UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Ronald M. Spritzer, Chairman
Nicholas G. Trikouros
Dr. Sekazi K. Mtingwa

In the Matter of	Docket No. 50-443-LA-2
NEXTERA ENERGY SEABROOK, LLC	ASLBP No. 17-953-02-LA-BD01
(Seabrook Station, Unit 1)	October 29, 2019

ORDER
(Adopting Transcript Corrections, Transcript Redactions, and Final Exhibit List)

An evidentiary hearing was held in this proceeding on September 24–27, 2019 in Newburyport, Massachusetts. At the close of the hearing, in consultation with the parties, the Board adopted a post-hearing schedule for party review of the hearing transcript to generate proposed transcript corrections[1] and proposed transcript redactions. On October 18, 2019, the NRC Staff, NextEra Energy Seabrook, LLC (NextEra), and C-10 Research and Education Foundation (C-10) timely filed proposed transcript corrections.[2]

[1] Transcript corrections are primarily to correct typographical, spelling, or mis-transcription issues. Proposed corrections should reflect the actual testimony that was spoken at the hearing; it is not an opportunity to rehabilitate or change the spoken testimony.

[2] Joint Motion to Correct the Transcript for the Evidentiary Hearing Held September 24–27, 2019 (Oct. 18, 2019).

The Board has reviewed the transcript and the parties' proposal and adopts the corrections set forth in Appendix A of this order.[3] The September 24–27, 2019 hearing transcript,[4] the official record of the evidentiary hearing, is revised to reflect the corrections listed in Appendix A.

The Board has also reviewed and accepts the proposed transcript redactions filed by NextEra on October 18, 2019. The Board will circulate to the parties for review a version of the transcript that incorporates NextEra's redactions by blackening out the proprietary information. Each party will have five days to review the proposed redactions for accuracy. Once that is complete, the Board will provide the redacted transcript to the Office of the Secretary (SECY) for placement into the public docket.

Finally, the Board adopts the final exhibit list attached hereto as Appendix B, which reflects all the exhibits admitted at the evidentiary hearing. However, C-10's Motion to Compel Production of Mineralogy Data and Request for the Opportunity to Submit Supplemental Written Testimony Regarding the Data remains pending before the Board.[5]

[3] The only change made by the Board to the proposed corrections was to change the spelling of "constitutive." Tr. at 856, Line 1.

[4] Tr. at 214–1203.

[5] C-10 Research and Education Foundation's Motion to Compel Production of Mineralogy Data and Request for Opportunity to Submit Supplemental Written Testimony Regarding the Data (Sept. 29, 2019).

In addition, on October 28 C-10 filed another motion seeking to add additional exhibits to the evidentiary record.[6] The Board will close the evidentiary record once those motions have been resolved.

IT IS SO ORDERED.

FOR THE ATOMIC SAFETY
AND LICENSING BOARD

/RA/

Ronald M. Spritzer, Chairman
ADMINISTRATIVE JUDGE

Rockville, Maryland
October 29, 2019

[6] C-10 Research and Education Foundation's Response to ASLB Memorandum and Motion to Submit Additional Exhibits Regarding Petrographic Observations and Analyses of ASR at Seabrook (Oct. 28, 2019).

APPENDIX A: CORRECTIONS TO THE TRANSCRIPT OF THE EVIDENTIARY HEARING HELD ON SEPTEMBER 24–27, 2019 (DOCKET NO. 50-443-LA-2)

Page	Line	Now Reads	Change	Speaker
217	19	docketed as, by	docketed by	Judge
218	4	would to thank	would like to thank	Judge
220	15	Information	Education	Curran
220	24	Byrce	Bryce	Wachutka
220	25	Phillip	Philip	Wachutka
229	3	ERA-005-R3	NER-005-R3	Lighty
232	8	Glen	Glenn	Bessette
236	20	notes, The	notes, the	Curran
240	2	control	controlled	Lighty
241	1	is complete	is a complete	Lighty
242	16	relative	relevant	Lighty
243	12	engineers, the	engineers, and the	Lighty
243	23	meeting	meetings	Lighty
246	2	power	reactor	Lighty
247	25	two-scale	to-scale	Lighty
252	20	specimens	program	Wachutka
255	16	a license amendment	the license amendment	Wachutka
256	10	along,	alone,	Wachutka
262	17	in country	in this country	Judge
263	7	research on	research projects on	Saouma
264	8	help them through	help them solve	Saouma
264	11	So I have	I have	Saouma
264	18	not a PE and	not a PE, but	Saouma
264	18	student to pass	students to pass	Saouma
266	3	It's expertise	I don't claim expertise	Saouma
267	17	to what extent to they have	to what extent do they have	Judge Mtingwa
268	13	MS. BUFORD:	JUDGE MTINGWA:	
268	17	structural integrity associates	Structural Integrity Associates	Simons
276	8	wouldn't call it	wouldn't call	Saouma
276	14	ensure a	ensure	Saouma
276	15	characteristic	characteristics	Saouma
276	17	query	quarry	Saouma
276	21	that, when you	that, you	Saouma
276	22	represent	represent:	Saouma
276	25	So this axial	This axial	Saouma
277	3	concern	concerns	Saouma
279	4	observed with informs but concrete	observed which informs what concrete	Bayrak
280	18	no true	no through-	Bayrak
281	11	ACI 318-7	ACI 318-71	Bayrak

Page	Line	Now Reads	Change	Speaker
283	6	not only conservative side	not only on the conservative side	Bayrak
283	15	There is	There are	Saouma
283	22	shear crack	shear cracks	Saouma
284	3	crack.	cracks.	Saouma
284	10	the so-called	a so-called	Saouma
284	15	almost every	almost everything	Judge
286	8	comes as a clause	comes as cause	Saouma
286	9	T-bar	rebar	Saouma
286	12	AAR	ASR	Saouma
286	15	is a lot	are a lot	Saouma
286	15	of members	members	Saouma
286	16	with enforced	with reinforced	Saouma
286	17	adequate reasonable	adequate or reasonable	Saouma
286	17	good adequate	good, adequate	Saouma
287	13	aggregate of	aggregate or	Saouma
287	16	of course, also	of course,	Saouma
287	22	chemical.	chemicals.	Saouma
290	16	in the core solution	in the pore solution	Bayrak
292	2	identified along	identified in	Saouma
292	4	However, a nuclear	However, in a nuclear	Saouma
292	20	strengths.	strength.	Saouma
293	1	analysis, and a	analysis, in a	Saouma
293	1	used as	used in	Saouma
293	10	type	types	Saouma
293	10	type of concrete	types of concrete	Saouma
294	3	pretension concrete	pretensioned concrete	Bayrak
294	6	pretension concrete	pretensioned concrete	Bayrak
294	9	pretension concrete	pretensioned concrete	Bayrak
294	19	NextEra	NextEra's	Bayrak
294	20	colleagues	and colleagues	Bayrak
294	23	there is	there are	Saouma
294	23	unintentioned	unintended	Saouma
295	4	two	through	Bayrak
296	16	REI	RAI	Carley
297	4	0.00207	0.207	Bayrak
300	25	get	gets	Saouma
301	10	from beginning	from the beginning	Saouma
302	1	temperature	temperature and	Saouma
302	7	is true factor	is a true factor	Saouma
303	5	A	The	Bell
304	6	the code's	(delete these words)	Bell
306	16	ACI code.	the ACI code.	Saouma
306	17	ACI 1971 code -- 40 years ago	the ACI 1971 code -- 40 years old	Saouma
307	11	still model	still models	Saouma
307	12	all direction,	all directions,	Saouma

Page	Line	Now Reads	Change	Speaker
308	22	MR. BOLOURCHI	DR. BOLOURCHI	
310	8	MR. BOLOURCHI	DR. BOLOURCHI	
310	10	Yeah.	Yes.	Saouma
310	12	Design code	Design codes	Saouma
310	13	Design code,	Design codes,	Saouma
310	15	design code,	design codes,	Saouma
310	19	there are	hired	Saouma
310	25	solution	solutions	Saouma
311	15	hand of	hands of	Saouma
312	4	in	is	Bayrak
313	15	matters	metrics	Saouma
313	18	analogies	analysis	Saouma
313	19	ASR then	ASR, then	Saouma
314	9	parentheses	parenthesis	Saouma
314	13	assumption	assumptions	Saouma
314	17	conducted that	conducted – that	Saouma
314	20	quantify insecure in	quantify and secure	Saouma
315	2	property	properties	Saouma
315	8	Lego	Legos	Saouma
315	11	with a so-called	with so-called	Saouma
315	12	property	properties	Saouma
315	15	strengths	strength	Saouma
315	16	increasing evidence	increasing the evidence	Saouma
315	17	so compressive	that compressive	Saouma
315	18	strengths	strength	Saouma
315	19	perform	perform an	Saouma
316	4	MR. BOLOURCHI	DR. BOLOURCHI	
316	13	hey , try	they tried	Bolourchi
317	16	perform	performed	Saouma
317	18	So and I	So I	Saouma
318	20	were	are	Carley
319	24	guides	guidelines	Simons
320	11	primarily	primary	Simons
320	13	due to or compared	due to ASR for comparison	Simons
321	25	MPR 40-153	MPR 4153	Judge
323	20	NPR	MPR	Bayrak
324	18	ISC	ISE	Bayrak
325	3	We are to	We have to	Saouma
325	6	structure.	structures.	Saouma
325	9	structure.	structures.	Saouma
325	22	We are to	We have to	Saouma
326	16	are not quotes at all	are not codes at all	Bayrak
326	24	ISC	ISE	Bayrak
328	18	ones	once	Saouma
328	22	sabbatic	sabbatical	Saouma
329	4	reaches of concern.	reaches concern.	Saouma
329	5	Empa	EMPA	Saouma

Page	Line	Now Reads	Change	Speaker
329	15	MS. SHERMAN:	MR. SHERMAN:	
329	19	materials'	materials	Sherman
329	24	documents	document	Sherman
330	21	Everything from	For example	Sherman
332	18	MS. SHERMAN:	MR. SHERMAN:	
332	22	sensing	sensitive	Sherman
333	4	one	on	Sherman
335	3	and details	and details an	Saouma
336	15	justification that that could continue to be used.	justification that it could continue to be used.	Thomas
337	2	So, the next step licensing	So, the next step licensee	Thomas
337	4	it could continue to be developed.	it could continue to be enveloped.	Thomas
337	21	It is. These are applicable.	It is not. These are not applicable.	Saouma
337	25	Applicable	Not applicable	Saouma
338	24	lenient	linear	Saouma
339	4	there was this	There was	Saouma
340	6	fractural	fracture	Saouma
340	10	sheer	shear	Saouma
340	12	MSE	NRC	Saouma
343	10	remember his	remember her	Saouma
343	20	the shear strengths and its impact	shear strengths and their impact	Saouma
343	24	specimen.	specimens.	Saouma
344	2	strengths on	strengths in	Saouma
345	17	in closed	enclosed	Carley
346	12	MR. BOLOURCHI	DR. BOLOURCHI	
346	18	MR. BOLOURCHI	DR. BOLOURCHI	
346	21	MR. BOLOURCHI	DR. BOLOURCHI	
346	24	true thickness	through thickness	Bolourchi
346	25	enforcement	reinforcement	Bolourchi
347	10	true thickness	through thickness	Bolourchi
347	21	MR. BOLOURCHI	DR. BOLOURCHI	
347	24	three directions	the third direction	Bolourchi
348	24	MR. BOLOURCHI	DR. BOLOURCHI	
349	1	MR. BOLOURCHI	DR. BOLOURCHI	
349	12	MR. BOLOURCHI	DR. BOLOURCHI	
349	20	MR. BOLOURCHI	DR. BOLOURCHI	
349	23	MR. BOLOURCHI	DR. BOLOURCHI	
349	25	MR. BOLOURCHI	DR. BOLOURCHI	
350	2	MR. BOLOURCHI	DR. BOLOURCHI	
351	1	affects the critical in the direction where there’s	effect is critical in the direction where there’s	Thomas
351	2	the strength to expansion.	the restraint to expansion.	Thomas
351	3	what kind of a strength exists in this structure.	what kind of a restraint exists in this structure.	Thomas

Page	Line	Now Reads	Change	Speaker
351	8	unisotropic	anisotropic	Saouma
351	19	MR. BOLOURCHI	DR. BOLOURCHI	
351	21	biometrical	parametrical	Bolourchi
351	22	closure	enclosure	Bolourchi
351	22	under the	other	Bolourchi
351	23	wall	walls	Bolourchi
353	9	true	through	Bolourchi
354	2	we do some make	we do make some	Saouma
354	20	MR. BOLOURCHI	DR. BOLOURCHI	
354	23	MR. BOLOURCHI	DR. BOLOURCHI	
355	1	MR. BOLOURCHI	DR. BOLOURCHI	
355	5	MR. BOLOURCHI	DR. BOLOURCHI	
355	9	a,	(delete these words)	Bolourchi
355	9	MR. BOLOURCHI	DR. BOLOURCHI	
355	10	it's talking	(delete these words)	Bolourchi
356	1	code	quotes	Bolourchi
356	7	formation	deformation	Bolourchi
356	12	using	is using	Bolourchi
357	3	formation	deformation	Saouma
357	16	pictures of	pictures of a	Saouma
357	17	retaining the wall	retaining wall	Saouma
357	20	was very	was a very	Saouma
357	25	part	impact	Saouma
358	1	I’ve	I	Saouma
358	5	whether internal	whether an internal	Saouma
358	14	before testing,	before testing	Saouma
358	16	expansion was	expansion – was	Saouma
359	12	off	of	Bayrak
361	5	really major	really a major	Saouma
361	11	strengths	strength	Saouma
361	22	too	to	Saouma
362	5	MR. BOLOURCHI	DR. BOLOURCHI	
362	8	shearest stiffness	shear stiffness	Bolourchi
362	13	shearest stiffness	shear stiffness	Bolourchi
362	19	whole, it	total change	Bolourchi
363	11	MR. BOLOURCHI	DR. BOLOURCHI	
363	13	MR. BOLOURCHI	DR. BOLOURCHI	
363	16	MR. BOLOURCHI	DR. BOLOURCHI	
363	24	that that	that	Bolourchi
365	14	admitted	method	Saouma
365	20	which existing ASR.	with existing ASR,	Saouma
365	21	And you want	and you want	Saouma
369	4	MR. BAYRAK	DR. BAYRAK	
369	7	MR. BAYRAK	DR. BAYRAK	
370	2	Popovic	Orbovic	Saouma
370	10	because of nonlinear	due to the nonlinear	Saouma
370	11	that	than	Saouma

Page	Line	Now Reads	Change	Speaker
373	13	universally	universally,	Saouma
373	15	as the kinetics	at the kinetics	Saouma
375	8	out of door	outdoors	Saouma
375	22	expansion because	expansion (because	Sherman
375	23	its idea is you	the idea if you	Sherman
375	24	look at see	look and see	Sherman
375	25	future. We	future), we	Sherman
376	1	had	add	Sherman
376	3	times, not	times not,	Sherman
376	4 & 5	Baruba (phonetic).	Berube.	Sherman
377	25	provided to it?	provided to it.	Sherman
381	9	all	wall	Carley
383	17	that was	that it was	Simons
385	5	cross-aggregate	crush coarse aggregates	Saouma
385	5	multiple tests	for tests	Saouma
386	1	applicable	application	Saouma
386	2	values test	various tests	Saouma
386	4	over time	over the time	Saouma
386	13	all the way	all the way to	Saouma
388	9	ISC	ISE	Sherman
389	3	of agree	of us agree	Sherman
389	13	ISC	ISE	Sherman
390	22	curve?	curve.	Sherman
391	21	through-all	through-wall	Collins
392	17	So method	The method	Saouma
392	19	relate – so	relate the	Saouma
392	20	that is degradation of elastic models	that is, degradation of elastic modulus,	Saouma
393	2	implemented	discussed	Saouma
393	3	resection	introduction	Saouma
393	10	perform.	perform it.	Saouma
394	2	nearly, not all	nearly if not	Saouma
394	13	two reactants. One	two reactants, one	Saouma
394	15	build, then it build,	build. Then it builds,	Saouma
394	19	by quote.	by all.	Saouma
396	20	3493R	in ACI 349.3R	Carley
397	1	three-wall	through-wall	Carley
400	11	today ASR.	today's standards.	Saouma
400	13	qualifier	quantification	Saouma
400	17	So slow	Slow	Saouma
404	4	concrete when	concrete	Saouma
404	6	come.	were mixed.	Saouma
404	11	interesting one,	an interesting one,	Saouma
404	13	location, a certain location,	location here, a certain location there,	Saouma
404	14	a certain location,	how	Saouma
404	21	hid	had	Saouma

