

THE STATE OF NEW HAMPSHIRE
NUCLEAR DECOMMISSIONING FINANCING COMMITTEE
DOCKET NO. NDFC 2015-1

PRELIMINARY REPORT AND ORDER

Concord, New Hampshire
November 18, 2015

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- 1 4) The decommissioning cost escalation adjustment applied to the schedules of
2 payments will be determined at the public hearing to be held in Seabrook, N.H. The
3 rate will be either 3.5% or 3.85%.
- 4 5) The funding date will be 2030 for purposes of calculating the funding schedule for
5 2016.
- 6 6) The inflation adjustment applied to the schedules of payments will be 3%.
- 7 7) The assumed rates of return on the Trust and Escrow funds shall be as follows:
 - 8 a. Equities = 8.5%
 - 9 b. Bonds = 6.0%
 - 10 c. Cash and cash equivalents (long-term) = 3.5%
 - 11 d. Escrow = 0.25%
 - 12 e. Opportunistic Strategy asset class (“Opportunistic Fund”) = 7.5%
- 13 8) The coverage ratio, as defined in the Docket 2005-1 Final Report and Order, shall
14 continue to be maintained with cash, cash equivalent, and high quality fixed income
15 investments at least 3.3 times the total expenses to be paid from the Decommissioning
16 Trust in the following year during the first seven years of prompt dismantlement.
- 17 9) The funding assurances from each Joint Owner of Seabrook Station (Seabrook
18 Owner) will remain unchanged.
- 19 10) The funds available from NextEra Energy Capital Holdings to NextEra Energy
20 Seabrook under the terms of the Support Agreement shall be reduced from \$287.9
21 million to \$282.9 million as a result of operational efficiencies achieved since the last
22 calculation in Docket 2011-1.

- 1 11) Contributions required to be made to the Seabrook Station decommissioning
2 financing fund shall be made to the Escrow in 2016.
- 3 12) The schedules of payments shall be calculated assuming that all funds held in the
4 Escrow for NextEra Energy Seabrook, Hudson, and Taunton are refunded to the
5 respective Owner in 2016. The schedules of payments shall be calculated assuming
6 that all funds held in Escrow for MMWEC are transferred to the Trust in 2016. The
7 final decision regarding the disposition of funds held in Escrow will be determined by
8 the Committee at its sole discretion.
- 9 13) For purposes of determining the adequacy of decommissioning funding assurances,
10 the earliest date by which decommissioning shall be assumed to start in the event of a
11 premature cessation of operations shall be no later than five years from the date of the
12 announcement of the cessation of operations.
- 13 14) In the event of a permanent cessation of operations as a result of an accident causing
14 damage covered under the Nuclear Electric Insurance Limited property damage
15 policy, insurance proceeds remaining after the stabilization and decontamination of
16 the reactor and site, in accordance with NRC regulations, shall be applied to any
17 shortfall between the funds available in the Trust and the cost of decommissioning as
18 determined by the post-shutdown decommissioning activities report (PSDAR). The
19 NDFC continues to require the Managing Agent to provide at least 30 days' notice to
20 the NDFC before any reduction in this insurance is effective.
- 21 15) The schedules of payments beginning in 2016 shall be calculated in accordance with
22 this order as supplemented and/or revised by the Final Report and Order to be issued
23 following the public hearing in the Town of Seabrook.

1 Any additional written information that the parties may elect to place on the record
2 with respect to these matters must be submitted to the Committee by December 4, 2015.
3 These determinations are discussed in detail in this Preliminary Report and Order.

4 **II. PARTIES AND THEIR POSITIONS**

5 In NDFC Order No. 1, issued July 15, 2015, the NDFC granted full party status to
6 NextEra Energy Seabrook (“NextEra Energy” or “Managing Agent”) and the
7 Massachusetts Municipal Wholesale Electric Company (“MMWEC”) and recognized
8 NextEra Energy Seabrook, in its capacity as Managing Agent, as the representative of
9 Taunton Municipal Lighting Plant (“Taunton”), and the Hudson Light and Power
10 Department (“Hudson”) with the right of full participation at their choosing. The full
11 parties produced a Stipulation of the Full Parties (“Stipulation”) (Exhibit 2) presenting
12 the positions of the full parties on issues that the Committee must address and the
13 exhibits that the full parties would present at a public hearing held pursuant to RSA 162-
14 F:21 in Concord, New Hampshire on October 27, 2015 (“Concord Hearing”). The
15 Stipulation was signed and received at the Concord hearing on that date. The Managing
16 Agent represented that it accurately stated the positions of each Seabrook Owner.

