

**APPENDIX A: NextEra Energy Seabrook, LLC, Docket No. 50-443-LA-2
September 2019 Evidentiary Hearing Exhibits**

[Party] Exh. No.	Witness/ Panel	Exhibit Title/Description	ADAMS Accession No.
NRC001-R	NRC Staff	Staff Testimony	
NRC002	NRC Staff	Statement of Professional Qualifications of Angela Buford	
NRC003	NRC Staff	Statement of Professional Qualifications of Bryce Lehman	
NRC004	NRC Staff	Statement of Professional Qualifications of George Thomas	
NRC005	NRC Staff	Jacob Philip Testimony	
NRC006	NRC Staff	Statement of Professional Qualifications of Jacob Philip	
NRC007	NRC Staff	Seabrook Station Updated Final Safety Analysis Report (UFSAR), Chapter 3, "Design of Structures, Components, Equipment and Systems," Revision 18 (October 2017)	ML17310A406
NRC008	NRC Staff	Enclosure 3 to Original LAR, MPR-4273, Revision 0, "Seabrook Station - Implications of Large-Scale Test Program Results on Reinforced Concrete Affected by Alkali-Silica Reaction" (July 2016)	ML16216A242

[Party] Exh. No.	Witness/ Panel	Exhibit Title/Description	ADAMS Accession No.
NRC009 (Proprietary)	NRC Staff	Enclosure 6 to Original LAR, MPR-4273, Revision 0, “Seabrook Station - Implications of Large-Scale Test Program Results on Reinforced Concrete Affected by Alkali-Silica Reaction” (July 2016)	ML16216A246
NRC010	NRC Staff	Letter from Ralph A. Dodds III, NextEra, to NRC Document Control Desk, “Seabrook Station, Supplement to 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” (Sept. 30, 2016)	ML16279A048
NRC011	NRC Staff	Enclosure 3 to Sept. 2016 LAR Supplement, MPR-4153, Revision 2, “Seabrook Station – Approach for Determining Through-Thickness Expansion from Alkali-Silica Reaction” (July 2016)	ML16279A050
NRC012 (Proprietary)	NRC Staff	Enclosure 5 to Sept. 2016 LAR Supplement, Revision 2, MPR-4153, Rev. 2, “Seabrook Station – Approach for Determining Through Thickness Expansion from Alkali-Silica Reaction” (July 2016)	ML16279A055
NRC013	NRC Staff	Letter from Eric McCartney, NextEra, to NRC Document Control Desk, “Seabrook Station, Response to Request for Additional Information Regarding License Amendment Request 16-03 Related to Alkali-Silica Reaction” (Oct. 3, 2017)	ML17277A337

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NRC014	NRC Staff	Letter from Eric McCartney, NextEra, to NRC Document Control Desk, "Seabrook Station, Response to Request for Additional Information Regarding License Amendment Request Related to Alkali-Silica Reaction" (Dec. 11, 2017)	ML17345A641
NRC015	NRC Staff	Letter from Christopher Domingos, NextEra, to NRC Document Control Desk, "Seabrook Station, Response to Request for Additional Information Regarding License Amendment Request 16-03" (June 7, 2018)	ML18158A540
NRC016	NRC Staff	Letter from Eric McCartney, NextEra, to NRC Document Control Desk, "Seabrook Station Revised Structures Monitoring Aging Management Program" (May 18, 2018)	ML18141A785
NRC017	NRC Staff	Letter from Tam Tran, NRC, to Dean Curtland, NextEra, "Alkali Silica Reaction Monitoring Aging Management Program Audit Report Regarding the Seabrook Station, Unit 1, License Renewal (TAC No. ME4028)" (Dec. 17, 2015)	ML15307A022
NRC018	NRC Staff	Seabrook ASR-Monitoring Program Audit Report, Enclosure to Dec. 17, 2015 Letter to NextEra (undated)	ML15337A047
NRC019	NRC Staff	Confirmatory Action Letter, Seabrook Station, Unit 1 – Information Related to Concrete Degradation Issues (May 16, 2012)	ML12125A172