Page	Line	Now Reads	Change	Speaker
406	6	bar	box	Sherman
408	16	has qualitative	has a qualitative	Saouma
409	9	structure.	structures.	Saouma
410	2	cut specimen	cast a specimen	Saouma
410	3	was inhibit	was an inhibitor	Saouma
410	7	specimen,	specimens,	Saouma
410	9	0.5 percent special	0.5 percent	Saouma
415	20	two or three	Tier Three	Simons
418	22	There has	There have	Saouma
419	7	out of plane,	out-of-plane,	Saouma
419	23	out of plane	out-of-plane	Saouma
423	20	pour solution	pore solution	Bayrak
425	6	So cracking	So the cracking	Saouma
426	3	smaller crack.	smaller cracks.	Saouma
426	3	surface	appear	Saouma
426	4	It might	They might	Saouma
426	12	far as	far as to say	Saouma
427	14	probability	laboratory	Saouma
427	16	we had to	we have to	Saouma
428	18	quota	code	Bayrak
428	19	quota	code	Bayrak
431	9	directly to	directly related to	Saouma
434	11	AK11-EI (phonetic)	Equivalent "EI"	Bayrak
435	24	MR. BOLOURCHI	DR. BOLOURCHI	
436	4	make	need	Bolourchi
436	6	expressed	stress	Bolourchi
436	14	defined	refined	Bolourchi
436	19	full 99 analysis	full nonlinear analysis	Bolourchi
437	10	for the dam	dam	Saouma
437	17	1TE	Gentilly	Saouma
437	18	(phonetic)	[delete]	Saouma
437	19	, the F, the	Seminoe	Saouma
437	25	MR. BOLOURCHI	DR. BOLOURCHI	
437	12-13	Let’s not mention what the Bureau of Reclamation in terms of linear	Let’s mention that the Bureau of Reclamation did perform nonlinear analysis also for ASR	Saouma
438	2	MR. BOLOURCHI	DR. BOLOURCHI	
438	5	1TE (phonetic)	Gentilly	Saouma
438	15	lining	leaking	Bolourchi
439	9	MR. BOLOURCHI	DR. BOLOURCHI	
439	14	MR. BOLOURCHI	DR. BOLOURCHI	
439	18	MR. BOLOURCHI	DR. BOLOURCHI	
440	10	Is it due	It is due	Saouma
440	11	there’s degradation?	there is a degradation.	Saouma
440	25	everything flow	everything flows	Saouma
441	4	father of a lot of the	fathers of the LRFD	Saouma

Page	Line	Now Reads	Change	Speaker
442	7	alluded	alluded to	Saouma
442	17	SD&H	SG&H	Simons
443	23	a genesis	the genesis	Saouma
443	25	competing opinion,	competing opinions,	Saouma
443	25	There was	There were	Saouma
444	12	This is again, some general consideration.	These are again, some general considerations.	Saouma
447	14	implication.	implications.	Saouma
447	20-21	NRC's safety values.	NRC's safety evaluation values.	Thomas
448	7	So	The	Saouma
450	10	in certain	in a certain	Saouma
451	7	there is papers	there are papers	Saouma
453	14	referred to my	referred to his	Curran
454	18	Empa	EMPA	Saouma
457	16	ignoring	ignore	Saouma
460	24	on sides	inside	Saouma
467	4	CC	CI	Simons
468	12	53	5-3	Simons
468	18	imbedded	embedded	Simons
469	14	artificial	actual	Simons
473	20	loop	loupe	Bagley
475	22	- -	term	Saouma
475	23	to mention	previously mentioned	Saouma
476	5	on site	onsite --	Saouma
476	6	the data,	the data --	Saouma
476	18	but just	and	Saouma
476	20	likelihood; not stronger,	likelihood -- not stronger --	Saouma
476	25	MR. SIMON	MR. SIMONS	
478	10	MR. SIMON	MR. SIMONS	
478	16	MR. SIMON	MR. SIMONS	
478	25	MR. SIMON	MR. SIMONS	
479	13	MR. SIMON	MR. SIMONS	
481	3	which is	which shows the	Saouma
483	7	Institutional	Institution of	Bayrak
484	22	screen	strain	Bayrak
485	1	build	bill	Bayrak
489	1	time	times	Saouma
489	8	substantial	substantially	Saouma
489	10	cases where	cases where the	Saouma
489	12	By Stark classical paper where	In Stark's classical paper,	Saouma
490	1	paper Stark	paper, Stark	Saouma
490	3	observation in	observation for	Saouma
490	5	again result	again the result	Saouma
490	17	dried	drying	Saouma
490	21	engineer.	engineers.	Saouma

Page	Line	Now Reads	Change	Speaker
490	23	where	which are	Saouma
491	16	no conducive	not conducive	Saouma
491	21	So average	So the average	Saouma
491	23	in other word,	in other words,	Saouma
491	23	me	Seabrook,	Saouma
492	2	crack	cracks	Saouma
492	9	direction.	directions.	Saouma
492	11	show	showed	Saouma
492	17	ASR want to expand. ASR want to expand	ASR wants to expand ASR wants to expand	Saouma
492	18	humidity which	humidity – which	Saouma
493	1	crack	cracks	Saouma
493	2	crack, and	crack. And	Saouma
493	7	called fracture	called a fracture	Saouma
493	10	it plastic	it the plastic	Saouma
493	11	it fracture	it the fracture	Saouma
493	14	test.	tests.	Saouma
493	20	There is	There are	Saouma
493	21	of Hillerborg	by Hillerborg	Saouma
493	23	exhibit.	exhibits.	Saouma
493	25	There is	There are	Saouma
493	8-9	cementitious nature of the material for concrete	cementitious nature of the concrete	Saouma
494	1	ASR crack	ASR cracks	Saouma
494	4	Surface	The surface	Saouma
494	21	there is much	there is a much	Saouma
494	22	petrographic,	petrographic examination,	Saouma
494	25	pattern;	pattern --	Saouma
495	1	map cracking,	map cracking --	Saouma
495	2	reinforcement the crack aligns	reinforcement, the cracks align	Saouma
495	4	dispute; you	dispute; as you	Saouma
495	5	universally accepted	it is universally accepted	Saouma
495	7	coming next, under	comes next, and under	Saouma
495	12	written was	was written	Saouma
495	14	Swiss report	the Swiss report	Saouma
495	16	technician	technicians	Saouma
499	1	weren't	were	Sherman
501	13	managements,	measurements	Carley
502	23	shear strength, BWD	shear strength, (bw)(d)	Bayrak
504	2	is document describing	in the document describes an	Saouma
504	5	mentioned	mentioned:	Saouma
505	11	FHWA.	FHWA report.	Saouma
505	20	reach	reached	Saouma
505	21	expansion rate.	expansion.	Saouma
506	16	Through the wall,	Through-wall,	Saouma

Page	Line	Now Reads	Change	Speaker
506	18	through the wall	through-wall	Saouma
507	9	opinion accurately	opinion, “accurately”	Saouma
508	12	high-level crack on the surface	high-level crack that surfaced	Saouma
511	8	installed all	installed, all	Saouma
511	9	It doesn’t	It does	Saouma
511	12	putting an	putting in an	Saouma
511	13	as bad as	as bad as a	Saouma
512	3	advance	advances	Saouma
512	7	petrographer	petrographers	Saouma
512	10	shows	show	Saouma
512	12	make estimate	make an estimate	Saouma
512	15	track, so	cracks,	Saouma
512	20	petrographer	petrographers	Saouma
512	21	weight.	weights.	Saouma
513	13	install	installing	Saouma
514	10	called	called the	Saouma
514	12	have	has	Saouma
514	13	calibration	calibrations	Saouma
514	15	elastic modulus	the elastic modulus	Saouma
518	11	CCI and MCI.	CCI and CI.	Buford
521	1	need to	need the	Bagley
521	11	were miss	were to miss	Bagley
522	8	margin	margins	Saouma
522	8	needs	need	Saouma
522	10	normalize	normalized	Saouma
522	12	showing	using	Saouma
522	14	resulting	results	Saouma
522	15	and to	and -- to	Saouma
522	16	extent possible	extent possible --	Saouma
524	6	production	reduction	Bagley
525	5	the element	the finite element	Saouma
525	9	code	mode	Saouma
525	10	apply uniformly	apply it uniformly	Saouma
526	15	law	wall	Carley
526	21	final	finite	Saouma
526	22	analogies	analysis	Saouma
527	4	final	finite	Saouma
527	5	analogies	analysis	Saouma
527	14	understanding	understanding,	Saouma
527	18	readings they	readings do they	Saouma
527	19	water transition code.	transition zones.	Saouma
531	2	crackage	cracking	Saouma
531	7	is the	the	Saouma
531	9	provocation	propagation	Saouma
531	22	insulation	installation	Judge
532	6	––	midplane cracking	Carley

Page	Line	Now Reads	Change	Speaker
534	13	crack fold.	crack.	Saouma
534	2-3	flow rate distributor	through-wall distribution	Saouma
535	1	occurs so far because	occurs because	Saouma
535	9	and too	or two	Saouma
536	16	modules	modulus	Bagley
537	2	well it	well, it	Saouma
538	24	cycling,	cyclic	Saouma
539	7	F prime C	f prime C	Saouma
539	9	error bars	error bar	Saouma
539	11	competence	confidence	Saouma
539	18	is date which has	are data which have	Saouma
539	24	field	field,	Saouma
540	6	values, which	values which	Saouma
540	7	account,	account	Saouma
540	9	so model	no model	Saouma
540	13	without error	without an error	Saouma
550	23	query.	quarry.	Saouma
550	25	query. And	quarry. And the	Saouma
551	1	--	quarry --	Saouma
551	7	container	containment	Carley
551	8	containment.	and containment.	Carley
554	4	arranged on	the range of	Saouma
556	16	demic (phonetic)	DEMEC	Saouma
556	17	direct.	direct measurement.	Saouma
556	19	on the – models	of the modulus	Saouma
557	13	explain	explains	Saouma
557	14	German side	German,	Saouma
558	17	MR. BOLOURCHI	MR. BAGLEY	
559	16	at specific	at the specific	Saouma
559	20	much as the location as are indicated	much of the location as indicated	Saouma
561	14	direction that is	directions, that is the	Saouma
561	15	direction.	directions.	Saouma
561	19	into	in	Saouma
562	1	And has	And it has	Saouma
562	9	as saying	by saying	Saouma
562	11	depths.	depth.	Saouma
562	7-8	Walt (phonetic)	Wald	Saouma
563	4	and how	and in how	Saouma
563	9	irrespective, and at	irrespective of	Saouma
563	15	form shape	deformed shape	Saouma
566	3	alkali-reaching	alkali leaching	Bayrak
567	16	extending to.	extending to the surface.	Bayrak
569	16	analogies, we use highly deformed shape.	analysis, we use highly deformed shapes	Saouma
569	19	measurement	measurements	Saouma
570	25	fractured energy	fracture energy	Saouma

Page	Line	Now Reads	Change	Speaker
571	8	on the naked	with the naked	Saouma
571	11	There is a	There are a	Saouma
571	13	well	well,	Saouma
571	16	crack because a crack -- is	crack, because a crack is	Saouma
571	19	not --	not	Saouma
572	21	perditious	pernicious	Saouma
573	3	indication because	indication – because	Saouma
573	15	3493R.	349.3R.	Carley
574	3	requires to	requires us to	Saouma
574	7	mind	minds	Saouma
574	8	program	problem	Saouma
574	9	and doing best	doing our best	Saouma
574	2-3	extra identity	extraordinarily complex	Saouma
575	4	judgement	judgment	Judge
575	15	ASI	ACI	Buford
577	18	or not all the codes	and other codes do not	Bell
578	15	0.75, 1.4D.L.	0.75(1.4D+1.7L)	Bell
578	18	to	like	Bell
579	24	adjust material	adjust the material	Saouma
580	2	not all,	not all --	Saouma
580	3	but many	but many --	Saouma
580	4	318.71 were written	318.71 Code was written	Saouma
580	5	element were in its	element analysis were in their	Saouma
580	7	later version	a later version	Saouma
580	21	approximate equation	or the approximate equation	Saouma
580	22	code is	code – is	Saouma
580	23	1.9 or 2.0 equation, we give as the shear	the 1.9 or 2.0 terms in the equation that gives the shear	Saouma
583	25	properly	properly,	Saouma
584	1	discussed it	discussed	Saouma
584	7	structures, which	structures which	Saouma
584	16	there have	there has	Saouma
584	19	stress	stresses	Saouma
586	15	have linear	have a linear	Saouma
586	16	linear,	linear response,	Saouma
586	17	displacement.	displacements.	Saouma
586	18	displacement plays	displacements play	Saouma
588	6	strengths.	strength.	Saouma
588	6	surface ability	serviceability	Saouma
588	11	exceed demand	exceeds demand	Saouma
589	23	next or	NextEra	Judge
592	15	staff at	Staff and	Judge
594	21	complete	concrete	Saouma

Page	Line	Now Reads	Change	Speaker
595	1	on this angle	through this angle	Saouma
595	20	that the lack of	of the lack of	Saouma
595	23	match,	matches,	Saouma
595	24	which is in	in	Saouma
596	4	reflection	rejection	Saouma
596	10	F prime C	f prime C	Saouma
597	9	MR. BAYRAK:	DR. BAYRAK:	
597	17	pace	paste	Bayrak
598	17	by standard 40	by the standards of	Saouma
598	17	higher that	higher than	Saouma
599	16	ACI318, 71	ACI 318-71	Bayrak
599	23	RIs	our eyes	Bayrak
600	10	the tests are	the tests have	Saouma
600	11	F primes of C	f primes of C	Saouma
600	18	because the lack of accounting	because of the lack of accounting,	Saouma
601	6	me	man	Bayrak
601	15	hydroxide has on	hydroxide on	Saouma
601	15	which extent the	the extent of	Saouma
601	17	It's accelerated	It's an accelerated	Saouma
601	19	Whether there has	Whether there have	Saouma
603	21	Yes, cracking	Yes, the cracking	Saouma
604	5	cracking is at	cracking are at	Saouma
604	6	route	root	Saouma
604	20	there is	there is a	Saouma
605	7	accelerated tests.	accelerated the tests.	Saouma
605	9	the same come	the same came	Saouma
605	10	the source as aggregate	the same source as the aggregate	Saouma
605	16	sand – or by the prime aggregate.	sand.	Saouma
606	17	damaging	casting	Saouma
606	22	entire being	entire building	Saouma
606	25	Salt River	Crystal River	Saouma
607	2	goes in delamination	caused delamination	Saouma
607	12	analysis were	analysis where	Saouma
607	14	That's dangerous	It's dangerous	Saouma
607	17	there is	there is a	Saouma
607	18	That's a call for	That causes a	Saouma
608	23	not referring the	not referring to the	Saouma
610	8	posted	posited	Bayrak
610	12	palier	failure	Bayrak
612	23	happened	happens	Saouma
613	11	It is a shear	It is the shear	Saouma
613	10-11	to allow the	to some	Saouma
618	13	through T&D	throughout	Saouma
618	21	statement which was	statements which were	Saouma

Page	Line	Now Reads	Change	Speaker
618	2-3	this it is safe	if it is safe	Saouma
619	9	a couple of times and so that if humidity	a couple of dams and all of them showed that humidity	Saouma
620	18	still	not	Saouma
620	21	some issues are	one issue not	Saouma
620	23	up to the right	the right size	Saouma
620	24	wall have different	wall has a different	Saouma
621	3	consider sufficient	consider	Saouma
621	5	4,800	4,800 psi	Saouma
621	6	6,000	6,000 psi	Saouma
621	7	low displacement curve which is	load displacement curve which are	Saouma
621	8	occur.	occurs.	Saouma
622	2	something wrong	that something is wrong	Saouma
622	13	account	accounts	Saouma
622	24	were 36-inch.	were on 36-inch specimens.	Saouma
622	35	specimen.	specimens.	Saouma
623	3	36-inch	36 inches	Saouma
623	1-2	24-inch	24 inches	Saouma
624	7-8	apparent element and damages	finite element analysis	Saouma
625	3	In 1971, version	In the 1971 version	Bayrak
627	16	years, When	years, assumed that when	Saouma
627	20	CEB outside for the	CEB for the	Saouma
627	23	again, is a panacea and absolve	again, it is a panacea and absolves	Saouma
629	4	sometime	sometimes	Saouma
629	5	for additional	of additional	Saouma
629	13	That's why in	That's why	Saouma
629	14	is that the	is the	Saouma
629	15	condition	condition:	Saouma
630	9	number	member	Bayrak
634	5	behavior. So we	behavior so we	Simons
634	7	model, we were	model. We were	Simons
636	18	produce	produces	Saouma
636	22	is alkaline	is the alkaline	Saouma
636	30	specifications and	specifications. And	Saouma
637	4	importantly	important	Saouma
637	7	curve	curves	Saouma
637	23	controlled	control	Bayrak
638	14	agg mixtures	admixtures	Simons
639	22	conclusion	conclusions	Saouma
640	2	what is	what is the	Saouma
640	14	continuously	a continuously	Saouma
640	18	there was not	there were not	Saouma