17 **III. PROCEDURAL HISTORY**

18 The Order of Notice for this docket was issued on May 14, 2015. Timely notice
19 of the Docket was provided to the public by publication in newspapers. On May 19,
20 2015, NextEra filed the Seabrook Station 2015 Comprehensive Report. NextEra
21 arranged for a copy of the 2015 Comprehensive Report to be available for public review
22 at the Seabrook Public Library. Included with the Comprehensive Report was the 2015
23 Seabrook Station Decommissioning Cost Analysis (“TLG Cost Report”) and the

1 Escalation Analysis for the Seabrook Station 2014 Decommissioning Cost Estimate
2 (“TLG Escalation Analysis”) prepared by TLG Services, Inc.; the Seabrook Station
3 Decommissioning Financing Fund Review of Funding Schedule and Investment
4 Assumptions (“LCG Report”); the Non-Confidential Escalation Forecast Explanation
5 Report by IHS Global Insight (“IHS Report”); and the Joint Owner Proposed Funding
6 Schedule. The first pre-hearing conference was held on June 13, 2015, during which the
7 parties agreed to a proposed procedural schedule and docket scope. NDFC Counsel
8 submitted a set of data requests to the Managing Agent at the pre-hearing conference
9 which were subsequently delivered and submitted as Exhibit 18 at the Concord Hearing.

10 On July 15, 2015, the NDFC issued Order No. 1, adopting the proposed
11 procedural schedule and scope. The parties participated in several additional pre-hearing
12 conferences prior to the public hearings, and submitted the Stipulation of the Full Parties,
13 at the Concord Hearing during which: William Cloutier, Manager of Decommissioning
14 Services for TLG Services, Inc., testified about the TLG Cost and Escalation Analyses
15 Edward Carley, NextEra Energy Seabrook Engineering Supervisor for License Renewal
16 adopted the affidavit of Michael Ossing, NextEra Energy Seabrook Licensing Manager,
17 and provided testimony regarding Seabrook Station’s operating performance and the
18 status of the license renewal application; John Mothersole, IHS Global Insight (“IHS”),
19 provided testimony on the forecasting indices provided by his company that TLG then
20 used in its decommissioning cost escalation analysis; Alan Smith, NextEra Energy
21 Seabrook Business Director, provided testimony on the financial strength and stability of
22 NextEra Energy and in support of NextEra’s request that a portion of its share of the
23 Escrow be released; and David Emerson, Senior Vice President and Principal at LCG

1 Associates, the Seabrook decommissioning Trust Investment Consultant, provided
2 testimony regarding the assumed rates of return on Trust and Escrow investments and in
3 support of increasing the assumed rate of return on equities from 8.5% to 9.5%;

4 The following individuals did not appear at the public hearing but provided
5 affidavits in support of the Stipulation of the parties as described below:

6 Matthew Ide, Treasurer and Director of Treasury and Commodities for
7 Massachusetts Municipal Wholesale Electric Company (“MMWEC”) submitted an
8 affidavit regarding the adequacy of MMWEC’s financial assurances, its targeted
9 investment allocations, and in support of continuing to direct its annual contributions to
10 the Escrow. His affidavit opposed the release of any Escrow funds to any owner and
11 NextEra’s request to the Committee that the assumed rate of return on equity investments
12 be increased and also carried forward its position from the NDFC 2002-2 docket that the
13 Committee should impose further funding assurances requirements on NextEra Energy.
14 (Exhibit 13)

15 Brian Choquette, General Manager for the Hudson Light and Power Company
16 (“Hudson”), submitted an affidavit regarding the adequacy of Hudson’s funding
17 assurances. (Exhibit 14)

18 Ken Goulart, General Manager for the Taunton Municipal Lighting Plant
19 (“Taunton”), submitted an affidavit regarding the adequacy of Taunton’s funding
20 assurance. (Exhibit 15)

