheld because it is a trade secret that provides a credible commercial and financial advantage.[171] C-10 does not dispute that the information NextEra developed in association with MPR/FSEL constitutes a trade secret with commercial value that has not otherwise been made public.[172] Nor does it assert that NextEra failed to follow the regulations to assert protection from disclosure. C-10, instead, argues that, on balance, the need for disclosure outweighs the licensee's interest in protecting the information from disclosure.[173] As such, C-10 is essentially challenging the Staff's determination that the information was entitled to protection under 10 C.F.R. § 2.390.[174] However, this does not raise a genuine material dispute with the LAR. The issue of whether the

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[169] *See generally* 10 C.F.R. § 2.390.

[170] 10 C.F.R. § 2.390(a)(4).

[171] LAR at 4-5 of 73 (unnumbered).

[172] For example, C-10 asserts that Seabrook must "sacrifice [any] 'competitive advantage' as part of the price of continued operation of a reactor with 'degraded but operable' characteristics." Petition at 11 (emphasis added). However, C-10's only basis for this insistence on public disclosure is that NextEra's action to withhold the information represents an "extraordinary point of view." *Id*. C-10 is mistaken because information is withheld from public disclosure for a variety of valid reasons. 10 C.F.R. § 2.390. Regardless of the reason for withholding the information, the withholding of information does not impact a member of the public's ability to participate in the determination regarding the adequacy of the license amendment. 82 Fed. Reg. at 9606.

[173] Petition at 11.

[174] *Id*.

submitted information is protected from public disclosure or is publicly released cannot alter whether the LAR is acceptable and should be granted. C-10 had an opportunity to pursue access to this information prior to filing its contention.[175] Alternatively, C-10 would be able to gain access to this information under a protective order should the Board grant the Petition.

b. Contention E is Outside the Scope of the LAR

The resolution of whether NextEra properly asserted that certain information should be withheld from public disclosure is also outside the scope of this proceeding for the purpose of whether a contention is admissible. While the issue of whether information should be protected from public disclosure could be challenged tangentially as part of a proceeding with an admitted contention, the issue of whether information is withheld from public disclosure is not within the scope of the proposed changes to the Seabrook license.

c. Contention E is a Challenge to the Commission's Regulations

Finally, C-10's assertion that NextEra should not be allowed to withhold information based on its proprietary nature is an impermissible challenge to the Commission's regulations at 10 C.F.R. § 2.390 and, therefore, cannot form the basis for an admissible contention.[176] If C-10 believes that information that forms the basis of a license or license amendment should not be withheld from public disclosure as policy, its recourse is to file a petition for rulemaking pursuant to 10 C.F.R. § 2.802 to have the rules that allow for such withholding to be changed.[177]

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[175] 82 Fed. Reg. at 9606.

[176] 10 C.F.R. § 2.335 (providing that no rule or regulation of the Commission is subject to attack in any adjudicatory proceeding except upon petition by a participant that the application of the specified Commission rule or regulation be waived for the particular proceeding).

[177] Although the Commission's regulations provide an opportunity for a petitioner to seek a waiver regarding challenges to the Commission's regulations under 10 C.F.R. § 2.335, the regulation requires that the petitioner demonstrate special circumstances (*i.e.*, that application of the rule in this proceeding would not serve the particular purposes for which the rule was adopted) and be accompanied by an affidavit stating with particularity the special circumstances. 10 C.F.R. § 2.335. In this instance, C-10 did not request a waiver or provide a supporting affidavit. Thus, C-10 may not challenge in this proceeding the Commission's regulations regarding withholding proprietary information from public disclosure.

Since Contention E raises issues that are not material to the findings that the Staff must make on the LAR, raises issues outside the limited scope of this license amendment proceeding, and challenges the Commission's regulations, Contention E cannot form the basis of an admissible contention. Therefore, Contention E is inadmissible.