Page	Line	Now Reads	Change	Speaker
640	19	ingredient	ingredients	Saouma
640	21	number	numbers	Saouma
640	24	consistently a high temperature	a consistently high temperature.	Saouma
644	10	Just clarification	Just a clarification	Saouma
644	14	fine,	fine sand,	Saouma
645	18	kinetic	kinetics	Saouma
645	19	which is	which are	Saouma
645	21	kinetic	kinetics	Saouma
645	23	temperature.	temperatures.	Saouma
646	5	humidity or not.	humidity.	Saouma
646	15	all what it is.	all it is.	Saouma
646	17	model of Larive	model – of Larive	Saouma
648	22	extractions are	extractions that are	Saouma
648	22	it's very	it's the very	Saouma
648	23	elastic models	elastic modulus	Saouma
648	25	other context?	the other context?	Saouma
649	1	core	cores	Saouma
649	2	well established	well-established	Saouma
649	5	extracted and	extracted. And	Saouma
649	8	with different	with a different	Saouma
649	10	with aggregate	with an aggregate	Saouma
649	14	modules	modulus	Bagley
650	24	property	properties	Saouma
651	3	surrounding	surroundings	Saouma
651	7	Jacob Philips	Jacob Philip	Saouma
651	8	prediction	predictions	Saouma
651	18	linear	non-linear	Saouma
651	25	into	in	Saouma
652	1	any,	any code,	Saouma
652	4	from different	from a different	Saouma
652	5	property	properties	Saouma
652	16	MR. BOLOURCHI	DR. BOLOURCHI	
653	13	MR. BOLOURCHI	DR. BOLOURCHI	
653	22	there is	there are	Saouma
653	24	very simplified	a very simplified	Saouma
654	1	to more	to a more	Saouma
654	4	Even simple	Even a simple	Saouma
654	7	prediction.	predictions.	Saouma
654	10	has	has a	Saouma
654	18	have very	have a very	Saouma
654	23	do your	use their	Saouma
655	4	Moniere (phonetic)	McGill	Saouma
655	9	posts	pores	Saouma
655	12	force	or forcing NextEra	Saouma
655	15	colleague and friend	colleagues and friends	Saouma
658	19	program	program,	Saouma

Page	Line	Now Reads	Change	Speaker
658	21	where there was a result	with the results of	Saouma
658	23	is analysis	if the analysis	Saouma
658	25	in your benchmark study.	in our benchmark study,	Saouma
658	25	So stiffening effect is due	the stiffening effect due	Saouma
659	1	to SR	to ASR	Saouma
659	2	that predicted	they predicted	Saouma
660	1	lines goes	lines. It goes	Saouma
660	7	degradation	gradation	Saouma
660	8	design to	design – to	Saouma
660	9	degradation	gradation	Saouma
660	11	what the degradation	what gradation was	Saouma
660	16	study what	study. What	Saouma
660	17	comparing to	comparing it to	Saouma
660	20	that standard.	that is standard.	Saouma
672	20	whole	hole	Simons
675	3	But I	I	Saouma
675	6	current project,	current project, that	Saouma
675	6	of DOT mixed	of the DOT mix	Saouma
675	8	the reasons, have the reason.	have their reasons, they have their reasons.	Saouma
675	19	Oguz	Ozzie	Simons
681	8	on that my attention	my attention on that	Saouma
682	3	within	within the	Saouma
685	22	used	use	Simons
687	15	at high	at a high	Saouma
687	20	books on	books I am	Saouma
688	19	conditions,	conditions vary,	Bayrak
691	3	at exact	at the exact	Saouma
691	4	location based	location, based	Saouma
692	10	frequencies we'll	frequencies will	Buford
693	1	and CTI,	and CCI,	Buford
694	5	volumetric accepted limits,	volumetric acceptance limits,	Buford
694	17	jump into,	jump in too,	Buford
694	20	widely understand.	widely understood.	Buford
696	17	crack which have not manifested themselves	cracks which have not manifested themselves	Saouma
696	20	2018	2018 RIC	Saouma
697	6	MR. PHILLIP:	MR. PHILIP:	
698	2	being progressed	being processed	Philip
698	6	And NCR staff	And NRC staff	Philip
698	16	MR. PHILLIP:	MR. PHILIP:	
698	19	MR. PHILLIP:	MR. PHILIP:	
698	24-25	in the professionalized sort of analysis	profession now, nor in the analysis	Philip
699	16	and people can come out to it.	and people can come out with.	Philip

Page	Line	Now Reads	Change	Speaker
699	21	MR. PHILLIP:	MR. PHILIP:	
701	9	MR. PHILLIP:	MR. SHERMAN:	
701	13	MR. PHILLIP:	MR. SHERMAN:	
701	24	MR. BOLOURCHI	DR. BOLOURCHI	
702	1	No. 11 or six inches	No. 11 at six inches	Bolourchi
702	7	MR. BOLOURCHI	DR. BOLOURCHI	
702	24	refrain	restrain	Saouma
702	25	Defines	Even in	Saouma
703	1	volumetric. It is confined in	volumetric even if it is confined in	Saouma
703	2	B for instance, in the two directions.	in two directions.	Saouma
703	7	concrete. There's	There's	Saouma
703	8	It's won't expand.	It will expand.	Saouma
703	14	details	detail	Saouma
704	4	have reinforcement	have the reinforcement	Saouma
705	25	phases	faces	Sherman
707	13	track	crack	Saouma
707	16	either	said	Saouma
707	23	divisible	visible	Saouma
708	6	certain it will	certain – it will	Saouma
708	8	expand, it is	expand, but if it is	Saouma
709	5	data than	data more than	Saouma
709	10	year-and-a-half	a year-and-a-half	Saouma
709	14	it edge effect	it an edge effect	Saouma
711	2	full course	pull cores	Carley
712	16	discussed?	discussed.	Simons
713	15	MS. COLLINS:	MR. COLLINS:	
717	16	ageing	aging	Buford
717	17	mechanism.	mechanisms.	Buford
717	24	here, what	here,	Saouma
717	25	concern is at	concern is that at	Saouma
718	19	system, people	a system for people	Saouma
720	24	dams which is	dams, which are	Saouma
721	7	indication	indications	Saouma
725	19	one have	one we have	Saouma
725	20	with that.	with.	Saouma
725	22	element and	element analysis and	Saouma
726	14	in	and	Carley
726	16	did have	did not have	Carley
727	23	three years	three years ago,	Saouma
728	1	linear	non-linear	Saouma
728	3	linear	non-linear	Saouma
728	5	funding from	funding from the	Saouma
728	5	with one search	research	Saouma
728	6	classical unit	classical report	Saouma
728	10	linear	non-linear	Saouma

Page	Line	Now Reads	Change	Speaker
728	12	EPRI	EPRI,	Saouma
728	15	Seabrook would suffer	Seabrook suffering	Saouma
728	16	analysis. To	analysis – to	Saouma
728	17	just used is	just used – is	Saouma
728	18	MR. BOLOURCHI	DR. BOLOURCHI	
729	16	surface	stress	Bolourchi
729	17	seam	stress	Bolourchi
729	24	record	code	Bolourchi
731	6	MR. BOLOURCHI	DR. BOLOURCHI	
732	4	true thickness	through thickness	Bolourchi
732	14	non-linear are applicable.	non-linear analyses are inapplicable.	Saouma
732	20	analysis	analyses	Saouma
732	21	analysis	analyses	Saouma
732	24	Chantilly	Gentilly	Saouma
732	25	Bureau	The Bureau	Saouma
733	2	than nuclear reactors.	than a nuclear reactor.	Saouma
733	3	need because	need non-linear analysis because	Saouma
733	8	the regime	the linear regime	Saouma
733	9	such high factor	such a high factor	Saouma
733	10	reactor from my point of view	reactor, from my point of view,	Saouma
737	19	attempt	intent	Simons
743	13	paper fabrication	papers, publications	Saouma
743	15	is a type	is the type	Saouma
744	25	probably he is	probably it is	Saouma
745	1	bad brittle reinforcement also	had brittle reinforcement. Also	Saouma
745	20	proper	hopper	Simons
748	24	lab because	lab, because	Saouma
750	11	28 day strengths	28-day strength	Saouma
750	11	the deterioration	the deterioration,	Saouma
750	13	28 day	28-day	Saouma
751	13	to a database	to the database	Saouma
751	15	28 day strengths	28-day strength	Saouma
752	4	and to get it back again.	and get it back to us again.	Saouma
752	19	true thickness	through-thickness	Bayrak
753	16	F prime C?	f prime C?	Saouma
760	6	Court	Board	Bessette
760	6	Glen	Glenn	Bessette
766	9	rod	raw	Lighty
766	23	for the license and memory request	for the license amendment request	Wachutka
769	1	I went here	I went	Saouma
769	5	So, very	The very	Saouma

Page	Line	Now Reads	Change	Speaker
769	6	repetitive of free force	representativeness of reinforced	Saouma
769	16	what the degradation, which	what is the gradation.	Saouma
769	18	Degradation	Gradation	Saouma
769	22-23	representative of reinforced concrete at Seabrook Station	"representative of reinforced concrete at Seabrook Station"	Saouma
770	1	still not	still do not	Saouma
770	3	discussed prior	discussed	Saouma
770	4	a gradation, what is a	the gradation, what is the	Saouma
770	6	I mentioned	I mention	Saouma
770	10	ratio	ratios	Saouma
770	12	condition.	conditions.	Saouma
770	14	structure	structural	Saouma
770	20	crack,	cracks,	Saouma
770	23	again in	again is in	Saouma
770	17-18	inspect course for mid-plane, mid-plane cracks.	“inspect cores for mid-plane cracks."	Saouma
771	5	complete	concrete	Saouma
771	6	the day, would	the day,	Saouma
771	9	also have,	also	Saouma
771	12	bottom of the page	bottom of the page:	Saouma
771	13	through-thickness inspection and,	“through-thickness expansion” and,	Saouma
771	14	inspection relies	expansion relies	Saouma
771	15	reservation with that method which	reservations with that method which,	Saouma
771	22	modulus cannot	modulus that cannot	Saouma
771	25	routine monitoring	“[r]outine monitoring”	Saouma
771	25	there are determined	they “determine	Saouma
772	2	program limits.	program limits.”	Saouma
772	16	forward looking	forward-looking	Saouma
772	16	which is very	which is a very	Saouma
772	18	what is a	what is the	Saouma
772	19	expansion and,	expansion, and	Saouma
772	22	overlapping contingency plan for extending the expansion limit.	“develop contingency plans for extending the expansion limit."	Saouma
773	1	don’t have	don’t meet	Saouma
773	8	Volumetric expansion, there is, what does	At “Volumetric Expansion,” it says, "test data	Saouma
773	9	it shows that	show that	Saouma
773	10	direction, does not	direction does not	Saouma
773	11	in other strain direction.	in unrestrained directions.”	Saouma
773	14	Milton	Multon	Saouma
773	16	free	dependent	Saouma

Page	Line	Now Reads	Change	Speaker
773	23	maximum volumetric expansion	“maximum volumetric expansion”	Saouma
773	24	analysis	analyses	Saouma
774	1	yes, CEB,	yes, the CEB,	Saouma
774	7	section 6, it is said that for,	Section 6, it says,	Saouma
774	8	that after the FSEL test specimen exhibits a measure	“Thereafter, the FSEL test specimens exhibited much greater	Saouma
774	9	of expansion and the through-thickness	expansion in the through-thickness,”	Saouma
774	16	last	past	Saouma
774	17	last	past	Saouma
775	22	write	meant	Judge
776	10	dwelt	delved	Saouma
776	14	reviewer	reviewers	Saouma
776	19	such an observation will	“[s]uch an observation would	Saouma
776	21	location with the CCI	locations with a CCI	Saouma
776	22	per meter.	per meter.”	Saouma
777	1	extensometer	extensometers	Saouma
777	5	the expected plant	“[t]he expected trend	Saouma
777	6	at in-plane and through-thickness value would be	that in-plane and through-thickness expansion values will be	Saouma
777	7	expansion level	expansion levels	Saouma
777	10	we had	we have	Saouma
777	13	had	have	Saouma
777	14	monitoring	monitoring program	Saouma
778	22	owns	own	Bayrak
780	21	us	use	Bayrak
782	19	band	bent	Bayrak
782	22	spent death rations	span to depth ratios	Bayrak
783	19	co-IT	co-PI	Bayrak
785	6	degrading	grading	Simons
785	17	4273?	4273.	Simons
786	8	in-plain	in-plane	Simons
786	15	plan's	plans	Simons
786	19	box	plot	Simons
786	20	plain	plane	Simons
786	25	in-plain	in-plane	Simons
787	5	in-plain	in-plane	Simons
793	22	separate from	with	Saouma
793	25	Modele	Modeer	Saouma
795	2	MR. SIMONS	DR. BAYRAK	
795	6	coded	code	Bayrak
795	6	MR. SIMONS	DR. BAYRAK	
797	7	LSAP	LSTP	Saouma

Page	Line	Now Reads	Change	Speaker
797	12	not only with issue strengths.	concerned not only with the issue of strengths.	Saouma
797	19	which the result in the error bar	without error bars	Saouma
797	25	caught, cut all this	caught all these	Saouma
798	4	had	has	Saouma
798	17	myself, my	myself. My	Saouma
799	2	background.	backgrounds.	Saouma
799	3	having put	having been put	Saouma
799	14	My name is Jacob Phillip	My name is Jacob Philip	Philip
799	14	MR. PHILLIP:	MR. PHILIP:	
799	22	MR. PHILLIP:	MR. PHILIP:	
799	23	the long large scale test	the large scale test	Philip
800	4	Mr. Phillip,	Mr. Philip,	Judge
800	6	MR. PHILLIP:	MR. PHILIP:	
800	10	MR. PHILLIP:	MR. PHILIP:	
800	13	MR. PHILLIP:	MR. PHILIP:	
800	15	MR. PHILLIP:	MR. PHILIP:	
800	18	MR. PHILLIP:	MR. PHILIP:	
801	9	the membership of the NR	the membership of the SAITT	Thomas
803	13	president	publishing	Saouma
803	17	two years	two years and	Saouma
803	23	NIST, Kiara	NIST. Chiarra	Saouma
803	24	Sarathi (phonetic)	Ferraris	Saouma
803	25	work	works	Saouma
804	3	NIST.	NIST, in	Saouma
804	16	engineer, researcher	engineers, researchers	Saouma
805	1	analysis.	analysis of ASR.	Saouma
805	4	his art	ASR --	Saouma
805	5	okay,	okay --	Saouma
805	6	with ASR.	of ASR.	Saouma
805	8	prevail itself from	avail itself of	Saouma
805	9	someone	someone,	Saouma
806	1	Phillip?	Philip?	Judge
806	2	MR. PHILLIP:	MR. PHILIP:	
807	10	We have extremely well or instrumented	We have extremely well instrumented	Philip
807	18	like NUREG C, NUREG documents	like NUREG documents	Philip
808	9	for its	the	Saouma
810	7	Under C-3411, question was	Under C.3.4.1.1, question was	Judge Trikouros
811	4	engineer	as engineers,	Saouma
811	5	limitation about the	limitations about our	Saouma
811	23	to the – to obtain	to obtain	Saouma
812	4	the user capacity	reduce the capacity	Saouma

Page	Line	Now Reads	Change	Speaker
812	8	there is so much unknown	so much is unknown --	Saouma
813	21	this conformed	risk informed	Thomas
814	2	the regulatory guidance and Reg Guide 174	the regulatory guidance and Reg Guide 1.174	Thomas
814	21	regulatory guidance, and	regulatory guidance were met, and	Thomas
814	4-5	and core damage frequency within the NRC's acceptance criteria.	and core damage frequency, they are within the NRC's acceptance criteria.	Thomas
816	9	a CEB	a CEB,	Saouma
816	12	come	comes	Saouma
816	14	Design, four	Design, and there were four	Saouma
816	15	time, reviewer time, making	a reviewer was making	Saouma
816	16	clarification.	clarifications.	Saouma
816	17	There is	There was	Saouma
816	19	maybe there was	maybe there were	Saouma
817	3	some datas,	some data,	Saouma
818	2	STM	ASTM	Saouma
819	6	analyst appear	analyst	Saouma
819	9	already	then	Saouma
819	10	parameter.	parameters.	Saouma
819	14	O'Neil	nonlinear	Saouma
819	24	engineer	engineers	Saouma
819	25	with on the	with the	Saouma
819	25	earthquake.	earthquakes.	Saouma
820	8	80%	80% risk	Saouma
821	18	Cervinka (phonetic)	Cervenka	Saouma
821	19	Czech	the Czech	Saouma
822	2	is one	is none	Saouma
822	13	engineer	engineers	Saouma
823	4	just qualitative suspended risk	just qualitatively informed risk	Thomas
823	9	probability of	probabilisitic	Bell
824	1	periodically by connecting integrated leak rate tests.	periodically by conducting integrated leak rate tests.	Thomas
824	14	D of the	D the	Saouma
824	17	Galambos and those were pioneering	Galambos. And those people were on a pioneering	Saouma
824	18	NIST, has to	NIST. The code has to	Saouma
824	19	things a Gaussian	things as a Gaussian	Saouma
824	20	to once infinity	from minus infinity	Saouma
825	1	limit load resistant	load resistance	Saouma