21 The exhibits accepted or marked for identification at the hearing were:

1
2

**Chart 1
Hearing Exhibits**

Exhibit Number	Description
By Full Parties	
1	2015 Comprehensive Report and all attachments referenced therein
2	TLG Decommissioning Cost Analysis assuming 2030 and 2050 Plant shutdown dates
3	Stipulation of the Full Parties
4	Proposed Schedule of Payments*
5	Affidavit of Michael Ossing
6	Affidavit of Alan Smith
7	Affidavit of David Emerson, LCG Associates, Inc.
8	Affidavit of William Cloutier, TLG Services
9	Affidavit of John Mothersole, I Global Insight
10	Funding Run summary reflecting current NDFC assumptions *
11	Audit of Trust
12	Audit of Escrow
13	Affidavit of Matthew Ide
14	Affidavit of Brian Choquette
15	Affidavit of Ken Goulart
16	Illustration of scope of decommissioning
17	CONFIDENTIAL Affidavit of Alan Smith with calculation of Support Agreement amount
By Committee Counsel	
18	NextEra Responses to Data Requests
19	Comparison of Seabrook Assumed Investment Return Assumptions with State Pension Funds**
By Full Parties	
21	Opportunistic Fund: Total Seabrook Lending Portfolio as of 9/30/15

3
4
5

* Based on balances as of August 31, 2015

** Accepted by Committee subject to corrections to be re-submitted at Seabrook hearing.

6
7

During the Seabrook hearing, two hearing requests were made of the Managing Agent. Exhibit numbers have been reserved for the responses as follows:

1

**Chart 2
Hearing Requests**

Exhibit Number (Hearing Request)	Description
20	2010 SAFSTOR estimate for Seabrook Station
22	Provide a summary of the NISA Survey information

2 **IV. DISCUSSION**

3 **A. Introduction**

4 The Committee conducts a comprehensive review of the decommissioning cost
5 projections for Seabrook Station every four years as mandated by RSA 162-F:22, I,
6 consisting of a full review of the revised decommissioning cost estimate and its inputs as
7 well as the annual review of the investment performance of the Trust. (RSA 162-F:22,
8 II). The Committee reviewed the decommissioning estimate for a funding date of 2030
9 based on the current NRC Operating License and, at the request of NextEra, an estimate
10 for a funding date of 2050¹ that assumes NRC approval of license renewal. The 2030
11 estimate will be used as the basis for the Committee's decisions in this docket. If the
12 NRC grants license renewal to Seabrook before the end of 2016, the projected cost of
13 decommissioning for a funding date of 2050 shall be considered to be \$1,029,918,000 in
14 2014 dollars without further review in the 2017 docket. This will preclude the need for
15 another decommissioning cost study prior to the next comprehensive review if the longer
16 operating life is approved. In addition to the estimate, the NDFC reviewed the

¹ In Docket NDFC 2014-1, NextEra Energy informed the Committee that it would complete two decommissioning studies for the 2015 comprehensive review: one that assumes the operating license terminates in 2030 and one that assumes license renewal is approved and the license terminates in 2050. NextEra Energy further requested that the Committee review both the 2030 and 2050 decommissioning plans during the NDFC 2015-1 docket, even if the NRC had not yet reached a decision on extension of the operating license. In a letter dated September 11, 2014, the NRC informed NextEra Energy Seabrook that it has scheduled its decision on the application for license renewal for September 2016, assuming timely and adequate responses to staff Requests for Additional Information (RAIs) and the staff's determination that the proposed activities to manage the effects of aging due to ASR comply with regulatory requirements.

1 assumptions used in determining the ultimate cost of decommissioning Seabrook Station
2 and establishing the schedules of payments such as funding date, escalation rate, inflation
3 rate, the rates of return on Trust and Escrow investments, and the allocations of the Trust
4 investments. The Committee also assessed the set of funding assurances that secure
5 unfunded obligations to determine whether any changes were appropriate. Although not
6 a funding assurance, the Managing Agent presented a re-calculation of the Support
7 Agreement for Committee review in accordance with the requirements of NDFC 2002-1.

8 The Committee also received testimony regarding the status of the Alkali Silica
9 Reaction (ASR) which is affecting concrete at Seabrook Station; potential governmental
10 and commercial alternatives to the long term storage of Spent Nuclear Fuel (SNF) and
11 Greater Than Class C nuclear waste; and options available for the disposal of
12 decommissioning generated Low Level Radioactive Waste.