2. Contention F (Reinforcement)

Contention F states:

> Assumptions made by NextEra and MPR Associates, Inc. (MPR) concerning the continued robustness of reinforcing steel at the Seabrook reactor are at odds with clear evidence of the in-situ chemistry necessary for corrosion. Only direct testing will ensure that corrosion does not further degrade the strength of already impaired concrete. Reliance on spurious assumptions of robustness could cause a significant over-estimation of the strength of concrete in "constraint," thereby leading to an unforeseen failure of concrete spans within Seabrook's safety-related structures.[178]

C-10 supports Contention F with unsupported assertions regarding Seabrook's initial construction and with references to statements made by Dr. Brown regarding the potential for the depassivation and corrosion of the embedded rebar in ASR-affected structures.[179] Further, C-10 does not acknowledge that the potential for rebar corrosion and depassivation is already covered by the Seabrook Structures Monitoring Program ("SMP") and that the LAR does not make any changes to this portion of the SMP. The SMP currently provides for monitoring for rebar corrosion through monitoring the concrete surfaces for corrosion products.[180] As explained below, Contention F is inadmissible because it is outside the scope of the LAR and

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[178] Petition at 2, 12.

[179] Petition at 12. C-10's petition cites various non-public commentaries from Paul Brown, PhD, to support its contentions. *Id*. In some cases, the cited documents appear to be no more than a random collection of notes. *See, e.g.*, Attachment A, at 2-3.

[180] *See, e.g.,* LRA, Attachment, Appendix B, "Aging Management Programs," at B-164 – B-165 (explaining that the SMP is an existing program in accordance with the requirements specified in ACI 349.3R-96, *Evaluation of Existing Nuclear Safety related Concrete Structures*). *See also* ACI 349.3R-96, *Evaluation of Existing Nuclear Safety related Concrete Structures*, at 11, 13-16 (June 17, 2002) (providing acceptance criteria and visual inspection techniques for concrete embedded reinforcement) ("ACI-349.3R").

because it fails to raise an issue that is material to the findings that the Staff must make on the LAR.

a. Contention F is Outside the Scope of the LAR

Contention F is outside the scope of the LAR because Seabrook has an existing Structures Monitoring Program under the Maintenance Rule as part of its current license.[181] This program already inspects for evidence of rebar corrosion through routine visual inspections for corrosion products on the concrete surfaces and through opportunistic visual inspections of exposed rebar.[182] The LAR is not seeking to make any changes to the Structures Monitoring Program with respect to potential rebar corrosion. C-10 does not identify any evidence of potential rebar corrosion to support its assertion that the rebar is undergoing corrosion. Further, NextEra has not identified any signs or symptoms of rebar corrosion.[183] The LAR does not propose to change the methods for monitoring rebar corrosion. Thus, Contention F's arguments regarding rebar corrosion are outside the scope of this license amendment proceeding and not admissible.[184]

b. Contention F is Not Material to the LAR

While C-10 speculates that rebar corrosion is occurring and may have some potential impact on the adequacy of the LAR, it points to no specific evidence showing that rebar corrosion has occurred or is currently occurring within the ASR-affected Seabrook structures unlike the identified ASR problems at Seabrook. Without any such evidence of actual rebar

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[181] Seabrook Station, Unit No 1 – Confirmatory Action Letter Follow-Up Inspection - NRC Inspection Report 05000443/2012010, Enclosure 1, at 12-13.

[182] LRA, Attachment, Appendix B, "Aging Management Programs," at B-164 – B-165; ACI 349.3R, at 11, 13-16.

[183] Comments from Paul Brown, C-10 Foundation's Notes of Questions for Paul Brown, as summarized from ML122070401: Transcript of the ACRS Plant License Renewal Subcommittee Meeting (Open), Page 1-179 (July 10, 2012), Attachment A, at 2.

[184] C-10's alternative, if it still believes that rebar corrosion is occurring, is to file a 10 C.F.R. § 2.206 petition. *But see* Letter from R. Taylor, NRC, to S. Gavutis, C-10 (July 6, 2016) (ADAMS Accession No. ML16169A172) (rejecting C-10's previously filed 10 C.F.R. § 2.206 petition).

corrosion such as that presented with respect to ASR, C-10's conclusory assertions provide insufficient support to demonstrate that NextEra's LAR is somehow deficient for not accounting for this possibility. As such, there is no reason to assume that the rebar does not retain its reinforcement properties currently. C-10 speculates that the Seabrook rebar was installed incorrectly and that this issue was unresolved and unaccounted for.[185] However, the issue was resolved during construction and the rebar was installed satisfactorily.[186] Since the rebar installation concerns were resolved satisfactorily, this issue is outside the limited scope of this proceeding. Dr. Brown further speculates that due to the aggressive environment surrounding Seabrook, the rebar has undergone depassivation and is currently corroded or actively corroding.[187] However, the same deposits that Dr. Brown asserts should be sampled would also show rust products leaching through the concrete and leaving visible deposits on the surface of the concrete, which, in turn, would be identified as part of the existing Seabrook Structures Monitoring Program.[188] The issue of whether chlorides have entered the concrete is not material to the ASR methodology in the LAR because no signs of rebar corrosion are present. The presence of chlorides without active signs of rebar corrosion is not material to the decision that must be made by the Staff on this LAR.