Page	Line	Now Reads	Change	Speaker
825	7	accept to	accept and to	Saouma
825	8	codes beyond	codes. Beyond	Saouma
825	9	analysis, my	analysis, in my	Saouma
825	10	starts with really for	starts really with	Saouma
825	11	structure	structures	Saouma
825	12	Kennedy	Kemeney	Saouma
825	17	competent	components	Saouma
826	11	who was	who	Saouma
826	20	if there is a certain	if a certain	Saouma
826	21	happen.	happens.	Saouma
828	2	concern	concerns	Saouma
829	19	effect	affect	Saouma
829	20	produce	reduce	Saouma
830	2	pre-stress	pre-stressed	Bayrak
831	17	BWD	(bw)(d)	Bayrak
833	12	Hognestan (phonetic)	Hognestad	Bayrak
833	21	Asheville code (phonetic)	AASHTO Code	Bayrak
837	22	the implant expansion	the in-plant expansion	Bagley
838	8	because for	because	Saouma
838	23	monitor, but	monitoring bounds	Bolourchi
839	22	prediction to what it is	predictions as to what it is by	Saouma
840	1	pretend	pretends	Saouma
840	4	if you are	if you have	Saouma
840	6	So dependents	It depends	Saouma
840	7	pretend	pretends	Saouma
840	10	heat larger	lead to larger	Saouma
840	13	elastic modulus	elastic modulus,	Saouma
840	14	shear strengths and fracture energy	shear strengths, and fracture energy --	Saouma
840	16	also investigation	also the investigation	Saouma
842	4	don't it	don’t do it	Saouma
842	9	particle	particular	Saouma
842	19	stipises (phonetic)	stiffnesses	Bell
843	2	demand. That is	demand - that is,	Bell
843	4	structure, and capacity. The	structure - and capacity - the	Bell
845	5	command,	comment,	Saouma
845	6	find all its	finds its	Saouma
845	10	which says it is	which says “[i]t is	Saouma
845	11	when known	well known	Saouma
845	13	on its own therefore,	on its own, therefore,	Saouma
845	14	not sufficient.	not sufficient.”	Saouma
845	16	a curve, that	a curve, but that	Saouma
845	17	infinite way	infinite number of ways	Saouma
845	18	matched and as	matched. And as	Saouma
846	15	page 16	page 76	Saouma

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846	20	engineer when known	engineers well know.	Saouma
846	20	We do feet	We do take	Saouma
846	21	and, we	and we	Saouma
846	25	fast 48 transfer	fast fourrier transform	Saouma
847	3	garbage in between	garbage in, garbage out	Saouma
847	15	some engineer	some engineers	Saouma
847	18	by a mere	by mere	Saouma
847	19	analysis correct.	analysis is correct.	Saouma
849	20	ACI 318.71	ACI 318-71	Bayrak
849	22	our built	our buildings and	Bayrak
856	1	criteria choices constitute of	criteria, choices on constitutive	Bayrak
856	2	ASR how	ASR, how	Bayrak
856	25	blind prediction an example so one	a blind prediction. An example is one	Saouma
857	3	shear was	shear that was	Saouma
857	3	ASR about	ASR. About	Saouma
857	4	results and	results. In	Saouma
857	5	recent	a decent	Saouma
859	1	building, when	building. When	Bell
859	2	release. The	release, the	Bell
859	5	annuals	annulus	Bell
859	9	boil	boiler	Bell
859	9	ASME	the ASME	Bell
860	5	Seabook, is	Seabrook is,	Bell
866	3	unlimited	limited	Bell
869	8	maintained within the elastic rate.	maintained within the elastic range.	Thomas
869	16	defamation	deformation	Buford
875	18	Mr. Phillip	Mr. Philip	Judge
875	22	MR. PHILLIP:	MR. PHILIP:	
877	14	MR. PHILLIP:	MR. PHILIP:	
877	17	we and research,	we in research,	Philip
878	8	MR. PHILLIP:	MR. PHILIP:	
879	16	defamation measurements.	deformation measurements.	Buford
885	20	MR. PHILLIP:	MR. PHILIP:	
888	25	PARTICIPANT:	MR. LAMB:	
893	11	MR. BOLOURCHI	DR. BOLOURCHI	
893	15	MR. BOLOURCHI	DR. BOLOURCHI	
897	5	MR. BOLOURCHI	DR. BOLOURCHI	
897	5	INT22	INT022	Bolourchi
897	19	MR. BOLOURCHI	DR. BOLOURCHI	
898	2	MR. BOLOURCHI	DR. BOLOURCHI	
898	5	MR. BOLOURCHI	DR. BOLOURCHI	
898	11	consistently	consistent with	Bolourchi
898	15	MR. BOLOURCHI	DR. BOLOURCHI	

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899	12	MR. BOLOURCHI	DR. BOLOURCHI	
900	8	MR. BOLOURCHI	DR. BOLOURCHI	
900	11	RAI-B10	RAI-D10	Bolourchi
900	22	MR. BOLOURCHI	DR. BOLOURCHI	
900	25	MR. BOLOURCHI	DR. BOLOURCHI	
901	4	MR. BOLOURCHI	DR. BOLOURCHI	
901	9	MR. BOLOURCHI	DR. BOLOURCHI	
901	12	MR. BOLOURCHI	DR. BOLOURCHI	
901	12	a bit of	it as	Bolourchi
901	17	MR. BOLOURCHI	DR. BOLOURCHI	
901	22	MR. BOLOURCHI	DR. BOLOURCHI	
902	3	MR. BOLOURCHI	DR. BOLOURCHI	
902	12	MR. BOLOURCHI	DR. BOLOURCHI	
902	21	MR. BOLOURCHI	DR. BOLOURCHI	
902	24	MR. BOLOURCHI	DR. BOLOURCHI	
903	12	MR. BOLOURCHI	DR. BOLOURCHI	
903	16	MR. BOLOURCHI	DR. BOLOURCHI	
903	19	MR. BOLOURCHI	DR. BOLOURCHI	
903	25	MR. BOLOURCHI	DR. BOLOURCHI	
904	19	MR. BOLOURCHI	DR. BOLOURCHI	
904	23	MR. BOLOURCHI	DR. BOLOURCHI	
905	5	MR. BOLOURCHI	DR. BOLOURCHI	
905	22	MR. BOLOURCHI	DR. BOLOURCHI	
906	1	MR. BOLOURCHI	DR. BOLOURCHI	
906	4	MR. BOLOURCHI	DR. BOLOURCHI	
906	19	under the	structural	Bolourchi
907	1	MR. BOLOURCHI	DR. BOLOURCHI	
910	1	MR. BOLOURCHI	DR. BOLOURCHI	
910	12	MR. BOLOURCHI	DR. BOLOURCHI	
915	6	ISC	ISE	Bayrak
915	23	MR. BOLOURCHI	DR. BOLOURCHI	
917	1	MR. BOLOURCHI	DR. BOLOURCHI	
917	5	moving frame	moment frame	Bolourchi
917	12	moving frame	moment frame	Bolourchi
918	6	MR. BOLOURCHI	DR. BOLOURCHI	
919	5	MR. BOLOURCHI	DR. BOLOURCHI	
919	6	principal distress	principal stress	Bolourchi
919	7	restraint	strain	Bolourchi
920	12	MR. BOLOURCHI	DR. BOLOURCHI	
921	25	MR. BOLOURCHI	DR. BOLOURCHI	
922	4	MR. BOLOURCHI	DR. BOLOURCHI	
923	4	MR. BOLOURCHI	DR. BOLOURCHI	
924	12	MR. BOLOURCHI	DR. BOLOURCHI	
926	22	minute	meter	Bell
928	5	MR. BOLOURCHI	DR. BOLOURCHI	
928	7	MR. BOLOURCHI	DR. BOLOURCHI	
928	12	MR. BOLOURCHI	DR. BOLOURCHI	

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928	22	MR. BOLOURCHI	DR. BOLOURCHI	
933	23	expanding	expansion	Sherman
934	8	MR. BOLOURCHI	DR. BOLOURCHI	
934	18	MR. BOLOURCHI	DR. BOLOURCHI	
934	22	MR. BOLOURCHI	DR. BOLOURCHI	
934	25	MR. BOLOURCHI	DR. BOLOURCHI	
935	10	MR. BOLOURCHI	DR. BOLOURCHI	
935	18	MR. BOLOURCHI	DR. BOLOURCHI	
936	13	MR. BOLOURCHI	DR. BOLOURCHI	
937	22	MR. BOLOURCHI	DR. BOLOURCHI	
938	3	ASR code	ASR growth	Bolourchi
940	23	MR. BOLOURCHI	DR. BOLOURCHI	
942	9	MR. BOLOURCHI	DR. BOLOURCHI	
943	9	MR. BOLOURCHI	DR. BOLOURCHI	
943	22	MR. BOLOURCHI	DR. BOLOURCHI	
947	16	5059	50.59	Judge
949	7	5059	50.59	Buford
949	8	via CFR 50.9	via 10 CFR 50.90.	Buford
950	9	Task Force on	tests were on	Sherman
951	16	MR. BOLOURCHI	DR. BOLOURCHI	
951	19	MR. BOLOURCHI	DR. BOLOURCHI	
954	4	MR. BOLOURCHI	DR. BOLOURCHI	
961	3	MR. BOLOURCHI	DR. BOLOURCHI	
961	5	MR. BOLOURCHI	DR. BOLOURCHI	
961	8	MR. BOLOURCHI	DR. BOLOURCHI	
961	12	MR. BOLOURCHI	DR. BOLOURCHI	
961	19	MR. BOLOURCHI	DR. BOLOURCHI	
961	22	MR. BOLOURCHI	DR. BOLOURCHI	
962	5	MR. BOLOURCHI	DR. BOLOURCHI	
962	13	MR. BOLOURCHI	DR. BOLOURCHI	
962	20	MR. BOLOURCHI	DR. BOLOURCHI	
964	10	MR. BOLOURCHI	DR. BOLOURCHI	
964	12	MR. BOLOURCHI	DR. BOLOURCHI	
964	14	enforcement	reinforcements	Bolourchi
965	3	MR. BOLOURCHI	DR. BOLOURCHI	
966	7	JA03 talking	JA03 is talking	Bell
966	15	MR. BOLOURCHI	DR. BOLOURCHI	
966	16	balance	distance	Bolourchi
966	18	MR. BOLOURCHI	DR. BOLOURCHI	
972	14	MR. BOLOURCHI	DR. BOLOURCHI	
983	16	elastic modulus,	elastic modulus --	Bagley
987	2	FHAWA	FHWA	Saouma
993	8	within the 3757	within -3757	Bagley
1002	5	PARTICIPANT:	JUDGE TRIKOUROS:	
1002	14	ISC	ISE	Bayrak
1003	19	different	difference	Bayrak
1004	4	ACI 31871	ACI 318-71	Bayrak

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1004	5	ACI 31871	ACI 318-71	Bayrak
1006	16	B sub c (phonetic)	V sub c	Bayrak
1016	1	captured in Appendix E of MPR 4273.	captured in Appendix C of MPR 4273.	Lehman
1016	14-15	Mr. Lehman, can we start at nine	Mr. Lamb, can we start at nine	Judge Spritzer
1017	5	opening statements,	closing statements,	Judge
1017	6	opening statements	closing statements	Judge
1019	11	At that is,	And that is,	Buford
1019	18	MR. LEHMAN:	MR. WACHUTKA:	
1020	22	MR. LEHMAN:	MR. WACHUTKA:	
1020	23	SC	SE	Wachutka
1021	14	Jacob Phillip,	Jacob Philip,	Judge
1021	15	Jacob Phillip	Jacob Philip	Judge
1021	18	MR. PHILLIP:	MR. PHILIP:	
1021	24	MR. PHILLIP:	MR. PHILIP:	
1023	15	Fuel walk-downs	field walk-downs	Judge
1026	12	and ASR expansion monitoring program.	an ASR expansion monitoring program.	Judge Trikouros
1027	9	needed to come into	needed to come to	Buford
1028	4	really leads in the next paragraph.	really leads in to the next paragraph.	Wachutka
1029	1	MR. PHILLIP:	MR. PHILIP:	
1029	3	approach or our review,	approach for our review,	Philip
1029	6	MR. PHILLIP:	MR. PHILIP:	
1029	8	MR. PHILLIP:	MR. PHILIP:	
1036	10	and getting into a	and getting it to a	Buford
1038	4-5	the load test failures that conducted at different levels of ASR expansion.	the load tests to failure were conducted at different levels of ASR expansion.	Thomas
1045	24	comparison and capacities are made to a controlled	comparison of capacities are made to a controlled	Thomas
1048	25	MR. BOLOURCHI	DR. BOLOURCHI	
1049	3	MR. BOLOURCHI	DR. BOLOURCHI	
1050	11	MR. PHILLIP:	MR. PHILIP:	
1055	7	it does into	it goes into	Thomas
1055	22	which is by using crack section	which is by using cracked section	Thomas
1057	11	at a certain point.	up to a certain point.	Thomas
1057	18	way SCI318 is based on is	way ACI 318 is based on is	Thomas
1057	21	rather than concrete failing and compression.	rather than concrete failing in compression.	Thomas
1058	6	MR. THOMAS:	DR. SAOUMA:	
1059	9	flexion	flexure	Bayrak
1059	21	ACI 31871	ACI 318-71	Bayrak

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1059	22	ACI 31819	ACI 318-19	Bayrak
1060	3	ACI 31871	ACI 318-71	Bayrak
1060	16	Soft weight	Self weight	Bayrak
1062	2	the formation	deformation	Bayrak
1064	18	MR. BOLOURCHI	DR. BOLOURCHI	
1064	20	low-grade	below grade	Bolourchi
1066	7	MR. BOLOURCHI	DR. BOLOURCHI	
1066	10	MR. BOLOURCHI	DR. BOLOURCHI	
1066	14	MR. BOLOURCHI	DR. BOLOURCHI	
1066	17	MR. BOLOURCHI	DR. BOLOURCHI	
1067	1	ACI creating code	ACI building code	Bolourchi
1067	9	MR. BOLOURCHI	DR. BOLOURCHI	
1067	12	MR. BOLOURCHI	DR. BOLOURCHI	
1067	17	MR. BOLOURCHI	DR. BOLOURCHI	
1067	19	MR. BOLOURCHI	DR. BOLOURCHI	
1067	22	MR. BOLOURCHI	DR. BOLOURCHI	
1067	25	MR. BOLOURCHI	DR. BOLOURCHI	
1068	2	MR. BOLOURCHI	DR. BOLOURCHI	
1073	11	had	have	Saouma
1074	3	MR. SYMONS	MR. SIMONS	
1075	4	MR. SYMONS	MR. SIMONS	
1075	12	MR. SYMONS	MR. SIMONS	
1076	4	MR. SYMONS	MR. SIMONS	
1077	15	PARTICIPANT	MR. SIMONS	
1078	9	MR. SYMONS	MR. SIMONS	
1078	25	PARTICIPANT	MR. SHERMAN	
1079	2	MR. SYMONS	MR. SIMONS	
1079	6	Dr. Derek Kong	Dr. Derek Cong	Simons
1079	14	MR. SYMONS	MR. SIMONS	
1079	17	MR. SYMONS	MR. SIMONS	
1080	6	regional	original	Bessette
1081	15	MR. SYMONS	MR. SIMONS	
1082	4	here	shear	Simons
1083	14	composite strength.	compressive strength.	Thomas
1084	1	about	above	Thomas
1084	12	anchorage test program, our flexure tests.	anchorage test program, or the flexure tests.	Thomas
1085	10	it begs us all the time.	it exists all the time.	Thomas
1085	18	ACI 3.8,	ACI 318,	Thomas
1085	3-4	the rebar is not affected, only beyond that the rebar becomes affected.	the rebar is not effective, only beyond that the rebar becomes effective.	Thomas
1088	25	Microcrack	Microcracking	Saouma
1089	19	access	axis	Bayrak
1091	14	safe shutdown.	safe shutdown earthquake.	Thomas

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1092	14	The bottom portion of the member	The top portion of the member	Thomas
1092	25	use of crack section properties.	use of cracked section properties.	Thomas
1092	10-11	A member is subject to bending a flexure. The bottom portion is subject	When a member is subject to bending or flexure, the bottom portion is subject	Thomas
1093	6	The code addresses using equal and linear	The code addresses this using equivalent linear	Thomas
1093	10	problem muddying	problem being muddied in	Saouma
1093	12	hear	we hear	Saouma
1093	13	is no	are no	Saouma
1093	18	of structure	of a structure	Saouma
1094	4	them because	them is because	Saouma
1094	7	and more and	and more. And	Saouma
1094	9	under sustained load,	under a sustained load.	Saouma
1094	9	with time,	With time,	Saouma
1094	10	It is well established	There is a well-established	Saouma
1094	21	beam	beams	Saouma
1094	21	HTT	time t	Saouma
1094	23	response,	responses,	Saouma
1096	25	ISC	ISE	Bayrak
1097	1	ISC	ISE	Bayrak
1099	8	PARTICIPANT	DR. BAYRAK	
1099	10	PARTICIPANT	DR. BAYRAK	
1100	7	fee factors	phi factors	Bayrak
1103	6	use	used	Saouma
1104	10	brittlement (phonetic)	brittle	Bolourchi
1104	14	2 prime C	2 square root of f prime c	Bolourchi
1106	9	compressive strength,	“compressive strength,	Saouma
1106	9	plastic strain, and	plastic strain at	Saouma
1106	11	factors affecting the response	factors influencing the response.”	Saouma
1106	12	Compressive strengths	Compressive strength	Saouma
1106	13	compressive strengths	compressive strength	Saouma
1106	1 to 2	the wall and lateral colum exhibit non-linear behavior.	“the wall and lateral column exhibit non-linear behavior."	Saouma
1107	2	200 day,	200 days,	Saouma
1107	4	1,000 day,	1,000 days,	Saouma
1107	12	steel, the stress to	it is stressed to	Saouma
1108	21	failure in the institutional structural engineers	failure by the Institute of Structural Engineers	Saouma
1114	25	the staff makes on operating experience related to	the staff makes is on operating experience related to	Thomas
1115	22	structural failures;	structural failure;	Saouma