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NRC020	NRC Staff	Letter from Richard A. Plasse, NRC, to Paul Freeman, NextEra, "Audit Report Regarding the Seabrook Station License Renewal Application (TAC Number ME4028)" (Mar. 21, 2011)	ML110280424
NRC021	NRC Staff	Letter from Arthur L. Burritt, NRC, to Paul Freeman, NextEra, "Seabrook Station, Unit No. 1 - NRC Integrated Inspection Report 05000443/2011002" (May 12, 2011)	ML111330689
NRC022	NRC Staff	Letter from Richard J. Conte, NRC, to Paul Freeman, NextEra, "NextEra Energy Seabrook - NRC License Renewal Inspection Report 05000443/2011007" (May 23, 2011)	ML111360432
NRC023	NRC Staff	Letter from Arthur L. Burritt, NRC, to Paul Freeman, NextEra, "Seabrook Station, Unit No. 1 - NRC Integrated Inspection Report 05000443/2011003" (Aug. 12, 2011)	ML112241543
NRC024	NRC Staff	Letter from Christopher G. Miller, NRC, to Paul Freeman, NextEra, "Seabrook Station - NRC Inspection Report 05000443/2011010 Related to Alkali-Silica Reaction Issue In Safety Related Structures" (Mar. 26, 2012)	ML120480066

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NRC025	NRC Staff	Letter from Christopher G. Miller, NRC, to Kevin Walsh, NextEra, "Seabrook Station, Unit No. 1 - Confirmatory Action Letter Follow-up Inspection - NRC Inspection Report 05000443/2012009, Enclosure, Inspection Report No. 0500044312012009" (Dec. 3, 2012)	ML12338A283
NRC026	NRC Staff	Letter from Raymond K. Lorson, NRC, to Kevin Walsh, "Seabrook Station, Unit No. 1 - Confirmatory Action Letter Follow-up Inspection - NRC Inspection Report 05000443/2012010" (Aug. 9, 2013)	ML13221A172
NRC027	NRC Staff	Letter from Glenn T. Dentel, NRC, to Kevin Walsh, NextEra, "Seabrook Station, Unit No. 1 - NRC Integrated Inspection Report 05000443/2013005" (Jan. 30, 2014)	ML14030A509
NRC028	NRC Staff	Letter from Glenn T. Dentel, NRC, to Kevin Walsh, NextEra, "Seabrook Station, Unit No. 1 - NRC Integrated Inspection Report 05000443/2014002" (May 6, 2014)	ML14127A376
NRC029	NRC Staff	Letter from Glenn T. Dentel, NRC, to Dean Curtland, NextEra, "Seabrook Station, Unit No. 1 - NRC Integrated Inspection Report 05000443/2014003" (Aug. 5, 2014)	ML14212A458

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NRC030	NRC Staff	Letter from Glenn T. Dentel, NRC, to Dean Curtland, NextEra, "Seabrook Station, Unit No. 1 - NRC Integrated Inspection Report 05000443/2014005," (Feb. 6, 2015)	ML15037A172
NRC031	NRC Staff	Letter from Glenn T. Dentel, NRC, to Dean Curtland, NextEra, "Seabrook Station, Unit No. 1 - NRC Integrated Inspection Report 05000443/2015002," (Aug. 5, 2015)	ML15217A256
NRC032	NRC Staff	Letter from Fred L. Bower, III, NRC, to Dean Curtland, NextEra, "Seabrook Station, Unit No. 1 - NRC Integrated Inspection Report 05000443/2015004 and Independent Spent Fuel Storage Installation Report No. 07200063/2015001" (Feb. 12, 2016)	ML16043A391
NRC033	NRC Staff	Letter from Mel Gray, NRC, to Dean Curtland, NextEra, "Seabrook Station, "Seabrook Station - Inspection Report 05000443/2016008 Related to Alkali-Silica Reaction Affects On Safety-Related Concrete Structures And Notice Of Violation," (May 6, 2016)	ML16127A155
NRC034	NRC Staff	Letter from to Eric McCartney, NextEra, "Seabrook Station, Unit No. 1 – Integrated Inspection Report 05000443/2016002," (Aug. 5, 2016)	ML16218A455