Thus, Contention F is outside the scope of the LAR and not material to the decision that must be made on the LAR. It is, therefore, not admissible.

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[185] Petition at 12.

[186] Letter from S. Ebneter, NRC, to R. Harrison, Public Service of New Hampshire, Special Inspection No. 50-443/86-52, Enclosure, at 24 (Dec. 19, 1986) (ADAMS Accession No. ML16208A279).

[187] Petition at 12.

[188] LRA, Attachment, Appendix B, "Aging Management Programs," at B-164 – B-165; ACI 349.3R, at 11, 13-16.

3. Contention I (Sea-Level Rise) is Not Admissible

Contention I states:

> Completely omitted from LAR 16-03 is the vital factor of expected sea level rise on the progression of ASR at the portions of the plant exposed to possible sea water encroachment/ inundation.[189]

C-10 asserts that Seabrook "is in a seaside location in a part of the world where sea-levels are rising faster than in most other areas, making it more susceptible to extreme storms and coastal flooding."[190] C-10 concludes that this asserted sea-level rise needs to be included in the LAR because it could cause "ASR exacerbation" and "corrosion exacerbation."

Although C-10 asserts as fact "expected sea level rise" and "sea levels … rising faster than in most other areas," C-10 provides no alleged facts or expert opinions, together with references to the specific sources and documents on which C-10 intends to rely, which support these assertions. Therefore, Contention I does not satisfy 10 C.F.R. § 2.309(f)(1)(v).[191] Additionally, C-10's argument that NextEra's alleged failure to "account[] for the effects of sea level rise during [the] remaining license period, is short-sighted and irresponsible"[192] is not within the scope of this proceeding or material to the findings that the NRC must make on the LAR, in contravention of 10 C.F.R. § 2.309(f)(1)(iii)-(iv). Therefore, Contention I is not admissible.

Moreover, the Staff notes that, to the extent that Contention I argues that sea water inundation, as opposed to sea level rise, may affect the progression of ASR, this argument is already fully encompassed by the admissible portion of Contention D. Specifically, Contention D argues that the MPR/FSEL large-scale test program is not representative of the Seabrook

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[189] Petition at 16.

[190] *Id.*

[191] *See, e.g., Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 6 and 7), LBP-11-15, 73 NRC 629, 642-43 (2011) (finding that a contention asserting that an application was insufficient because it did not consider or incorporate any "scientifically valid projection for sea level rise" was inadmissible because, in part, the support provided for the contention did not specifically demonstrate that the inundation of the facility was a "plausible scenario").

[192] Petition at 16.

concrete because, in part, it did not sufficiently account for the effect of water and salinity on the Seabrook concrete.[193]

4. Contention J (Inappropriate Language) is Not Material to the LAR

Contention J is inadmissible because, in contravention of 10 C.F.R. § 2.309(f)(1)(iv), it is not material to the findings that the Staff must make on the LAR. Contention J states:

> The language used in LAR 16-03 is inappropriate for a document written for the purpose of demonstrating objectivity in the testing—and the conclusions of that testing—by MPR / FSEL, on its manufactured concrete specimens.[194]

The C-10 Foundation objects to the "tone" of the Seabrook LAR and states that the language used in the Seabrook LAR "seems to pre-suppose test outcomes in favor of NextEra's continued operation of the plant …."[195]

Section 2.309(f)(1)(iv) states that, in order of a contention to be admissible, the petitioner must 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. This means that the petitioner must demonstrate that the "subject matter of the contention would impact the grant or denial of [the] pending license application"[196] or, in other words, "make a difference in the outcome of the licensing proceeding."[197]

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[193] Petition at 10.

[194] *Id*. at 16.

[195] *Id*.

[196] *Indian Point*, LBP-08-13, 68 NRC at 62.

[197] *PFS*, LBP-98-7, 47 NRC at 179. *See also* Rules of Practice for Domestic Licensing Proceedings – Procedural Changes in the Hearing Process, 54 Fed. Reg. 33,168, 33,168 (Aug. 11, 1989) (Final rule) ("[A]dmission of a contention may also be refused … if it is determined that the contention, even if proven, would be of no consequence in the proceeding because it would not entitle the petitioner to relief.").