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1117	15	PARTICIPANT	MR. PHILLIP	
1119	11	Mr. Phillip	Mr. Philip	Saouma
1119	12	method, he said	method. He said,	Saouma
1119	20	mortar bar	a mortar bar	Saouma
1119	22	PARTICIPANT	MR. PHILLIP	
1119	24	below one-quarter for inch.	below three-quarter inch.	Philip
1120	16	PARTICIPANT	MR. PHILLIP	
1120	23	PARTICIPANT	MR. PHILLIP	
1121	7	mortar bar	a mortar bar	Saouma
1121	8	mortar bar	a mortar bar	Saouma
1121	9	story so I	story. So I	Saouma
1122	3	monitoring the program,	monitoring program,	Buford
1123	10	statement	a statement	Saouma
1123	11	often enough;	“often enough;”	Saouma
1123	12	often enough	"often enough	Saouma
1123	13	short enough;	“short enough;”	Saouma
1123	13	what short enough	what “short enough”	Saouma
1123	14	statement like how to predict	a statement like "how to predict"	Saouma
1123	15	next inspection on	next inspection. On	Saouma
1123	16	we predict.	we predict?	Saouma
1123	14-15	we know how to predict	we know “how to predict”	Saouma
1124	25	institutional	Institution of	Thomas
1125	1	structural engineer's	Structural Engineers	Thomas
1125	2	monitoring a structure in the UK and internationally	monitoring of structures in the UK and internationally	Thomas
1125	8	where there is long-term monitoring,	the rigorous long-term monitoring,	Thomas
1125	9	of gas blocks	of cast blocks	Thomas
1125	14	The expansion sites are where concrete	The exposure sites are where concrete	Thomas
1125	11-12	research establishments’ AAR exposure site program, as confirmed with linear expansion with time,	Research Establishment’s AAR exposure site program, has confirmed this linear expansion with time,	Thomas
1127	20	mirror if	mirror to see	Saouma
1127	22	box of	box. The	Saouma
1127	23	value which	value	Saouma
1128	1	by having	by having an	Saouma
1128	3	ISE talk	ISE talks	Saouma
1128	4	which is	which	Saouma
1128	5	FWA (phonetic)	FHWA	Saouma
1128	5	talk	talks	Saouma
1128	10	on closer	on looking	Saouma
1128	11	bird view	bird’s eye view	Saouma

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1128	17	That's, in my opinion,	That, in my opinion, is	Saouma
1130	8	accepted limits	acceptance limits	Buford
1130	21	There is	There are	Saouma
1130	24	FSWA	FHWA	Saouma
1131	2	Scandanavian,	Scandanavians,	Saouma
1131	2	Canadian.	Canadians.	Saouma
1131	5	asking to	asking NextEra to	Saouma
1131	11	the number of	a number of	Saouma
1131	13	is end	is the end	Saouma
1131	16	Remind me	Reminds me	Saouma
1131	21	not what you	not what we	Saouma
1133	5	that proceeded the LAR,	that preceded the LAR,	Buford
1134	11	densometer	extensometer	Saouma
1134	13	that, that	that,	Saouma
1134	18	investigation.	investigations.	Saouma
1134	24	to be not	to be	Saouma
1138	24-25	edges of the large-scale test specimens, at the very top and bottom, were restrained.	edges of the large-scale test specimens, at the very top and bottom, were unrestrained.	Buford
1139	25	apparent delamination is	"apparent delamination," a	Saouma
1140	2	something it	something that it	Saouma
1140	5	precisely we	precisely why we	Saouma
1140	20	-- it's	as	Saouma
1140	23	is explanation?	is the explanation?	Saouma
1140	25	want to	wants to	Saouma
1141	1	Just it	Just so it	Saouma
1144	16	MPR-4152	MPR-4153	Saouma
1144	17	there is	there are	Saouma
1144	18	building has	building has a	Saouma
1144	21-22	or if I take the standard use by the mean by	or if I divide the mean by the standard deviation, I get	Saouma
1145	2	point	points	Saouma
1145	5	there is	that is	Saouma
1145	7	ACI code that is	ACI Code: that is,	Saouma
1145	8	57,000 – of	57,000 square root of	Saouma
1145	8	F prime sub C	f prime sub c	Saouma
1145	16	estimated	estimate	Saouma
1145	20	is very high	is very low	Saouma
1145	24	enclosure building	the containment enclosure building	Saouma
1146	4	electric tunnel	the electric tunnel	Saouma
1146	15	is Achilles’ heel in	is not Achilles' heel	Saouma
1146	19	need	needs	Saouma
1147	15	factors	factor	Bagley
1148	5	exensometer?	extensometers?	Saouma

Page	Line	Now Reads	Change	Speaker
1148	12	measurement	measurements	Saouma
1148	13	extensometer	extensometers	Saouma
1149	10	The large	The purpose of the large	Saouma
1150	1	renders	render	Saouma
1150	12	try to remain	tend to remain	Saouma
1150	16	relies	depends	Saouma
1151	1	inspection.	inspections.	Saouma
1152	8	concrete	concretes	Saouma
1152	13	linear classic analysis or we	linear classic analysis we	Saouma
1152	16	parameter.	parameters.	Saouma
1152	21	aggregation	aggregates	Saouma
1153	14	shown by the	showed, the	Saouma
1154	4	Having multi-	Having a multi-	Saouma
1154	7	hand	hands	Saouma
1154	7	engineer	engineers	Saouma
1154	25	passage	passages	Saouma
1155	2	on very locations,	on a very few locations,	Saouma
1155	3	addressed that	addressed: that	Saouma
1155	4	is that	has this	Saouma
1155	5	compression.	compression?	Saouma
1155	8	under service	under the service	Saouma
1155	8	under ultimate	under the ultimate	Saouma
1155	12	God knows	God knows,	Saouma
1155	13	strength	strain	Saouma
1155	15	details which	the details of which	Saouma
1155	22	MR. SYMONS	MR. SIMONS	
1156	6	cover them	cover it	Saouma
1156	9	We don't cover	If we don’t cover	Saouma
1156	11	structure,	structures,	Saouma
1156	17	well established	well-established	Saouma
1156	22	as pointed yesterday,	as I pointed out yesterday,	Saouma
1156	23	take over	takes over	Saouma
1156	23	say crack, you stop.	Says, “Crack, you stop.	Saouma
1157	1	stop you.	stop you.”	Saouma
1157	2	Okay,	"Okay,	Saouma
1157	5	delaminate.	delaminate.”	Saouma
1157	10	the crack	cracks	Saouma
1157	11	Part which	The part which	Saouma
1157	15	Part underground	The part underground	Saouma
1157	17	earthquake come;	earthquake comes;	Saouma
1158	15	been similar	been a similar	Saouma
1158	16	Chad Wood	Charlwood	Saouma
1158	20	expansion less	expansion with less	Saouma
1158	20	percent.	percent humidity.	Saouma
1160	9	metal’s	measured	Saouma
1161	2	extensometer,	extensometers,	Saouma

Page	Line	Now Reads	Change	Speaker
1161	2	which is a	which is the	Saouma
1161	6	flow	flaw	Saouma
1162	7	microcrack	microcracks	Saouma
1162	10	determine that	determine the	Saouma
1162	11	approach,	approach;	Saouma
1162	18	CCI is capture	CCI has captured	Saouma
1162	29	can be location	can be a location	Saouma
1163	1	extension	expansion	Saouma
1163	22	defamation	deformation	Judge
1163	22	defamation	deformation	Saouma
1164	4	is impact	is the impact	Saouma
1164	8	type	types	Saouma
1164	24	last	in the last	Saouma
1164	25	What a petrographer	What petrographers	Saouma
1165	5	crack.	cracks.	Saouma
1165	14	them up and giving	them up, giving	Saouma
1165	14	different weight is a crack in this	different weights to cracks and	Saouma
1165	15	type of aggregate	types of aggregate	Saouma
1165	18	protocol, what are the weight,	protocols for what are the weights,	Saouma
1165	20	petrographer	petrographers	Saouma
1165	20	same.	same results.	Saouma
1165	21	petrographer	petrographers	Saouma
1165	23	petrographer,	petrographers,	Saouma
1165	24	Wiss,	Wiss	Saouma
1166	1	Kong	Cong	Saouma
1166	11	back six	back in	Saouma
1166	13	slice and	slice. And	Saouma
1166	25	rapid	rapidly	Saouma
1167	13	MR. SYMONS	MR. SIMONS	
1167	18	Derek Kong	Derek Cong	Simons
1168	20	one core	on one core	Sherman
1169	10	engineer	engineers	Saouma
1169	18	engineer	engineers	Saouma
1169	21	limitation	limitations	Saouma
1169	21	assumption	assumptions	Saouma
1169	22	in details.	in detail.	Saouma
1170	5	yes,	yes --	Saouma
1170	6	petrographic examination	"Petrographic examinations	Saouma
1170	6	to I	to the DRI	Saouma
1170	7	minimum effort.	minimal equipment.”	Saouma
1170	11	drawn extent	drawn regarding the extent	Saouma
1170	16	including my	including	Saouma
1173	14	God knows if	God knows,	Saouma

Page	Line	Now Reads	Change	Speaker
1173	17	know if	know of	Saouma
1173	18	terminal	thermal	Saouma
1173	22	principle	principal	Saouma
1174	1	AAR.	ASR.	Saouma
1174	9	careful shell	careful with shell	Saouma
1174	10	the two direction	for the two directions,	Saouma
1174	11	plane.	plane?	Saouma
1191	21	records	record	Lighty
1197	9	two-scale	to-scale	Lighty

APPENDIX B: FINAL EXHIBIT LIST OF THE EVIDENTIARY HEARING HELD ON SEPTEMBER 24–27, 2019 (DOCKET NO. 50-443-LA-2)

ADAMS Accession Number	Official Exhibit Number	ADAMS Document Title	Document Availability	Exhibit Status
ML19171A403	INT001-R-00-BD01	OFFICIAL EXHIBIT - INT001-R-00-BD01 - NON-PUBLIC - Pre-filed Testimony of Victor E. Saouma, Ph.D Regarding Scientific Evaluation of NextEra's Aging Management Program for ASR at the Seabrook Nuclear Power Plant - Corrected June 20, 2019.	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19161A374	INT002-00-BD01	OFFICIAL EXHIBIT - INT002-00-BD01 - Summary of Testimony of Victor E. Saouma, Ph.D Regarding Scientific Evaluation of NextEra's Aging Management Program for Alkali-Silica Reaction at the Seabrook Nuclear Power Plant (Non-Proprietary Version).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19161A375	INT003-00-BD01	OFFICIAL EXHIBIT - INT003-00-BD01 - Curriculum Vitae, Dr. Victor E. Saouma.	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19161A376	INT004-00-BD01	OFFICIAL EXHIBIT - INT004-00-BD01 - Grant Award, Experimental and Numerical Investigation of Alkali Silica Reaction in Nuclear Reactors (2014).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19161A377	INT005-00-BD01	OFFICIAL EXHIBIT - INT005-00-BD01 - Final (Public) Summary Report, Experimental and Numerical Investigation of Alkali Silica Reaction in Nuclear Reactors, Grant No. NRC-HQ-60-14-G-0010 (Oct. 2014 - Dec. 2017).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19161A378	INT006-00-BD01	OFFICIAL EXHIBIT - INT006-00-BD01 - Declaration of Dr. Victor E. Saouma, Ph.D (Feb. 12, 2019).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19162A015	INT007-00-BD01	OFFICIAL EXHIBIT - INT007-00-BD01 - NON-PUBLIC - Saouma, Review of Selected Documents Pertaining to the Structural Evaluation of Seabrook Nuclear Power Plant (Feb. 12, 2019).	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19170A330	INT008-R-00-BD01	OFFICIAL EXHIBIT - INT008-R-00-BD01 - Summary: Review of Selected Documents Pertaining to the Structural Evaluation of Seabrook Nuclear Power Plant (Feb. 12, 2019).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019

ADAMS Accession Number	Official Exhibit Number	ADAMS Document Title	Document Availability	Exhibit Status
ML19161A380	INT009-00-BD01	OFFICIAL EXHIBIT - INT009-00-BD01 - Reply Declaration of Victor E. Saouma, Ph.D (March 1, 2019).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19161A381	INT010-00-BD01	OFFICIAL EXHIBIT - INT010-00-BD01 - Seabrook, 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 (August 1, 2016).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19162A016	INT011-00-BD01	OFFICIAL EXHIBIT - INT011-00-BD01 - NON-PUBLIC - NextEra Energy's Evaluation of the Proposed Change Including Attachment 1 Markup of UFSAR Pages (Proprietary) (Enclosure 1 to Letter SBK-L-16071).	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19161A382	INT012-00-BD01	OFFICIAL EXHIBIT - INT012-00-BD01 - MPR-4288, Rev. 0, "Seabrook Station: Impact of Alkali-Silica Reaction on Structural Design Evaluations" (July 2016) (Non-proprietary version) (Enclosure 2 to Letter SBK-L-16071).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19161A383	INT013-00-BD01	OFFICIAL EXHIBIT - INT013-00-BD01 - SG&H Report 160268-R-01, Rev. 0, Development of ASR Load Factors for Seismic Category I Structures (Including Containment) at Seabrook Station, Seabrook, NH (July 2016) (Enclosure 4 to Letter SBK-L-16071).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19162A017	INT014-00-BD01	OFFICIAL EXHIBIT - INT014-00-BD01 - NON-PUBLIC - MPR-4288, Rev. 0, "Seabrook Station: Impact of Alkali-Silica Reaction on Structural Design Evaluations (July 2016) (Enclosure 2 to Letter SBK-L-16071) (Proprietary).	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19162A255	INT015-00-BD01	OFFICIAL EXHIBIT - INT015-00-BD01 - Simpson Gumpertz & Heger, Inc., "Evaluation and Design Confirmation of As-Deformed CEB, 150252-CA-02," Revision 0, July 2016 (Seabrook FP#100985) Enclosure 2 to Letter SBK-L-16153, re: Seabrook Station (Sept. 30, 2016).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019

ADAMS Accession Number	Official Exhibit Number	ADAMS Document Title	Document Availability	Exhibit Status
ML19161A385	INT016-00-BD01	OFFICIAL EXHIBIT - INT016-00-BD01 - Revised Seabrook Station License Renewal Application Updated Final Safety Analysis Report Sections A.2.1.31 for Structures Monitoring A.2.1.31A for Alkali-Silica Reaction and A.2.1.3b for Building . . . (May 18, 2018).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19161A386	INT017-00-BD01	OFFICIAL EXHIBIT - INT017-00-BD01 - Revised Seabrook Station License Renewal Application Appendix B Sections B.2.1.31 for Structures Monitoring, B.2.1.31A for Alkali-Silica Reaction and B.2.1.3b for Building Deformation.	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19170A331	INT018-R-00-BD01	OFFICIAL EXHIBIT - INT018-R-00-BD01 - MPR-4153, Revision 3, Seabrook Station-Approach for Determining Through-Thickness Expansion from Alkali-Silica Reaction (Sept. 2017).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19170A332	INT019-R-00-BD01	OFFICIAL EXHIBIT - INT019-R-00-BD01 - MPR-4273, Rev. 1, Seabrook Station - Implications of Large-Scale Test Program Results on Reinforced Concrete Affected by Alkali-Silica Reaction (July 2016).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19162A018	INT020-00-BD01	OFFICIAL EXHIBIT - INT020-00-BD01 - NON-PUBLIC - MPR-4153, Revision 3, Seabrook Station-Approach for Determining Through-Thickness Expansion from Alkali-Silica Reaction (Sept. 2017) (Proprietary version) (Enclosure 6 to Letter SBK-18072) (Proprietary).	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19162A019	INT021-00-BD01	OFFICIAL EXHIBIT - INT021-00-BD01 - NON-PUBLIC - MPR-4273, Rev. 1, Seabrook Station - Implications of Large-Scale Test Program Results on Reinforced Concrete Affected by ASR (March 2018) (Proprietary version) (Enclosure 7 to Letter SBK-18072).	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19161A390	INT022-00-BD01	OFFICIAL EXHIBIT - INT022-00-BD01 - Simpson Gumpertz & Heger Document No. 170444-MD-01, Rev. 1, "Methodology for the Analysis of Seismic Category I Structures with Concrete Affected by ASR," for Seabrook (Encl. 3 to Letter SBK-L-18074, re: Seabrook . . .	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019