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NRC035	NRC Staff	Letter from Fred L. Bower, III, NRC, to Eric McCartney, NextEra, "Seabrook Station, Unit No. 1 – Integrated Inspection Report 05000443/2016004," (Feb. 8, 2017)	ML17040A220
NRC036	NRC Staff	Letter from Fred L. Bower, III, NRC, to Mano Nazar, NextEra, "Seabrook Station, Unit No. 1 – Integrated Inspection Report 05000443/2017002," encl. at 31–32 (Aug. 14, 2017)	ML17227A018
NRC037	NRC Staff	Letter from Fred L. Bower, III, NRC, to Mano Nazar, NextEra, "Seabrook Station, Unit No. 1 – Integrated Inspection Report 05000443/2017004," encl. at 24–27 (Feb. 12, 2018)	ML18043A821
NRC038	NRC Staff	Letter from Fred L. Bower, III, NRC, to Mano Nazar, NextEra, "Seabrook Station, Unit No. 1 – Integrated Inspection Report 05000443/2018001," encl. at 8–9 (May 14, 2018)	ML18134A222
NRC039	NRC Staff	Letter from Mel Gray, III, NRC, to Mano Nazar, NextEra, "Seabrook Station, Unit No. 1 – Integrated Inspection Report 05000443/2018011," (Aug. 10, 2018)	ML18222A292
NRC040	NRC Staff	Letter from Fred L. Bower, NRC, to Mano Nazar, NextEra, "Seabrook Station, Unit No. 1 – Integrated Inspection Report 05000443/2018003," (Nov. 13, 2018)	ML18318A009

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NRC041	NRC Staff	Letter from Richard Plasse, NRC, to Kevin Walsh, NextEra, "Aging Management Program Audit Report Regarding the Seabrook Station License Renewal Application (TAC No. ME4028)" (Dec. 23, 2013)	ML13354B785
NRC042	NRC Staff	Letter from Tam Tran, NRC, to Eric McCartney, NextEra, "Alkali Silica Reaction Monitoring Aging Management Program Audit Report Regarding the Seabrook Station," Unit 1, License Renewal (CAC No. ME4028)" (Dec. 21, 2016)	ML16333A247
NRC043	NRC Staff	Letter from Justin C. Poole, NRC, to Mano Nazar, NextEra, "Seabrook Station, Unit No. 1 - Site Visit Report Regarding Regulatory Audit for License Amendment Request Re: Alkali-Silica Reaction License Amendment Request and License Renewal Alkali-Silica Reaction Aging Management Program Review (CAC No. MF8260; EPID L-2016-LLA-0007)" (July 26, 2017)	ML17199T383
NRC044	NRC Staff	Letter from Justin C. Poole, NRC, to Mano Nazar, NextEra, "Seabrook Station, Unit No. 1 - Site Visit Report Regarding Regulatory Audit for License Amendment Request Re: Alkali-Silica Reaction License Amendment Request and License Renewal Alkali-Silica Reaction Aging Management Program Review (CAC No. MF8260; EPID L-2016-LLA-0007)" (May 21, 2018)	ML18135A046

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NRC045	NRC Staff	Memorandum from Eric J. Leeds, NRR, and William M. Dean, Region 1, Seabrook Alkali-Silica Reaction Issue Technical Team Charter (July 9, 2012)	ML121250588
NRC046	NRC Staff	Summary of August 24, 2017, Meeting with NextEra Energy Regarding license amendment request on alkali silica reaction (CAC No. MF8260; EPID I-2016-Ila-0007) (Oct. 13, 2017)	ML17278A748
NRC047	NRC Staff	Memorandum from James G. Danna, NRC, to Andrea D. Veil, NRC ACRS, "Seabrook Station, Unit No. 1 - Submission of Alkali-Silica Reaction License Amendment Request Draft Safety Evaluation to Support the Advisory Committee on Reactor Safeguards' Review of Seabrook License Renewal (CAC No. MF8260; EPID L-2016-LLA-0007)" (Sept. 28, 2018)	ML18226A205
NRC048	NRC Staff	Letter from Michael Corradini, Chairman, ACRS, to Kristine L. Svinicki, Chairman, NRC, "Seabrook Station Unit 1 License Renewal Application: Review of Licensee Program Addressing Alkali-Silica Reaction" (Dec. 14, 2018)	ML18348A951
NRC049 (copyright)	NRC Staff	American Concrete Institute (ACI) Standard 318-71, Building Code Requirements for Reinforced Concrete (1971)	

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NRC050 (copyright)	NRC Staff	Section III, Division 2, of the 1975 Edition of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code) for containment	
NRC051 (copyright)	NRC Staff	Report of ACI-ASCE (American Society of Civil Engineers) Committee 326, "Shear and Diagonal Tension" (1962)	
NRC052 (copyright)	NRC Staff	ACI 408R-03, "Bond and Development of Straight Reinforcing Bars in Tension" (effective Sept. 24, 2003) (reapproved 2012)	
NRC053	NRC Staff	Letter from Public Service Company of New Hampshire to NRC Region I, Office of Inspection and Enforcement re: Response to NRC IE Bulletin 79-02, "Pipe Support Base Plate Designs Using Concrete Expansion Anchor Bolts," Revision 2, November 8, 1979 (Jan 3. 1980)	
NRC054	NRC Staff	NUREG/CR-5563, "A Technical Basis for Revision to Anchorage Criteria," March 1999	ML032740128
NRC055 (copyright)	NRC Staff	ACI 349-13, "Code Requirements for Nuclear Safety-Related Concrete Structures and Commentary" 2013	