13 Since the last comprehensive review in 2011, Entergy's Vermont Yankee ("VY")
14 and Southern California Edison's San Onofre Nuclear Generating Station Units 2 & 3
15 ("SONGS 2 & 3") have been permanently shut down and the owners have submitted
16 decommissioning cost estimates and planning documents to the NRC. These estimates
17 are of particular interest to the Committee because of VY's proximity to Seabrook and
18 the fact that the SONGS units are of similar size in terms of power output and reactor
19 type to Seabrook (pressurized water reactor). As a result, the Committee staff submitted
20 data requests to the Managing Agent about these estimates and how they compare to the
21 Seabrook Station's estimate and planning assumptions. Committee staff also asked
22 NextEra to compare TLG's pre-decommissioning estimates for the Maine Yankee and
23 Rancho Seco nuclear plants with the actual costs incurred. The responses were factored

1 into the review of the proposed Seabrook cost estimate. The Committee also reviewed
 2 information that it requested and received regarding the impact of the 2011 Fukushima
 3 accident on the Seabrook decommissioning cost estimate and funding schedule.

4 The Joint Owners have requested three changes to the assumptions underlying the
 5 decommissioning cost estimate: NextEra Energy, Taunton, and Hudson ask that the
 6 assumed rate of return for equities be increased from 8.5% to 9.5%; all Joint Owners ask
 7 that the escalation rate be reduced from 3.85% to 3.5%; and NextEra requests that the
 8 Committee release all but \$10 million of its share of the Escrow funds. These requests
 9 are addressed below.

10 Chart 3 depicts the impact of changing escalation, rate of return for equities and
 11 the cost estimate by various amounts based on Trust balances as of August 31, 2015. It
 12 will be referred to as needed in the discussions of the Committee’s review of these
 13 parameters that follow.

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 15
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Chart 3
Impact of Changing Input Parameters
 (\$ in millions)

	1	2	3	4
	NDFC 2014-1 (Run 4)	Proposed (Run 1)	Escalation As Proposed (Run 7)	ROR As Proposed (Run 8)
Cost	\$1,119	\$1,119	\$1,119	\$1,119
Funding Date	2030	2030	2030	2030
Equities ROR	8.5%	9.5%	8.5%	9.5%
Fixed Income ROR	6.0%	6.00%	6.00%	6.00%
Opportunistic ROR	7.50%	7.50%	7.50%	7.50%
Escrow ROR	0.25%	0.25%	0.25%	0.25%
Blended Rate ²	7.74%	8.38%	7.73%	8.37%
Escalation	3.85%	3.50%	3.50%	3.85%
Inflation	3.0%	3.0%	3.0%	3.0%
Equity return in 2016	Owners	Owners	Owners	Owners
Contributions:				
2015	\$559,100	\$559,100	\$559,100	\$559,100

² Blended rate is based on NextEra and MMWEC ownership shares with NextEra at 65% equities, 25% fixed income and 10% Opportunistic; MMWEC at 55% equities and 45% fixed income

1 Two additional funds (1C and 4), not shown above, are cash vehicles that will be
2 used in the years immediately before decommissioning commences. Funds 1A and 1B
3 are “qualified” funds, so their earnings receive a favorable tax rate that, by law, is set at
4 20%. Nonqualified fund earnings flow through to the owner and are taxed at the
5 corporate federal tax rate of 35% plus any applicable state tax. The three municipal
6 Seabrook Owners do not invest in the qualified funds because they are not subject to
7 taxes. NextEra has investments in both funds. The funding model assumes a 0% tax rate
8 on NextEra’s nonqualified funds because taxes on the Trust earnings are paid outside of
9 the Trust. The Investment Guidelines dictate the limiting percentage that individual
10 owner portfolios may have in each Fund. The total balance of the Trust plus Escrow
11 increased by \$49.0 million or 8.4% from year-end 2013 to year-end 2014 primarily from
12 growth since the only contribution was \$750,000 from MMWEC³. The large increase in
13 Fund 3 was due to a reallocation of some equity funds to stay within the State Treasurer’s
14 investment guidelines.

15 The New Hampshire decommissioning statutes require that sufficient funding
16 assurance be provided not only to ensure payment of the full decommissioning cost at the
17 end of the plant’s licensed life but also in the event of a premature cessation of
18 operations. RSA 162-F:19, IV. In NDFC 2007-1, the Committee approved the owners’
19 request to change the earliest date by which decommissioning is assumed to begin from
20 2015 to 2020 based on the fact that the plant’s performance made premature
21 decommissioning increasingly unlikely. NDFC 2007-1 FRO at 35. The Committee
22 changed this in 2012 from a fixed date to 10 years from the date of the approved

³ As of September 30, 2015, the Trust and Escrow balances were \$578.3 and \$31.5 million, respectively.