ADAMS Accession Number	Official Exhibit Number	ADAMS Document Title	Document Availability	Exhibit Status
ML19161A391	INT023-00-BD01	OFFICIAL EXHIBIT - INT023-00-BD01 - Simpson Gumpertz & Heger Document No. 170444-L-003 Rev. 1, Response to RAI-D8-Attachment 1 Example Calculation of Rebar Stress For a Section Subjected to Combined Effect of External Axial Moment and Internal ASR.	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19161A392	INT024-00-BD01	OFFICIAL EXHIBIT - INT024-00-BD01 - NRC Safety Evaluation Related to Amendment No. 159 to Facility Operating License No. NPF-086 (March 11, 2019).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19162A020	INT025-00-BD01	OFFICIAL EXHIBIT - INT025-00-BD01 - NON-PUBLIC - NRC Safety Evaluation Related to Amendment No. 159 to Facility Operating License No. NPF-86 (March 11, 2019) Proprietary.	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19162A000	INT026-00-BD01	OFFICIAL EXHIBIT - INT026-00-BD01 - Bayrak, Structural Assessment of Seabrook.	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19177A233	INT027-00-BD01	OFFICIAL EXHIBIT - INT027-00-BD01 - Pre-Filed Opening Testimony of Victor E. Saouma, PH.D regarding Scientific Evaluation of Nextera's Aging Management Program for Alkali-Silica Reaction at the Seabrook Nuclear Power Plant.	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19235A316	INT028-00-BD01	OFFICIAL EXHIBIT - INT028-00-BD01 - NON-PUBLIC - Rebuttal Testimony of Victor E. Saouma, Ph.D Regarding Scientific Evaluation of NextEra's Aging Management Program for Alkali-Silica Reaction at the Seabrook Nuclear Power Plant.	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19235A320	INT029-00-BD01	OFFICIAL EXHIBIT - INT029-00-BD01 - Summary of Rebuttal Testimony of Victor E. Saouma, Ph.D Regarding Scientific Evaluation of NextEra's Aging Management Program for Alkali-Silica Reaction at the Seabrook Nuclear Power Plant (Non-Proprietary Version).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19265A019	INT030-R-00-BD01	OFFICIAL EXHIBIT - INT030-R-00-BD01 - Saouma Supplemental Rebuttal Testimony.	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019

ADAMS Accession Number	Official Exhibit Number	ADAMS Document Title	Document Availability	Exhibit Status
ML19254F151	INT031-00-BD01	OFFICIAL EXHIBIT - INT031-00-BD01 - Saouma, Review of Selected Documents Pertaining to the Structural Evaluation of Seabrook Nuclear Power Plant (Feb. 12, 2019) (Non-Proprietary Version).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19254F154	INT032-00-BD01	OFFICIAL EXHIBIT - INT032-00-BD01 - Pre-Filed Rebuttal Testimony of Victor E. Saouma, Ph.D Regarding Scientific Evaluation of Nextera's Aging Management Program for ASR at the Seabrook Nuclear Power Plant Submitted on Behalf of C-10 Research. . .	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19265A021	INT033-00-BD01	OFFICIAL EXHIBIT - INT033-00-BD01 - NON-PUBLIC - Saouma, V.E. and Hariri-Ardebili, M.A. (2014). A proposed aging management program for alkali silica reactions in a nuclear power plant. Nuclear Engineering and Design 277, pp. 248-264. (Copyrighted).	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19265A022	INT034-00-BD01	OFFICIAL EXHIBIT - INT034-00-BD01 - NON-PUBLIC - Poyet, et al. (2007). Chemical modelling of alkali silica reaction: influence of the reactive aggregate size distribution. Materials and Structures, 40(2), 229. Copyrighted).	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19265A023	INT035-00-BD01	OFFICIAL EXHIBIT - INT035-00-BD01 - NON-PUBLIC - Katayama, T. (2017). An Attempt to Estimate Past Expansion of Concrete Based on Petrographic Stage of ASR, Proc. 39th International Conference on Cement Microscopy, Canada, p. 217-236. (Copyrighted).	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19265A024	INT036-00-BD01	OFFICIAL EXHIBIT - INT036-00-BD01 - NON-PUBLIC - Fournier, et al. (2010). Report on the diagnosis, prognosis, and mitigation of Alkali-Silica Reaction (ASR) in transportation structures (No. FHWA-HIF-09-001) (Copyrighted).	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19265A025	INT037-00-BD01	OFFICIAL EXHIBIT - INT037-00-BD01 - NON-PUBLIC - Stark, D., & De Puy, G. W. (1987). Alkali-silica reaction in five dams in southwestern United States. ACI Special Publication, 100, 1759-1786. (Copyrighted).	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019

ADAMS Accession Number	Official Exhibit Number	ADAMS Document Title	Document Availability	Exhibit Status
ML19265A026	INT038-00-BD01	OFFICIAL EXHIBIT - INT038-00-BD01 - NON-PUBLIC - Thomas, M., et al. (2006). Test methods for evaluating preventive measures for controlling expansion due to alkali-silica reaction in concrete. Cement and Concrete Research, 36(10), 1842-1856.(Copyrighted).	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19265A027	INT039-00-BD01	OFFICIAL EXHIBIT - INT039-00-BD01 - NON-PUBLIC - J. Tcherner, T. Aziz (2009). Effects of AAR on Seismic Assessment of Nuclear Power Plants for Life Extensions; 20th Int'l Conference on Structural Mechanics in Reactor Technology (SMIRT 20), Espoo, . . .	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19265A010	INT040-00-BD01	OFFICIAL EXHIBIT - INT040-00-BD01 - NON-PUBLIC - P. Rivard and G. Ballivy (2005). "Assessment of the expansion related to alkali-silica reaction by the Damage Rating Index method". In: Construction and Building Materials 19. (Copyrighted).	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19265A011	INT041-00-BD01	OFFICIAL EXHIBIT - INT041-00-BD01 - NON-PUBLIC - Ulm, F. J., et al. (2000). Thermo-chemo-mechanics of ASR expansion in concrete structures. Journal of engineering mechanics, 126(3), 233-242. (Copyrighted).	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19265A012	INT042-00-BD01	OFFICIAL EXHIBIT - INT042-00-BD01 - NON-PUBLIC - Bentz, E. C. (2005). Empirical modeling of reinforced concrete shear strength size effect for members without stirrups. ACI structural journal, 102(2), 232. (Copyrighted).	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19265A013	INT043-00-BD01	OFFICIAL EXHIBIT - INT043-00-BD01 - NON-PUBLIC - Miyagawa, et al. (2006). Fracture of Reinforcing Steels in Concrete Structures Damaged by ASR-Field Survey, Mechanism and Maintenance; Journal of Advanced Concrete Technology, Vol. 4, No. 3, October 2006.	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19265A014	INT044-00-BD01	OFFICIAL EXHIBIT - INT044-00-BD01 - NON-PUBLIC - Kojima, T., et al. (2000) Maintenance of Highway Structures Affected by Alkali-Aggregate Reaction, Proc. of 11th Inter. Conf. on Alkali-Aggregate Reaction in Concrete, Quebec, pp.1159-1166. (Copyrighted).	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019

ADAMS Accession Number	Official Exhibit Number	ADAMS Document Title	Document Availability	Exhibit Status
ML19265A015	INT045-00-BD01	OFFICIAL EXHIBIT - INT045-00-BD01 - NON-PUBLIC - da Silva, G. and de Oliveira, A. (2008) Injection of Microcement in Pile Caps Cracked by Alkali Aggregate Reaction in the 13th International Conference on Alkali Aggregate Reaction Conference.	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19265A016	INT046-00-BD01	OFFICIAL EXHIBIT - INT046-00-BD01 - NON-PUBLIC - Hansen, E. J., & Saouma, V. E. (1999). Numerical simulation of reinforced concrete deterioration: Part 2-Steel corrosion and concrete cracking. ACI Materials Journal, 96, 331-338. (Copyrighted).	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19265A017	INT047-00-BD01	OFFICIAL EXHIBIT - INT047-00-BD01 - NON-PUBLIC - Geyskens, P., Kiureghian, A. D., & Monteiro, P. Bayesian. Prediction of Elastic Modulus of Concrete. Journal of Structural Engineering, 124(1), 89-95 (1998) (Copyrighted).	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19265A018	INT048-00-BD01	OFFICIAL EXHIBIT - INT048-00-BD01 - NON-PUBLIC - Hillerborg, et al. (1976). Analysis of crack formation and crack growth in concrete by means of fracture mechanics and finite elements. Cement and concrete research, 6(6), 773-781. (Copyrighted).	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A489	NER001-00-BD01	OFFICIAL EXHIBIT - NER001-00-BD01 - Testimony of NextEra Witnesses Michael Collins, John Simons, Christopher Bagley, Oguzhan Bayrak, and Edward Carley ("MPR Testimony").	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A490	NER002-00-BD01	OFFICIAL EXHIBIT - NER002-00-BD01 - MPR Testimony - Attachment 1 - Glossary.	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A525	NER003-00-BD01	OFFICIAL EXHIBIT - NER003-00-BD01 - NON-PUBLIC - MPR Testimony - Attachment 2 - Proprietary Appendix.	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A501	NER004-00-BD01	OFFICIAL EXHIBIT - NER004-00-BD01 - Testimony of NextEra Witnesses Said Bolourchi, Glenn Bell, and Matthew Sherman ("SGH Testimony").	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019

ADAMS Accession Number	Official Exhibit Number	ADAMS Document Title	Document Availability	Exhibit Status
ML19265A002	NER005-R3-00-BD01	OFFICIAL EXHIBIT - NER005-R3-00-BD01 - NextEra Exhibit List.	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A519	NER006-00-BD01	OFFICIAL EXHIBIT - NER006-00-BD01 - Michael Collins Biography.	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A526	NER007-00-BD01	OFFICIAL EXHIBIT - NER007-00-BD01 - NON-PUBLIC - Seabrook Structures Monitoring Program Manual, Rev. 7.	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A520	NER008-00-BD01	OFFICIAL EXHIBIT - NER008-00-BD01 - John Simons Curriculum Vitae.	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A521	NER009-00-BD01	OFFICIAL EXHIBIT - NER009-00-BD01 - Chris Bagley Curriculum Vitae.	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A522	NER010-00-BD01	OFFICIAL EXHIBIT - NER010-00-BD01 - Dr. Oguzhan Bayrak Curriculum Vitae.	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A523	NER011-00-BD01	OFFICIAL EXHIBIT - NER011-00-BD01 - Edward Carley Resume.	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A524	NER012-00-BD01	OFFICIAL EXHIBIT - NER012-00-BD01 - NON-PUBLIC - The Institution of Structural Engineers, "Structural Effects of Alkali-Silica Reaction" (July 1992) [Copyright].	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A491	NER013-00-BD01	OFFICIAL EXHIBIT - NER013-00-BD01 - U.S. Department of Transportation, Federal Highway Administration, "Report on the Diagnosis, Prognosis, and Mitigation of Alkali-Silica Reaction (ASR) in Transportation Structures" (FHWA-HIF-09-004) (Jan. 2010).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A492	NER014-00-BD01	OFFICIAL EXHIBIT - NER014-00-BD01 - NUREG-2191, "Generic Aging Lessons Learned for Subsequent License Renewal (GALL-SLR) Report," Vol. 2 (July 2017) [Cover and Section X.M1].	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019

ADAMS Accession Number	Official Exhibit Number	ADAMS Document Title	Document Availability	Exhibit Status
ML19206A047	NER015-00-BD01	OFFICIAL EXHIBIT - NER015-00-BD01 - NON-PUBLIC - MPR-3848, Rev. 0 "Seabrook Station, Approach for Shear and Reinforcement Anchorage Testing of Concrete Affected by Alkali-Silica Reaction" (Apr. 2013) (FP100818) [PROPRIETARY].	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A493	NER016-00-BD01	OFFICIAL EXHIBIT - NER016-00-BD01 - NON-PUBLIC - Allford, M., "Expansion Behavior of Reinforced Concrete Elements Due to Alkali-Silica Reaction" (Aug. 2016) [Copyright].	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A494	NER017-00-BD01	OFFICIAL EXHIBIT - NER017-00-BD01 - NON-PUBLIC - EPRI Report 3002013192, "Evaluation of Laboratory Tests to Detect Up-to-Date Expansion and Remaining Expansion in Concrete Structures Affected by Alkali-Silica Reaction" (Oct. 15, 2018) [Copyright].	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A495	NER018-00-BD01	OFFICIAL EXHIBIT - NER018-00-BD01 - MPR-3727, Rev. 1, "Seabrook Station: Impact of Alkali-Silica Reaction on Concrete Structures and Attachments" (Jan. 2014) and NextEra Supplements I-V Thereto (FP100716, Rev. 4).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A531	NER019-00-BD01	OFFICIAL EXHIBIT - NER019-00-BD01 - NON-PUBLIC - Bayrak, O., "Structural Implications of ASR; State of the Art" (Feb. 2, 2012) (FP100697).	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A532	NER020-00-BD01	OFFICIAL EXHIBIT - NER020-00-BD01 - NON-PUBLIC - MPR 0326-0062-88, Rev. 2, "Initial Expansion Assessment of ASR-Affected Reinforced Concrete Structures at Seabrook Station" (Mar. 2018) (FP101070, Rev. 1).	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A533	NER021-00-BD01	OFFICIAL EXHIBIT - NER021-00-BD01 - NON-PUBLIC - MPR-4231, Rev. 0, "Instrumentation for Measuring Expansion in Concrete Affected by Alkali-Silica Reaction" (Oct. 2015) (FP100972).	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19266A048	NER022-R-00-BD01	OFFICIAL EXHIBIT - NER022-R-00-BD01 - NON-PUBLIC - MPR-4262, "Shear and Reinforcement Anchorage Testing of Concrete Affected by Alkali-Silica Reaction," Vol. I, Rev. 1 (July 2016) & Vol. II, Rev. 0 (Jan. 2016) (FP100994).	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019

ADAMS Accession Number	Official Exhibit Number	ADAMS Document Title	Document Availability	Exhibit Status
ML19205A535	NER023-00-BD01	OFFICIAL EXHIBIT - NER023-00-BD01 - NON-PUBLIC - MPR-3722, Rev. 2, "Strength Testing of Anchors in Concrete Affected by Alkali-Silica Reaction" (Jan. 2016) (FP100718, Rev. 1) [Main Report & App. A].	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A536	NER024-00-BD01	OFFICIAL EXHIBIT - NER024-00-BD01 - NON-PUBLIC - MPR-4247, Rev. 0 "Commercial Grade Dedication Report for Seabrook ASR Anchor Testing (Block Series and Girder Series Phase 2)" (Dec. 2015) (FP100986) [Main Report & Apps. A & B].	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19265A005	NER025-R-00-BD01	OFFICIAL EXHIBIT - NER025-R-00-BD01 - NON-PUBLIC - MPR-4259, "Commercial Grade Dedication Report of Seabrook ASR Shear, Reinforcement Anchorage & Instrumentation Testing" (Jan. 2016) (Excerpt).	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A527	NER026-00-BD01	OFFICIAL EXHIBIT - NER026-00-BD01 - NON-PUBLIC - MPR-3757, Rev. 4, "Shear and Reinforcement Anchorage Test Specimen Technical Evaluation" (May 2014) (FP100760).	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A496	NER027-00-BD01	OFFICIAL EXHIBIT - NER027-00-BD01 - Saouma, V., "Benchmark Problems for AAR FEA Code Validation" (Aug. 4, 2017).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A497	NER028-00-BD01	OFFICIAL EXHIBIT - NER028-00-BD01 - SG&H Report 110594-RPT-02, Rev. 1, "Damage Rating Index and ASR Rating" (Feb. 10, 2012) (FP100702).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A498	NER029-00-BD01	OFFICIAL EXHIBIT - NER029-00-BD01 - NON-PUBLIC - EPRI Report 3002013190, "Modeling Concrete Structures Affected by Alkali Silica Reaction: Hydro-Quebec Approach for Hydraulic and Nuclear Power Plants" (Oct. 15, 2018) [Copyright].	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19206A040	NER030-00-BD01	OFFICIAL EXHIBIT - NER030-00-BD01 - NON-PUBLIC - Giannini, E., "Evaluation of Concrete Structures Affected by Alkali-Silica Reaction and Delayed Ettringite Formation" (2012) [Copyright].	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A500	NER031-00-BD01	OFFICIAL EXHIBIT - NER031-00-BD01 - Said Bolourchi Curriculum Vitae.	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019

ADAMS Accession Number	Official Exhibit Number	ADAMS Document Title	Document Availability	Exhibit Status
ML19205A502	NER032-00-BD01	OFFICIAL EXHIBIT - NER032-00-BD01 - Glenn Bell Curriculum Vitae.	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A503	NER033-00-BD01	OFFICIAL EXHIBIT - NER033-00-BD01 - Matthew Sherman Curriculum Vitae.	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A504	NER034-00-BD01	OFFICIAL EXHIBIT - NER034-00-BD01 - NON-PUBLIC - ASCE Standard ASCE/SEI 7-16, "Minimum Design Loads and Associated Criteria for Buildings and Other Structures" (2016) [Cover & Page 1] [Copyright].	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A505	NER035-00-BD01	OFFICIAL EXHIBIT - NER035-00-BD01 - U.S. Department of Commerce, National Bureau of Standards, NBS Special Publication 577, "Development of a Probability Based Load Criterion for American National Standard A58" (1980).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A506	NER036-00-BD01	OFFICIAL EXHIBIT - NER036-00-BD01 - NON-PUBLIC - ASCE Standard ASCE/SEI 4-16, "Seismic Analysis of Safety-Related Nuclear Structures" (2016) [Cover & Pages 9-11, 23] [Copyright].	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A507	NER037-00-BD01	OFFICIAL EXHIBIT - NER037-00-BD01 - NON-PUBLIC - Esposito, R., and Hendriks, M.A.N., "Literature Review of Modelling Approaches for ASR in Concrete: A New Perspective," EUROPEAN JOURNAL OF ENVTL. & CIVIL ENG'G (2017) [Copyright].	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A508	NER038-00-BD01	OFFICIAL EXHIBIT - NER038-00-BD01 - Gocevski, V., "Pathologies/Degradation Mechanisms Experienced by Hydro-Quebec During the Evaluation of Gentilly-2 NPP," Report Submitted to ASCET, (June 2015).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A509	NER039-00-BD01	OFFICIAL EXHIBIT - NER039-00-BD01 - NON-PUBLIC - Neville, A.M., "Properties of Concrete," 5th Edition, Pearson Education Limited; Harlow, Essex, England, 2012 [Cover Pages & Pages 426-27, 436-37, 444-45] [Copyright].	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019