[Party] Exh. No.	Witness/ Panel	Exhibit Title/Description	ADAMS Accession No.
NRC056 (copyright)	NRC Staff	Madhu M. Karthik, et. al., “Experimental Behavior of Large Reinforced Concrete Specimen with Heavy ASR and DEF [delayed ettringite formation] Deterioration,” J. Struct. Eng. (2018) (published online May 31, 2018)	
NRC057 (copyright)	NRC Staff	M. Kathleen Eck Olave, et. al., “Performance of RC Columns Affected by ASR. II: Experiments and Assessment,” Vol. 20. ASCE J. of Bridge Eng’g (March 2015) (published online June 12, 2014)	
NRC058 (copyright)	NRC Staff	F. Habibi, et. al., “Alkali Aggregate Reaction in Nuclear Concrete Structures: Part 3: Structural Shear Wall Elements,” Transactions, 23rd Conference on Structural Mechanics in Reactor Technology (SMiRT-23), Manchester, UK, August 10-14, 2015, Division I, Paper ID 044.	
NRC059 (copyright)	NRC Staff	ACI 349.3R, “Evaluation of Existing Nuclear Safety-Related Concrete Structures” (2002) (Reapproved 2010)	
NRC060	NRC Staff	NRC Information Notice 2011-20: Concrete Degradation by Alkali-Silica Reaction (Nov. 18, 2011)	ML112241029

[Party] Exh. No.	Witness/ Panel	Exhibit Title/Description	ADAMS Accession No.
NRC061	NRC Staff	Standard Review Plan for Review of Subsequent License Renewal Applications for Nuclear Power Plants” (Final Report), NUREG-2192 (July 2017)	ML17188A158
NRC062	NRC Staff	Interagency Agreement between NRC and NIST (Mar. 31, 2014)	ML14147A221
NRC063	NRC Staff	Grant and Cooperative Agreement between NRC and Northwestern University (Sept. 30, 2014)	ML14275A015
NRC064	NRC Staff	Sherry Berhoft, EPRI Senior Program Manager, NRC Commissioner Briefing on the Status of Subsequent License Renewal Preparations, “EPRI Long Term Operations: Research & Development for Aging Management” (Apr. 26, 2017)	
NRC065 (copyright)	NRC Staff	Emma L. Wong & Sherry Bernhoft, “Overview of the Electric Power Research Institute’s Research for Long Term Operations,” 117 Transactions of the Am. Nuclear Soc’y, 648, 648 (Oct. 29–Nov. 2, 2017)	
NRC066	NRC Staff	U.S. Department of Energy, “Light Water Reactor Sustainability Program — A Summary of Collaborative Research and Development Activities,” INL/EXT-19-52416, Rev. 0 (Jan. 2019)	

[Party] Exh. No.	Witness/ Panel	Exhibit Title/Description	ADAMS Accession No.
NRC067	NRC Staff	Organisation for Economic Co-operation and Development, Nuclear Energy Agency, "Final Report on the Phase 1 of the Assessment of Structures Subjected to Concrete Pathologies" NEA/CSNI/R(2016)13 (July 2017)	
NRC068	NRC Staff	Organisation for Economic Co-operation and Development, Nuclear Energy Agency, "Phase II of the Assessment of Structures Subjected to Concrete Pathologies (ASCET): Final Report" NEA/CSNI/R(2018)4 (Jan. 21, 2019)	
NRC069	NRC Staff	IRSN, ODOBA Research programs, (last update Aug. 2018), https://www.irsn.fr/EN/Research/Research-organisation/Research-programmes/Odoba-project/Pages/ODOBA.aspx	
NRC070	NRC Staff	"Research Activities FY 2018-2020," NUREG-1925, Rev. 4 (Mar. 2018)	ML18071A139
NRC071	NRC Staff	NUREG/CR-7153, "Expanded Materials Degradation Assessment (EMDA), Volume 4: Aging of Concrete and Civil Structures" (Oct. 2014)	ML14279A430
NRC072-R (copyright)	NRC Staff	R. Park and T. Paulay, "Reinforced Concrete Structures" (John Wiley & Sons, Inc. 1975).	