The findings that the NRC must make to support a license amendment request are those which govern the issuance of initial licenses to the extent applicable and appropriate.[198] This includes finding that there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, that there is reasonable assurance that such activities will be conducted in compliance with the Commission's regulations, and that the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.[199]

The particular language that is used to convey the information in a license amendment request is not material to the findings that the NRC must make on the license amendment request regarding the public health and safety, compliance with the Commission's regulations, and inimicality. Regardless of how the information in a license amendment request is presented, the NRC makes these determinations based on the information provided and not on the manner by which that information is provided. To the extent that the manner by which the information in a license amendment request is provided makes the information unclear, the NRC will clarify the information through requests for additional information. Therefore, even if, as alleged by the C-10, the Seabrook LAR was written with a "tone" that "seems to pre-suppose test outcomes in favor of NextEra's continued operation of the plant," this would not make a difference in the outcome of the licensing proceeding.[200] Consequently, the Board should find that Contention J is inadmissible because it does not satisfy 10 C.F.R. § 2.309(f)(1)(iv).

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[198] 10 C.F.R. § 50.92(a).

[199] 10 C.F.R. § 50.40.

[200] Moreover, in general, a license amendment request is a demonstration in support of a licensee's position that its request meets the applicable requirements and should be approved by the NRC. This manner of presentation is not material to the Staff's findings on the license amendment request.

E. Summary of Inadmissible Contentions

Contentions E, F, I, and J are inadmissible. They are inadmissible because they raise issues that are not material to the Staff's decision on the LAR, they are outside the limited scope of this license amendment proceeding, or they impermissibly challenge the Commission's rules. Additionally, the issue raised in Contention I regarding the potential impact of water and salinity on the MPR/FSEL large-scale test program data is redundant to the admissible issues asserted in Contention D.

CONCLUSION

While the Petition asserts what, when reformulated, could have been the basis for a single admissible contention, C-10 failed to carry its burden to demonstrate standing to intervene in this proceeding. Because of C-10's lack of standing, the Petition should be denied.

Respectfully submitted,

Signed (electronically) by

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Brian G. Harris
Counsel for the NRC Staff
U.S. Nuclear Regulatory Commission
Mail Stop O-15 D21
Washington, DC 20555-0001
Telephone: (301) 2879120
E-mail: brian.harris@nrc.gov
Date of Signature: May 5, 2017

Executed in Accord with 10 CFR 2.304(d)

Anita Ghosh
Counsel for NRC Staff
U.S. Nuclear Regulatory Commission
Office of the General Counsel
Mail Stop O14-A44
Washington, DC 20555
Telephone: (301) 287-9175
E-mail: Anita.Ghosh@nrc.gov

Executed in Accord with 10 CFR 2.304(d)

Jeremy L. Wachutka
Counsel for NRC Staff
U.S. Nuclear Regulatory Commission
Office of the General Counsel
Mail Stop O14-A44
Washington, DC 20555
Telephone: (301) 287-9188
E-mail: Jeremy.Wachutka@nrc.gov

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
	)	
NEXTERA ENERGY SEABROOK LLC	)	Docket No. 50-443-LA2
	)	
(Seabrook Station, Unit 1)	)	
	)	

CERTIFICATE OF SERVICE

Pursuant to 10 C.F.R. § 2.305 (revised), I hereby certify that copies of the foregoing "NRC Staff's Answer To C-10 Research and Education Foundation, Inc. Petition For Leave To Intervene," dated May 5, 2017, and "Attachment A – Comments from Paul Brown, C-10 Foundation's Notes of Questions for Paul Brown, as summarized from ML122070401: Transcript of the ACRS Plant License Renewal Subcommittee Meeting (Open), Page 1-179," dated July 10, 2017, have been filed through the Electronic Information Exchange, the NRC's E-Filing System, in the above-captioned proceeding, this 5th day of May, 2017.

/Signed (electronically) by/

Brian G. Harris
Counsel for the NRC Staff
U.S. Nuclear Regulatory Commission
Mail Stop O-15 D21
Washington, DC 20555-0001
Telephone: (301) 287-9120
E-mail: brian.harris@nrc.gov

Date of Signature: May 5, 2017