ADAMS Accession Number	Official Exhibit Number	ADAMS Document Title	Document Availability	Exhibit Status
ML19205A510	NER040-00-BD01	OFFICIAL EXHIBIT - NER040-00-BD01 - NON-PUBLIC - J.J. Brooks, Accuracy of Estimating Long-Term Strains in Concrete, 36 Magazine of Concrete Research 127, 131-45 (June 1984) [Copyright].	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A511	NER041-00-BD01	OFFICIAL EXHIBIT - NER041-00-BD01 - NON-PUBLIC - Mijnsbergen, J. and Reinhardt, H. W., "Long-Time Creep and Expansion Behavior of Concrete in a Marine Environment," 109 American Concrete Institute Special Publication 599-624 (SP 109-27)(1994) [Copyright].	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A513	NER042-00-BD01	OFFICIAL EXHIBIT - NER042-00-BD01 - NON-PUBLIC - G.E. Troxell, et al., "Long-Time Creep and Shrinkage Tests of Plain and Reinforced Concrete," 1958 Proceeding of the American Society for Testing and Materials 1101-20 [Copyright].	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A514	NER043-00-BD01	OFFICIAL EXHIBIT - NER043-00-BD01 - NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR Edition" Chapter 3 - Design of Structures and Components, Equipment, and Systems 3.7.2, Rev. 4 (Sept. 2013).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A515	NER044-00-BD01	OFFICIAL EXHIBIT - NER044-00-BD01 - Seabrook Station Unit 1, Updated Final Safety Analysis Report (UFSAR) (Rev. 19) [2.5.2.5 only].	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A529	NER045-00-BD01	OFFICIAL EXHIBIT - NER045-00-BD01 - NON-PUBLIC - MPR-4286, Rev. 0, "Supplemental Commercial Grade Dedication Report for Seabrook ASR Test Programs" (Mar. 2016) (FP101003).	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A516	NER046-00-BD01	OFFICIAL EXHIBIT - NER046-00-BD01 - Seabrook Mechanical Maintenance Procedure MS0517.51, "Installation of Geokon Snap-Ring Borehole Extensometers," Rev. 0 (Feb. 2016) [Cover & Pages 13-19].	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A517	NER047-00-BD01	OFFICIAL EXHIBIT - NER047-00-BD01 - N. Ezell et al., "Experimental Collaboration for Thick Concrete Structures with Alkali-Silica Reaction" (2018).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019

ADAMS Accession Number	Official Exhibit Number	ADAMS Document Title	Document Availability	Exhibit Status
ML19205A518	NER048-00-BD01	OFFICIAL EXHIBIT - NER048-00-BD01 - L. Phan, "Structural Performance of NPP Concrete Structures Affected by Alkali-Silica Reaction (ASR)," Slides for NRC Regulatory Information Conference Session TH27 (2018).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19255K410	NER049-00-BD01	OFFICIAL EXHIBIT - NER049-00-BD01 - NON-PUBLIC - EPRI Report 3002007777, "Modeling Existing Concrete Containment Structures" (Aug. 2017) [Copyright].	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19262F141	NER050-00-BD01	OFFICIAL EXHIBIT - NER050-00-BD01 - Reineck et al., "Research Report: Extended Databases with Shear Tests on Structural Concrete Beams without and with Stirrups for the Assessment of Shear Design Procedures" (Mar. 2010).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19262H954	NER051-00-BD01	OFFICIAL EXHIBIT - NER051-00-BD01 - NON-PUBLIC - Reineck et al., "ACI-DAfStb Database of Shear Tests on Slender Reinforced Concrete Beams without Stirrups," 110-5 ACI Structural Journal 867 (Sept.-Oct. 2013) [Copy Right].	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19262F144	NER052-00-BD01	OFFICIAL EXHIBIT - NER052-00-BD01 - Clayton et al., "The Effects of Alkali-Silica Reaction on the Strength of Prestressed Concrete Beams," 68-15 The Structural Engineer 287 (Aug. 1990).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19262F147	NER053-00-BD01	OFFICIAL EXHIBIT - NER053-00-BD01 - Richart et al., "The Failure of Plain and Spirally Reinforced Concrete in Compression," University of Illinois Engineering Experiment Station, Bulletin No. 190 (Apr. 1929).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19262H957	NER054-00-BD01	OFFICIAL EXHIBIT - NER054-00-BD01 - NON-PUBLIC - Chana and Korobokis, "Structural Performance of Reinforced Concrete Affected by Alkali Silica Reaction: Phase 1" (Oct. 1990) [Cover Pages & 7.2] [Copyright].	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19262H971	NER055-00-BD01	OFFICIAL EXHIBIT - NER055-00-BD01 - NON-PUBLIC - MPR Document 0326-0058-157, "Overview of Anchor Testing Program in Concrete Affected by Alkali-Silica Reaction," (Feb. 26, 2013).	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019

ADAMS Accession Number	Official Exhibit Number	ADAMS Document Title	Document Availability	Exhibit Status
ML19262F151	NER056-00-BD01	OFFICIAL EXHIBIT - NER056-00-BD01 - NUREG-1800, Rev. 2, "Standard Review Plan for Review of License Renewal Applications for Nuclear Power Plants" (Dec. 2010) [Cover Pages & App. A A.1].	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19262F154	NER057-00-BD01	OFFICIAL EXHIBIT - NER057-00-BD01 - Oak Ridge National Laboratory, "In-Service Inspection Guidelines for Concrete Structures in Nuclear Power Plants" (Dec. 1995).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19262H975	NER058-00-BD01	OFFICIAL EXHIBIT - NER058-00-BD01 - NON-PUBLIC - D. Wald, "ASR Expansion Behavior in Reinforced Concrete - Experimentation and Nuclear Modeling for Practical Application" (Aug. 2017) [Copyright].	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19262F157	NER059-00-BD01	OFFICIAL EXHIBIT - NER059-00-BD01 - RILEM Technical Committee 259-ISR, "Benchmark Problems for AAR FEA Code Validation" (Aug. 4, 2017).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19262H978	NER060-00-BD01	OFFICIAL EXHIBIT - NER060-00-BD01 - NON-PUBLIC - Manabe et al., "Maintenance Management of Turbine Generator Foundation Affected by Alkali-Silica Reaction," 14 Journal of Advanced Concrete Technology 590 (Sept. 2016) [Copyright].	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19262H982	NER061-00-BD01	OFFICIAL EXHIBIT - NER061-00-BD01 - NON-PUBLIC - Somerville, Management of Deteriorating Concrete Structures (2008) [Cover & Pages 111, 155-164, 206-208] [Copyright].	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19262F160	NER062-00-BD01	OFFICIAL EXHIBIT - NER062-00-BD01 - Transcript, Advisory Committee on Reactor Safeguards, License Renewal Subcommittee (Oct. 31, 2018) [Cover & Pages 101-102].	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19262H985	NER063-00-BD01	OFFICIAL EXHIBIT - NER063-00-BD01 - NON-PUBLIC - Mohammed et al., "Alkali-Silica Reaction-Induced Strains over Concrete Surface and Steel Bars in Concrete," 100 ACI Materials Journal 133 (Mar.-Apr. 2003) [Copyright].	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019

ADAMS Accession Number	Official Exhibit Number	ADAMS Document Title	Document Availability	Exhibit Status
ML19262F163	NER064-00-BD01	OFFICIAL EXHIBIT - NER064-00-BD01 - Mohammed et al., "ASR Expansion of Concrete Beams with Various Restrained Conditions - 612 Days of Accelerated Marine Exposure," Proceedings of the 12th Int'l Conf. on Alkali-Aggregate Reaction in Concrete 1169 (2004).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19262H989	NER065-00-BD01	OFFICIAL EXHIBIT - NER065-00-BD01 - NON-PUBLIC - Bazant and Steffens, "Mathematical Model for Kinetics of Alkali-Silica Reaction in Concrete," 30 Cement and Concrete Research 419 (2000) [Copyright].	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19262F130	NER066-00-BD01	OFFICIAL EXHIBIT - NER066-00-BD01 - Dunant and Scrivener, "Micro-Mechanical Modelling of Alkali-Silica-Reaction-Induced Degradation Using The AMIE Framework," 40 Cement and Concrete Research 4, 517-25 (2010).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19262F133	NER067-00-BD01	OFFICIAL EXHIBIT - NER067-00-BD01 - Charlwood, "A Review of Alkali Aggregate Reaction in Hydro Plants and Dams," 1 Int'l Journal on Hydropower & Dams 3, 73-80 (May 1994).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19262H992	NER068-00-BD01	OFFICIAL EXHIBIT - NER068-00-BD01 - NON-PUBLIC - Cope et al., "Prediction of Stress Distributions in Reinforced Concrete Members Affected by Alkali Aggregate Reaction" (1994)[Copyright].	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19262H997	NER069-00-BD01	OFFICIAL EXHIBIT - NER069-00-BD01 - NON-PUBLIC - Fairbarin et al., "Modeling the Structural Behavior of a Dam Affected by Alkali-Silica Reaction," 22 Communications in Numerical Methods of Eng'g 1 (July 14, 2005)[Copyright].	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19262H959	NER070-00-BD01	OFFICIAL EXHIBIT - NER070-00-BD01 - NON-PUBLIC - Grimal et al., "Creep, Shrinkage, and Anisotropic Damage in Alkali-Aggregate Reaction Swelling Mechanism Part I: A Constitutive Model," 105-3 ACI Materials Journal 227 (May-June 2008) [Copy Right].	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19262H960	NER071-00-BD01	OFFICIAL EXHIBIT - NER071-00-BD01 - NON-PUBLIC - Comi and Perego, "Anisotropic Damage Model for Concrete Affected by Alkali-Aggregate Reaction," 20 Int'l Journal of Damage Mechanics 598 (May 2011) [COPYRIGHT].	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019

ADAMS Accession Number	Official Exhibit Number	ADAMS Document Title	Document Availability	Exhibit Status
ML19262H964	NER072-00-BD01	OFFICIAL EXHIBIT - NER072-00-BD01 - NON-PUBLIC - Saouma and Perotti, "Constitutive Model for Alkali-Aggregate Reactions," 103 ACI Materials Journal 194 (May-June 2006) [Copyright].	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19262H965	NER073-00-BD01	OFFICIAL EXHIBIT - NER073-00-BD01 - NON-PUBLIC - Pan et al., "Modeling of alkali-silica Reaction in Concrete: a Review," 6 Frontiers of Structural and Civil Eng'g 1 (2012) [Copyright].	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19262H969	NER074-00-BD01	OFFICIAL EXHIBIT - NER074-00-BD01 - NON-PUBLIC - Jurcut, "Modelling of Alkali-Aggregate Reaction Effects in Reinforced Concrete Structures" (2015) [COPYRIGHT].	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19262F137	NER075-00-BD01	OFFICIAL EXHIBIT - NER075-00-BD01 - Swiss Committee on Dams, "Concrete Swelling of Dams in Switzerland" (May 8, 2017).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19265A003	NER076-00-BD01	OFFICIAL EXHIBIT - NER076-00-BD01 - NON-PUBLIC - Testimony of NextEra Witnesses John Simons, Christopher Bagley, Oguzhan Bayrak, and Edward Carley in Response to Exhibit INT030 [PROPRIETARY].	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19261A762	NRC001-R-00-BD01	OFFICIAL EXHIBIT - NRC001-R-00-BD01 - Staff Testimony.	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A345	NRC002-00-BD01	OFFICIAL EXHIBIT - NRC002-00-BD01 - Statement of Professional Qualifications of Angela Buford.	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A346	NRC003-00-BD01	OFFICIAL EXHIBIT - NRC003-00-BD01 - Statement of Professional Qualifications of Bryce Lehman.	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A347	NRC004-00-BD01	OFFICIAL EXHIBIT - NRC004-00-BD01 - Statement of Professional Qualifications of George Thomas.	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A348	NRC005-00-BD01	OFFICIAL EXHIBIT - NRC005-00-BD01 - Jacob Phillip Testimony.	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019

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ML19205A349	NRC006-00-BD01	OFFICIAL EXHIBIT - NRC006-00-BD01 - Statement of Professional Qualifications of Jacob Phillip.	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A350	NRC007-00-BD01	OFFICIAL EXHIBIT - NRC007-00-BD01 - Seabrook Station Updated Final Safety Analysis Report (UFSAR), Chapter 3, "Design of Structures, Components, Equipment and Systems," Revision 18 (October 2017).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A352	NRC008-00-BD01	OFFICIAL EXHIBIT - NRC008-00-BD01 - MPR-4273, Revision 0, "Seabrook Station - Implications of Large-Scale Test Program Results on Reinforced Concrete Affected by Alkali-Silica Reaction," (July 2016).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A469	NRC009-00-BD01	OFFICIAL EXHIBIT - NRC009-00-BD01 - NON-PUBLIC - 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).	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A356	NRC010-00-BD01	OFFICIAL EXHIBIT - NRC010-00-BD01 - Letter from Ralph A. Dodds III, NextEra, to NRC DCD, "Seabrook Station, Supplement to License Amendment Request 16-03, Revise Current Licensing Basis to Adopt a Methodology for the Analysis of . . ." (Sept. 30, 2016).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A357	NRC011-00-BD01	OFFICIAL EXHIBIT - NRC011-00-BD01 - 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).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A470	NRC012-00-BD01	OFFICIAL EXHIBIT - NRC012-00-BD01 - NON-PUBLIC - 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).	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019

ADAMS Accession Number	Official Exhibit Number	ADAMS Document Title	Document Availability	Exhibit Status
ML19205A358	NRC013-00-BD01	OFFICIAL EXHIBIT - NRC013-00-BD01 - 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 ASR," (Oct. 3, 2017).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A359	NRC014-00-BD01	OFFICIAL EXHIBIT - NRC014-00-BD01 - Letter from Eric McCartney, NextEra, to NRC Document Control Desk, "Seabrook Station, Response to Request for Additional Information Regarding License Amendment Request Related to ASR," (Dec. 11, 2017).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A360	NRC015-00-BD01	OFFICIAL EXHIBIT - NRC015-00-BD01 - 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).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A361	NRC016-00-BD01	OFFICIAL EXHIBIT - NRC016-00-BD01 - Letter from Eric McCartney, NextEra, to NRC Document Control Desk, "Seabrook Station Revised Structures Monitoring Aging Management Program," (May 18, 2018).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A362	NRC017-00-BD01	OFFICIAL EXHIBIT - NRC017-00-BD01 - 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).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A363	NRC018-00-BD01	OFFICIAL EXHIBIT - NRC018-00-BD01 - Seabrook ASR-Monitoring Program Audit Report, Enclosure to Dec. 17, 2015 Letter to NextEra.	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A364	NRC019-00-BD01	OFFICIAL EXHIBIT - NRC019-00-BD01 - Confirmatory Action Letter, Seabrook Station, Unit 1 - Information Related to Concrete Degradation Issues, at 1 (May 16, 2012).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019

ADAMS Accession Number	Official Exhibit Number	ADAMS Document Title	Document Availability	Exhibit Status
ML19205A365	NRC020-00-BD01	OFFICIAL EXHIBIT - NRC020-00-BD01 - 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).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A369	NRC021-00-BD01	OFFICIAL EXHIBIT - NRC021-00-BD01 - Letter from Arthur L. Burritt, NRC, to Paul Freeman, NextEra, "Seabrook Station, Unit 1 - NRC Integrated Inspection Report 05000443/2011002" (May 12, 2011).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A370	NRC022-00-BD01	OFFICIAL EXHIBIT - NRC022-00-BD01 - Letter from Richard J. Conte, NRC, to Paul Freeman, NextEra, "NextEra Energy Seabrook - NRC License Renewal Inspection Report 05000443/2011007" (May 23, 2011).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A372	NRC023-00-BD01	OFFICIAL EXHIBIT - NRC023-00-BD01 - Letter from Arthur L. Burritt, NRC, to Paul Freeman, NextEra, Seabrook Station, Unit No. 1 - NRC Integrated Inspection Report 05000443/2011003 (Aug. 12, 2011).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A373	NRC024-00-BD01	OFFICIAL EXHIBIT - NRC024-00-BD01 - Letter from Christopher G. Miller, NRC, to Paul Freeman, NextEra, Seabrook - NRC Inspection Report 05000443/2011010 Related to Alkali-Silica Reaction Issue In Safety Related Structures (Mar. 26, 2012).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A374	NRC025-00-BD01	OFFICIAL EXHIBIT - NRC025-00-BD01 - Ltr. C. Miller NRC, to K. Walsh NextEra, "Seabrook Station, Unit No. 1 – Confirmatory Action Ltr. Follow-up Inspect. - NRC Inspection Rrpt. 05000443/2012009, Encl., Inspect. Rprt. No. 0500044312012009" (Dec. 3, 2012).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A375	NRC026-00-BD01	OFFICIAL EXHIBIT - NRC026-00-BD01 - 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," at 1 (Aug. 9, 2013).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A376	NRC027-00-BD01	OFFICIAL EXHIBIT - NRC027-00-BD01 - Letter from Glenn T. Dentel, NRC, to Kevin Walsh, NextEra, "Seabrook Station, Unit No. 1 - NRC Integrated Inspection Report 05000443/2013005," (Jan. 30, 2014).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019