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NRC073 (copyright)	NRC Staff	David Darwin, Charles W. Dolan, and Arthur H. Nilson, "Design of Concrete Structures" (McGraw Hill, Inc., 15th Ed. 2016).	
NRC074 (copyright)	NRC Staff	Stéphane Multon, et. al., "Flexural Strength of Beams Affected by ASR," 12th International Conference on Alkali-Aggregate Reaction, Beijing, China (2004)	
NRC075	NRC Staff	Dean J., Deschenes, et. al., "ASR/DEF-Damaged Bent Caps: Shear Tests and Field Implications," Technical Report No. 12-8XXIA006 summarizing work conducted for the Texas Department of Transportation at Ferguson Structural Engineering Laboratory, The University of Texas at Austin (August 2009)	
NRC076 (copyright)	NRC Staff	Canadian Standards Association (CSA) A864-00, "Guide to the Evaluation and Management of Concrete Structures Affected by Alkali-Aggregate Reaction" (Feb. 2000) (Reaffirmed 2005)	
NRC077 (copyright)	NRC Staff	Geoffrey E. Blight and Mark G. Alexander, "Alkali-Aggregate Reaction and Structural Damage to Concrete - Engineering Assessment, Repair and Management," (CRC Press Taylor & Francis Group, 2011)	

[Party] Exh. No.	Witness/ Panel	Exhibit Title/Description	ADAMS Accession No.
NRC078	NRC Staff	Letter from Paul O. Freeman, NextEra, to NRC, "Seabrook Station Response to Confirmatory Action Letter" (May 24, 2012)	ML12151A396
NRC079	NRC Staff	Enclosure 2 to SBK-L-12106, "The Evaluation, Impact of ASR on Concrete Structures and Attachments," (May 2012) (Interim Structural Assessment)	ML12151A397
NRC080	NRC Staff	Memorandum from John G. Lamb, NRC, to Meena Khanna, NRC, Forthcoming April 23, 2012 Meeting with NextEra Energy Seabrook, LLC (NextEra) Regarding Seabrook Station Concrete Degradation (Mar. 23, 2012)	ML121070659
NRC081	NRC Staff	Letter from Paul O. Freeman, NextEra, to NRC, "Seabrook Station Actions for Resolution of Alkali Silica Reaction (ASR) Issues" (May 3, 2012)	ML12125A022
NRC082	NRC Staff	Letter from Paul O. Freeman, NextEra, to NRC, "Seabrook Station Supplement to Actions for Resolution of Alkali Silica Reaction (ASR) Issues" (May 10, 2012)	ML12131A479
NRC083	NRC Staff	Memorandum from William M. Dean, NRC, to R.W. Borchardt, NRC, Request for Deviation from the Reactor Oversight Process Action Matrix to Provide Increased Oversight of the Alkali-Silica Reaction Issue at Seabrook" (Sept. 5, 2012)	ML12242A370

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NRC084	NRC Staff	Letter from Darrell J. Roberts, NRC, to Kevin Walsh, NextEra, "Deviation from the Reactor Oversight Process Action Matrix for Seabrook Station, Unit No. 1" (Sept. 12, 2012)	ML12258A042
NRC085	NRC Staff	Letter from William M. Dean, NRC, Kevin Walsh, NextEra, "Closure of Confirmatory Action Letter 1-12-002, Seabrook Station, Unit 1" (Oct. 9, 2013)	ML13274A670
NRC086	NRC Staff	Letter from Darrell J. Roberts, NRC, to Kevin Walsh, NextEra, "Mid-cycle Performance Review and Inspection Plan – Seabrook Station, Unit No. 1 (Report 05000443/2013006)," (Sept. 3, 2013)	ML13246A107
NRC087	NRC Staff	Email from Justin Poole, NRC, to Kenneth Browne, NextEra, "Audit Plan Regarding Seabrook ASR License Amendment Review," (Jan. 13, 2017)	ML17017A162
NRC088	NRC Staff	Regulatory Guide (RG) 1.29, Seismic Design Classification for Nuclear Power Plants (July 2016)	ML16118A148
NRC089¹ (Proprietary)	NRC Staff	Enclosure 1 to Original LAR, NextEra Energy Seabrook's Evaluation of the Proposed Change Including Attachment 1 Markup of UFSAR Pages	ML16216A244

¹ The Staff is filing this exhibit because Exhibit INT011 includes highlighting that is not a part of the original document.

[Party] Exh. No.	Witness/ Panel	Exhibit Title/Description	ADAMS Accession No.
NRC090	NRC Staff	Staff Testimony in Response to Exhibit INT030	