1 schedules of payments or 2025 in this docket. NDFC 2012-1 FRO at 3. Recognizing that
2 there have now been permanent shutdowns of plants primarily for economic reasons and
3 that it would not be necessary to wait ten years from a decision to permanently shutdown
4 to begin dismantlement, the Committee requires that for purposes of determining the
5 adequacy of decommissioning funding assurances, the earliest date by which
6 decommissioning shall be assumed to start in the event of a premature cessation of
7 operation shall be no later than five years from the date of the announcement of the
8 cessation of operation. If such an announcement were made this year, the funding
9 schedule that is based on current NDFC-approved assumptions projects that in five years,
10 or by 2020, the Trust would be 59% fully funded. Although about 69% of the funds are
11 scheduled to be spent within the first ten years after shutdown under the DECON
12 scenario, growth of the fund and the mandated parental funding assurances provide a high
13 degree of confidence that there would be sufficient resources to begin prompt
14 dismantlement of the plant after a two to three year planning period, as well as maintain
15 the spent fuel in dry storage until 2101, and then complete the decommissioning of the
16 ISFSI. These funds would also be supported by the funding assurances discussed in
17 Section IV.L below.

18 **C. Stipulation**

19 The parties presented the Committee with a Stipulation that provided a
20 comprehensive summary and discussion of the positions of each of the parties on the
21 issues to be addressed in this docket. They agreed unanimously on the following points:

- 22 ■ The Committee should approve the TLG estimate of \$1,118,610,000 in December
23 31, 2014 dollars based upon commencement of decommissioning in 2030, storage

1 of spent nuclear fuel and GTCC waste at the site until 2100, and the final
2 dismantlement of the ISFSI by 2101;

3 ▪ In the event that the NRC authorizes license renewal and extends the expiration of
4 the operating license until 2050, the estimated cost to decommission Seabrook
5 Station should be \$1,029, 918,000 in December 31, 2014 dollars;

6 ▪ The funding date should remain at 2030;

7 ▪ Earnings assumptions for the bond funds (Funds 1A, 2 and 3) should remain
8 at 6%;

9 ▪ The Trust allocation targets including the $\pm 3\%$ bandwidth target remain
10 appropriate;

11 ▪ The decommissioning period liquidity coverage ratio should remain at 3.3;

12 ▪ All required 2016 contributions should be made to the Escrow;

13 ▪ The recalculated Support Agreement should be reduced to \$282.9 million from its
14 current value of \$287.9 million;

15 ▪ The funding schedule should assume that the Department of Energy (DOE) takes
16 receipt of the first nuclear fuel from Seabrook Station in 2077 and completely
17 removes the spent nuclear fuel and Greater-Than-Class-C waste by 2101;

18 ▪ Core inflation should remain at 3.0%; and,

19 ▪ Decommissioning escalation should be reduced from the present value of 3.85%
20 to 3.50%.

21 NextEra, Hudson, and Taunton requested that the assumed rate of return of 7.5%
22 on the Opportunistic fund not be changed, while MMWEC, which has previously stated
23 that this fund introduces an unwarranted level of risk into the portfolio (NDFC 2012-1

1 Stipulation at 8), took no position. There was disagreement among the parties on the
2 issue of the release of Escrow funds, the adequacy of the funding assurances, and the
3 assumed rate of return on Trust funds invested in equities. NextEra proposed that all but
4 \$10 million of the funds held in the Escrow for NextEra be returned to the Company.
5 Neither Taunton nor Hudson objects. MMWEC, however, maintains that the NextEra
6 business model is inherently risky and that release of any Escrow funds from any owner
7 at this time weakens the funding assurances (Exhibit 13 at 5) and that any consideration
8 of such a request should be deferred until the docket following issuance of a renewed
9 operating license, as the NDFC has already stated as its intent. (NDFC 2014 FRO ¶13)
10 All of the parties, except MMWEC, stipulate that the funding assurances contained in
11 NDFC Docket 2002-2 remain adequate to ensure that NextEra meets its share of the cost
12 to decommission the plant. MMWEC continues to maintain its position with respect to
13 the NextEra Energy funding assurances as enunciated in the Stipulation to NDFC Docket
14 2002-1. MMWEC also takes exception to the request by NextEra Energy, Taunton, and
15 Hudson that the Committee increase the equity return assumption from 8.5% to its prior
16 level of 9.5%. MMWEC recommends that the Committee retain the 8.5% equity return
17 assumption.