ADAMS Accession Number	Official Exhibit Number	ADAMS Document Title	Document Availability	Exhibit Status
ML19205A377	NRC028-00-BD01	OFFICIAL EXHIBIT - NRC028-00-BD01 - Letter from Glenn T. Dentel, NRC, to Kevin Walsh, NextEra, "Seabrook Station, Unit No. 1 - NRC Integrated Inspection Report 05000443/2014002," (May 6, 2014).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A378	NRC029-00-BD01	OFFICIAL EXHIBIT - NRC029-00-BD01 - Letter from Glenn T. Dentel, NRC, to Dean Curtland, NextEra, "Seabrook Station, Unit No. 1 - NRC Integrated Inspection Report 05000443/2014003," (Aug. 5, 2014).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A379	NRC030-00-BD01	OFFICIAL EXHIBIT - NRC030-00-BD01 - Letter from Glenn T. Dentel, NRC, to Dean Curtland, NextEra, "Seabrook Station, Unit No. 1 - NRC Integrated Inspection Report 05000443/2014005," (Feb. 6, 2015).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A387	NRC031-00-BD01	OFFICIAL EXHIBIT - NRC031-00-BD01 - Letter from Glenn T. Dentel, NRC, to Dean Curtland, NextEra, "Seabrook Station, Unit No. 1 - NRC Integrated Inspection Report 05000443/2015002," (Aug. 5, 2015).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A388	NRC032-00-BD01	OFFICIAL EXHIBIT - NRC032-00-BD01 - 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 . . . No. 07200063/2015001" (Feb. 12, 2016).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A398	NRC033-00-BD01	OFFICIAL EXHIBIT - NRC033-00-BD01 - Letter from Mel Gray, NRC, to Dean Curtland, NextEra, "Seabrook Station, "Seabrook Station - Inspection Report 05000443/2016008 Related to ASR Affects On Safety-Related Concrete Structures And . . . (May 6, 2016).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A399	NRC034-00-BD01	OFFICIAL EXHIBIT - NRC034-00-BD01 - Letter from to Eric McCartney, NextEra, "Seabrook Station, Unit No. 1 - Integrated Inspection Report 05000443/2016002," (Aug. 5, 2016).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A400	NRC035-00-BD01	OFFICIAL EXHIBIT - NRC035-00-BD01 - Letter from Fred L. Bower, III, NRC, to Eric McCartney, NextEra, "Seabrook Station, Unit No. 1 - Integrated Inspection Report 05000443/2016004," (Feb. 8, 2017).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019

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ML19205A401	NRC036-00-BD01	OFFICIAL EXHIBIT - NRC036-00-BD01 - 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).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A402	NRC037-00-BD01	OFFICIAL EXHIBIT - NRC037-00-BD01 - 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).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A403	NRC038-00-BD01	OFFICIAL EXHIBIT - NRC038-00-BD01 - 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).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A404	NRC039-00-BD01	OFFICIAL EXHIBIT - NRC039-00-BD01 - Letter from Mel Gray, III, NRC, to Mano Nazar, NextEra, "Seabrook Station, Unit No. 1 - Integrated Inspection Report 05000443/2018011," (Aug. 10, 2018).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A405	NRC040-00-BD01	OFFICIAL EXHIBIT - NRC040-00-BD01 - Letter from Fred L. Bower, NRC, to Mano Nazar, NextEra, "Seabrook Station, Unit No. 1 - Integrated Inspection Report 05000443/2018003," (Nov. 13, 2018).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A389	NRC041-00-BD01	OFFICIAL EXHIBIT - NRC041-00-BD01 - 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).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A390	NRC042-00-BD01	OFFICIAL EXHIBIT - NRC042-00-BD01 - 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).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019

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ML19205A391	NRC043-00-BD01	OFFICIAL EXHIBIT - NRC043-00-BD01 - Letter from Justin C. Poole, NRC, to Mano Nazar, NextEra, Seabrook Station, Unit No. 1 - Site Visit Report Regarding Regulatory Audit for License Amendment. . . (CAC No. MF8260; EPID L- 2016-LLA-0007)" (July 26, 2017).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A392	NRC044-00-BD01	OFFICIAL EXHIBIT - NRC044-00-BD01 - Letter from Justin C. Poole, NRC, to Mano Nazar, NextEra, "Seabrook Station, Unit No. 1 - Site Visit Report Regarding Regulatory Audit for License Amendment. . . (CAC No. MF8260; EPID L- 2016-LLA-0007)" (May 21, 2018).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A393	NRC045-00-BD01	OFFICIAL EXHIBIT - NRC045-00-BD01 - Memorandum from Eric J. Leeds, NRR, and William M. Dean, Region 1, Seabrook Alkali-Silica Reaction Issue Technical Team Charter (July 9, 2012).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A394	NRC046-00-BD01	OFFICIAL EXHIBIT - NRC046-00-BD01 - Summary of August 24, 2017, Meeting with NextEra Energy Regarding License Amendment Request on Alkali Silica Reaction (CAC No. MF8260; EPID l-2016-lla-0007) (Oct. 13, 2017).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A395	NRC047-00-BD01	OFFICIAL EXHIBIT - NRC047-00-BD01 - Memorandum from James G. Danna, NRC, to Andrea D. Veil, NRC ACRS, "Seabrook Station, Unit No. 1 - Submission of ASR License Amendment Request Draft Safety . . . (CAC No. MF8260; EPID L-2016-LLA-0007)" (Sept. 28, 2018).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A396	NRC048-00-BD01	OFFICIAL EXHIBIT - NRC048-00-BD01 - Letter from Michael Corradini, Chairman, ACRS, to Kristine L. Svinicki, Chairman, NRC, "Seabrook Station Unit 1 License Renewal Application: Review of Licensee Program Addressing ASR," (Dec. 14, 2018).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A479	NRC049-00-BD01	OFFICIAL EXHIBIT - NRC049-00-BD01 - NON-PUBLIC - American Concrete Institute (ACI) Standard 318-71, Building Code Requirements for Reinforced Concrete (1971).	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019

ADAMS Accession Number	Official Exhibit Number	ADAMS Document Title	Document Availability	Exhibit Status
ML19205A480	NRC050-00-BD01	OFFICIAL EXHIBIT - NRC050-00-BD01 - NON-PUBLIC - Section III, Division 2, of the 1975 Edition of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code) for Containment.	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A481	NRC051-00-BD01	OFFICIAL EXHIBIT - NRC051-00-BD01 - NON-PUBLIC - Report of ACI-ASCE (American Society of Civil Engineers) Committee 326, "Shear and Diagonal Tension" (1962).	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A482	NRC052-00-BD01	OFFICIAL EXHIBIT - NRC052-00-BD01 - NON-PUBLIC - ACI 408R-03, "Bond and Development of Straight Reinforcing Bars in Tension" (effective Sept. 24, 2003) (reapproved 2012).	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A427	NRC053-00-BD01	OFFICIAL EXHIBIT - NRC053-00-BD01 - Letter from Pub. Ser. Co. of N. H. to NRC Region I, IE re: Response to NRC IE Bulletin 79-02, "Pipe Support Base Plate Designs Using Concrete Expansion Anchor Bolts," Rev. 2, Nov. 8, 1979 (Jan 3. 1980).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A428	NRC054-00-BD01	OFFICIAL EXHIBIT - NRC054-00-BD01 - NUREG/CR-5563, "A Technical Basis for Revision to Anchorage Criteria," March 1999.	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A483	NRC055-00-BD01	OFFICIAL EXHIBIT - NRC055-00-BD01 - NON-PUBLIC - ACI 349, "Code Requirements for Nuclear Safety-Related Concrete Structures and Commentary" 2013.	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A484	NRC056-00-BD01	OFFICIAL EXHIBIT - NRC056-00-BD01 - NON-PUBLIC - 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) (online May 31, 2018).	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A485	NRC057-00-BD01	OFFICIAL EXHIBIT - NRC057-00-BD01 - NON-PUBLIC - M. Kathleen Eck Olave, et. al., "Performance of RC Columns Affected by ASR. II: Experiments in Assessment," Vol. 20, ASCE J. of Bridge Eng'g (March 2015) (published online June 12, 2014).	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019

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ML19205A486	NRC058-00-BD01	OFFICIAL EXHIBIT - NRC058-00-BD01 - NON-PUBLIC - F. Habibi, et. al., "AAR in Nucl. Concrete Structures: Pt. 3: Structural Shear Wall Elements," Transact's, 23rd Conf. Structural Mech's Reactor Tech. (SMiRT-23), UK, Aug. 10-14, 2015, Div. I, Paper ID 044.	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A471	NRC059-00-BD01	OFFICIAL EXHIBIT - NRC059-00-BD01 - NON-PUBLIC - ACI 349.3R, "Evaluation of Existing Nuclear Safety-Related Concrete Structures" (2002) (Reapproved 2010).	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A432	NRC060-00-BD01	OFFICIAL EXHIBIT - NRC060-00-BD01 - NRC Information Notice 2011-20: Concrete Degradation by Alkali-Silica Reaction (Nov. 18, 2011).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A433	NRC061-00-BD01	OFFICIAL EXHIBIT - NRC061-00-BD01 - Standard Review Plan for Review of Subsequent License Renewal Applications for Nuclear Power Plants" (Final Report), NUREG-2192 (July 2017).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A434	NRC062-00-BD01	OFFICIAL EXHIBIT - NRC062-00-BD01 - Interagency Agreement between NRC and NIST (Mar. 31, 2014).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A435	NRC063-00-BD01	OFFICIAL EXHIBIT - NRC063-00-BD01 - Grant and Cooperative Agreement between NRC and Northwestern University (Sept. 30, 2014).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A436	NRC064-00-BD01	OFFICIAL EXHIBIT - NRC064-00-BD01 - Sherry Bernhoft, 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).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A472	NRC065-00-BD01	OFFICIAL EXHIBIT - NRC065-00-BD01 - NON-PUBLIC - 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).	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019

ADAMS Accession Number	Official Exhibit Number	ADAMS Document Title	Document Availability	Exhibit Status
ML19205A439	NRC066-00-BD01	OFFICIAL EXHIBIT - NRC066-00-BD01 - 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).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A429	NRC067-00-BD01	OFFICIAL EXHIBIT - NRC067-00-BD01 - Organisation for Economic Cooperation 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).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A430	NRC068-00-BD01	OFFICIAL EXHIBIT - NRC068-00-BD01 - 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).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A431	NRC069-00-BD01	OFFICIAL EXHIBIT - NRC069-00-BD01 - IRSN, ODOBA Research programs, (last update Aug. 2018), https://www.irsn.fr/EN/Research/Research-organisation/Research-programmes/Odoba-project/Pages/ODOBA.	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19206A039	NRC070-00-BD01	OFFICIAL EXHIBIT - NRC070-00-BD01 - "Research Activities FY 2018-2020," NUREG-1925, Rev. 4 (Mar. 2018).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A438	NRC071-00-BD01	OFFICIAL EXHIBIT - NRC071-00-BD01 - NUREG/CR-7153, "Expanded Materials Degradation Assessment (EMDA), Volume 4: Aging of Concrete and Civil Structures" (Oct. 2014).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19261B304	NRC072-R-00-BD01	OFFICIAL EXHIBIT - NRC072-R-00-BD01 - NON-PUBLIC - R. Park and T. Paulay, "Reinforced Concrete Structures" (John Wiley & Sons, Inc. 1975).	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A474	NRC073-00-BD01	OFFICIAL EXHIBIT - NRC073-00-BD01 - NON-PUBLIC - David Darwin, Charles W. Dolan, and Arthur H. Nilson, "Design of Concrete Structures" (McGraw Hill, Inc., 15th Ed. 2016).	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019

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ML19205A475	NRC074-00-BD01	OFFICIAL EXHIBIT - NRC074-00-BD01 - NON-PUBLIC - Stephane Multon, et. al., "Flexural Strength of Beams Affected by ASR," 12th International Conference on Alkali-Aggregate Reaction, Beijing, China (2004).	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A441	NRC075-00-BD01	OFFICIAL EXHIBIT - NRC075-00-BD01 - 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 . . . (August 2009).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A476	NRC076-00-BD01	OFFICIAL EXHIBIT - NRC076-00-BD01 - NON-PUBLIC - Canadian Standards Association (CSA) A864-00, "Guide to the Evaluation and Management of Concrete Structures Affected by Alkali-Aggregate Reaction" (Feb. 2000) (Reaffirmed 2005).	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A477	NRC077-00-BD01	OFFICIAL EXHIBIT - NRC077-00-BD01 - NON-PUBLIC - 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).	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A442	NRC078-00-BD01	OFFICIAL EXHIBIT - NRC078-00-BD01 - Letter from Paul O. Freeman, NextEra, to NRC, "Seabrook Station Response to Confirmatory Action Letter," (May 24, 2012).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A445	NRC079-00-BD01	OFFICIAL EXHIBIT - NRC079-00-BD01 - Enclosure 2 to SBK-L-12106, "The Evaluation, Impact of ASR on Concrete Structures and Attachments," (May 2012) (Interim Structural Assessment).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A446	NRC080-00-BD01	OFFICIAL EXHIBIT - NRC080-00-BD01 - Memorandum from John G. Lamb, NRC, to Meena Khanna, NRC, Forthcoming Meeting with NextEra Energy Seabrook, LLC (NextEra) Regarding Seabrook Station Concrete Degradation (Mar. 23, 2012).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A447	NRC081-00-BD01	OFFICIAL EXHIBIT - NRC081-00-BD01 - Letter from Paul O. Freeman, NextEra, to NRC, "Seabrook Station Actions for Resolution of Alkali Silica Reaction (ASR) Issues," (May 3, 2012).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019

ADAMS Accession Number	Official Exhibit Number	ADAMS Document Title	Document Availability	Exhibit Status
ML19205A448	NRC082-00-BD01	OFFICIAL EXHIBIT - NRC082-00-BD01 - Letter from Paul O. Freeman, NextEra, to NRC, "Seabrook Station Actions for Resolution of Alkali Silica Reaction (ASR) Issues," (May 10, 2012).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A449	NRC083-00-BD01	OFFICIAL EXHIBIT - NRC083-00-BD01 - 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 ASR Issue at Seabrook," (Sept. 5, 2012).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A450	NRC084-00-BD01	OFFICIAL EXHIBIT - NRC084-00-BD01 - 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).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A451	NRC085-00-BD01	OFFICIAL EXHIBIT - NRC085-00-BD01 - Letter from William M. Dean, NRC, Kevin Walsh, NextEra, "Closure of Confirmatory Action Letter 1-12-002, Seabrook Station, Unit 1" (Oct. 9, 2013).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A452	NRC086-00-BD01	OFFICIAL EXHIBIT - NRC086-00-BD01 - Letter from Darrell J. Roberts, NRC, to Kevin Walsh, NextEra, "Mid-cycle Performance Review and Inspection Plan Seabrook Station, Unit 1 (Report 05000443/2013006)," (Sept. 3, 2013).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A443	NRC087-00-BD01	OFFICIAL EXHIBIT - NRC087-00-BD01 - Email from Justin Poole, NRC, to Kenneth Browne, NextEra, "Audit Plan Regarding Seabrook ASR License Amendment Review" (Jan. 13, 2017).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A444	NRC088-00-BD01	OFFICIAL EXHIBIT - NRC088-00-BD01 - Regulatory Guide (RG) 1.29, Seismic Design Classification for Nuclear Power Plants (July 2016).	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019
ML19205A478	NRC089-00-BD01	OFFICIAL EXHIBIT - NRC089-00-BD01 - NON-PUBLIC - Enclosure 1 to Original LAR, NextEra Energy Seabrook's Evaluation of the Proposed Change Including Attachment 1 Markup of UFSAR Pages.	Non-Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019

ADAMS Accession Number	Official Exhibit Number	ADAMS Document Title	Document Availability	Exhibit Status
ML19263D360	NRC090-00-BD01	OFFICIAL EXHIBIT - NRC090-00-BD01 - Staff Testimony in Response to Exhibit INT030.	Publicly Available	IDENTIFIED on 09/24/2019 ADMITTED on 09/24/2019

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of	)	
	)	
NEXTERA ENERGY SEABROOK, LLC	)	Docket No. 50-443-LA-2
(Seabrook Station, Unit 1)	)	
	)	
(License Amendment)	)	

CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing **ORDER (Adopting Transcript Corrections, Transcript Redactions, and Final Exhibit List)** have been served upon the following persons by Electronic Information Exchange.

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[Original signed by Clara Sola]
Office of the Secretary of the Commission

Dated at Rockville, Maryland,
this 29th day of October 2019.