18 **D. Projected Cost of Decommissioning**

19 Since this was the comprehensive review year, TLG Services provided a revised
20 analysis of the decommissioning cost estimate using the same methodology as in past
21 estimates. The estimate has increased from \$985.2 million as calculated in the previous
22 2011 cost analysis to \$1,119 million in the 2015 cost analysis. This equates to an annual
23 rate of increase of about 3.2%, less than the approved assumed escalation rate of 3.85%

1 and the proposed escalation rate of 3.5% but more than the 2.58% escalation rate that the
2 2015 TLG Escalation Analysis projects going forward..

3 Decommissioning estimates are divided into three basic components by the NRC
4 and the nuclear industry. License Termination (“LT”) costs are those required to meet
5 the NRC’s criteria to reduce radiological contamination sufficiently to release the site for
6 unrestricted use. EPA regulations apply to any non-radiological soil or water
7 contamination. Spent Fuel Management (“SFM”) costs are those required to store the last
8 operational load of nuclear fuel in the spent fuel storage pool for the required cooling
9 time (typically 5-6 years), transfer it to dry storage at the ISFSI, safeguard all the spent
10 fuel stored in the ISFSI until DOE takes receipt, and finally decommission and dismantle
11 the ISFSI. Site Restoration (“SR”) costs are those necessary to restore the site to the
12 condition required by state authorities beyond what is necessary for radiological
13 unrestricted use. For New Hampshire, this condition is the Commercial-Industrial
14 Standard which recognizes that certain buildings, structures, and physical features of the
15 operating station will provide value to the site after final shutdown and are therefore
16 retained for future development.

17 Since the last update in 2010, Vermont Yankee ceased operations and is being
18 decommissioned through the SAFSTOR⁴ method, and Southern California Edison’s San
19 Onofre Nuclear Generating Stations Units 2 & 3 have shut down and are being
20 decommissioned thorough DECON⁵ or prompt dismantlement, as will be the case for

⁴ Under SAFSTOR, often considered "deferred dismantling," a nuclear facility is maintained and monitored in a condition that allows the radioactivity to decay for up to 60 years; afterwards, the plant is dismantled and the property decontaminated.

⁵ Under DECON (immediate dismantling), soon after the nuclear facility closes, equipment, structures, and portions of the facility containing radioactive contaminants are removed or decontaminated to a level that permits release of the property and termination of the NRC license.

1 Seabrook. These projects provide the Committee with an opportunity to compare the
 2 Seabrook estimate with the detailed estimates that a plant develops when
 3 decommissioning is imminent. Charts 5 and 6 provide some basic information about the
 4 four plants and compare their respective decommissioning costs.

5 **Chart 5**
 6 **Seabrook, Vermont Yankee and SONGS Plant Data**

	Reactor Type	MWe (Electrical Output)	Year Licensed	Year Ceased Operations	Decom Estimator
Seabrook	PWR	1246	1990	NA	TLG
VY	BWR	620	1972	2014	TLG
SONGS 2	PWR	1127	1983	2012	EnergySolutions
SONGS 3	PWR	1127	1984	2012	EnergySolutions

7 **Chart 6**
 8 **Seabrook, Vermont Yankee and SONGS Decommissioning Cost Estimates**

	SEABROOK	VY	SONGS 2	SONGS 3
License Termination	647,542,000	817,219,000	1,034,230,000	1,078,016,000
Spent Fuel Management	419,504,000	368,347,000	623,209,000	652,987,000
Site Restoration	51,564,000	57,145,000	423,297,000	599,507,000
TOTALS	1,118,610,000	1,242,712,000	2,080,735,000	2,330,511,000

9 Any comparison must focus on the LT costs since the SR costs and, to a lesser
 10 extent, the SFM costs are site-specific. As shown in Charts 5 and 6, VY's LT cost
 11 estimate is higher than that of Seabrook (~29%) even though VY is a much smaller plant.
 12 The Stipulation states that there are two primary reasons for this: 1) Seabrook is a
 13 pressurized water reactor (PWR) while VY is a Boiling Water Reactor (BWR); and 2)
 14 the Seabrook estimate is based on DECON while VY will use SAFSTOR.

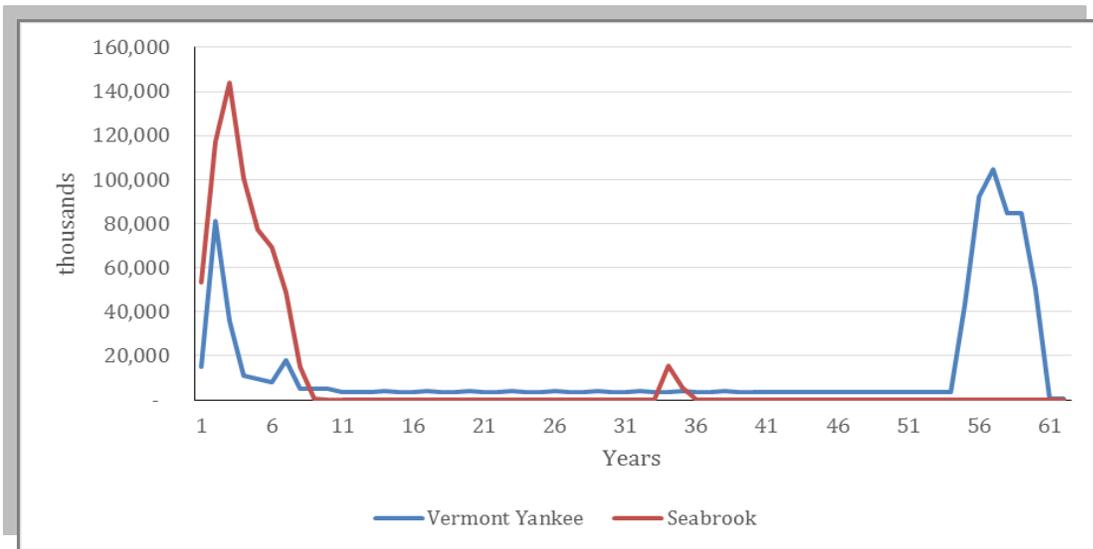
1 In a BWR, reactor coolant is converted to steam inside the reactor vessel which
2 then flows outside the containment into the Main Turbine in the Turbine building. By
3 design, therefore, the Main Turbine, connected pumps and piping, and other components
4 are radiologically contaminated. In a PWR, the reactor coolant stays liquid under
5 pressure, flows through heat exchanger (steam generator) tubes to heat feedwater that
6 flashes to steam and then flows outside containment to the Main Turbine. The reactor
7 coolant does not leave the containment in a PWR. As a result, radiological contamination
8 is lower in a PWR than in a BWR where radiological contamination extends into the
9 Turbine Building. The Stipulation points to the NRC's Standard Review Plan for
10 Decommissioning Cost Estimates for Nuclear Power Reactors that indicates that waste
11 burial costs and volumes, reflective of the level of contamination, are 83% higher for a
12 BWR than for a similarly sized PWR and that the total decommissioning costs for the
13 BWR are 43% higher.

14 The other major difference between the Seabrook and VY estimates is the method
15 of decommissioning. Because VY will undergo SAFSTOR, Entergy must mobilize staff
16 to prepare it for the period of dormancy and then mobilize a second time many years later
17 to plan and execute the dismantling of the plant. While both plants will maintain an
18 ISFSI where the spent fuel is stored until DOE takes receipt of it, VY will also have large
19 radiologically contaminated structures remaining on site until they are dismantled at the
20 end of the dormancy period, requiring prolonged periods of a surveillance and security
21 program. At the end of the dormancy period, VY will have to remobilize and re-
22 characterize the site, and re-initiate planning for decommissioning once more without the

1 experience and institutional knowledge of the operating staff. This will incur significant
 2 additional labor costs as shown graphically in the figures below. Exhibit 8 at 3.

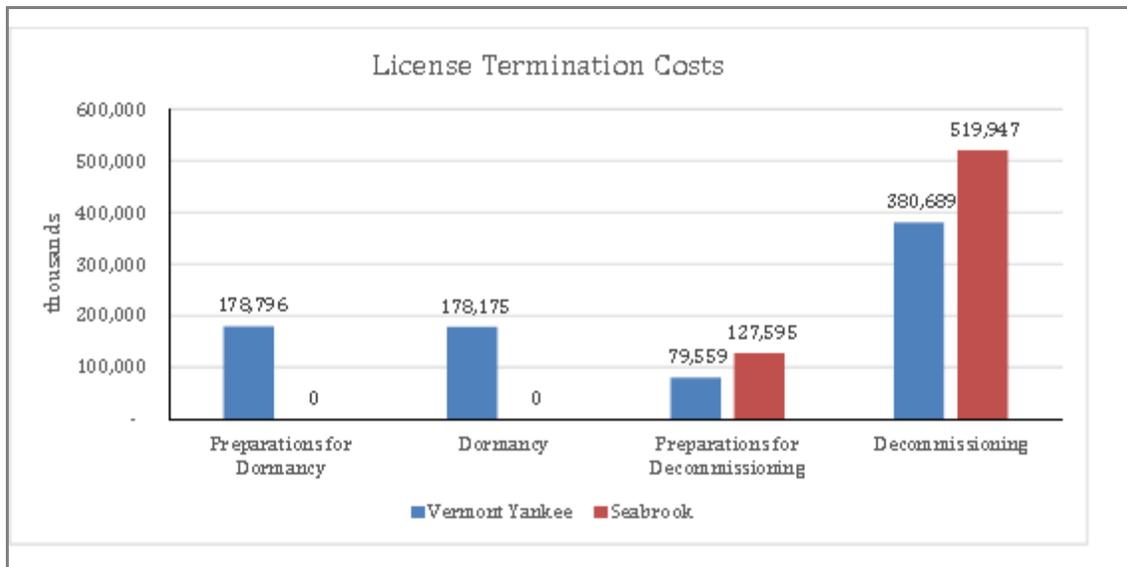
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Figure 1
License Termination Cash Flow



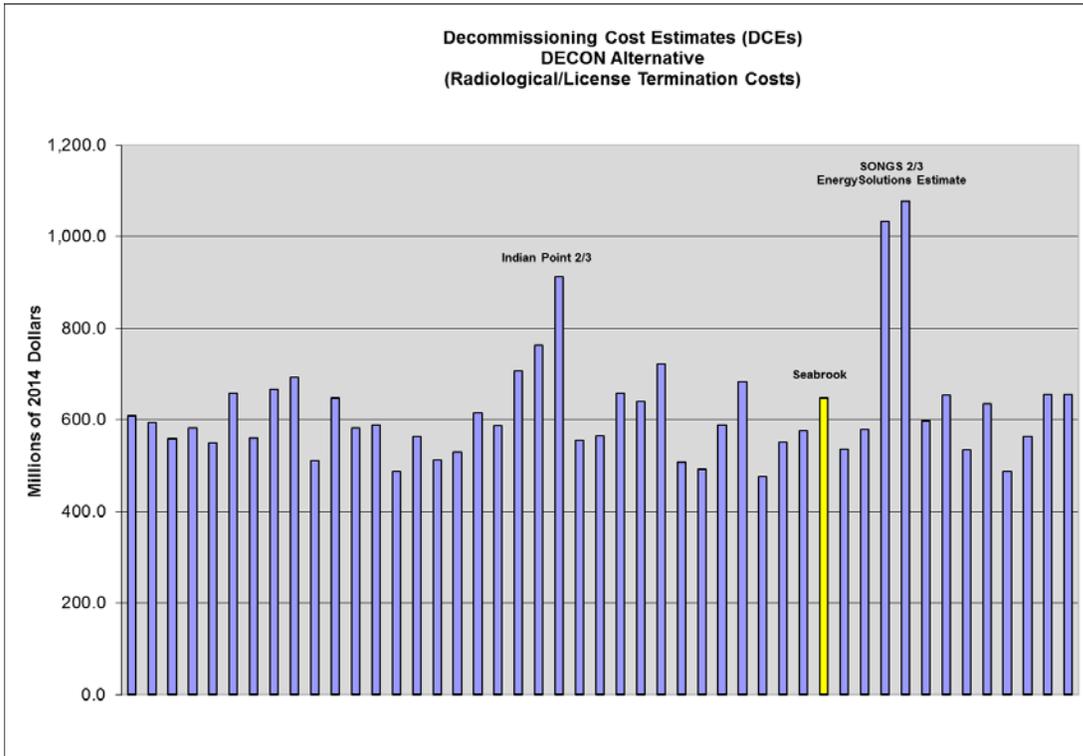
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Figure 2
License Termination Costs



1 TLG did not conduct the SONGS 2 & 3 decommissioning estimates and has not
2 analyzed them. Based on information in the public record, however, NextEra states that
3 the primary differences between the estimates is in staffing and durations for reactor
4 internals segmentation, plant systems, and large component removal. The Stipulation
5 also notes that the SONGS estimates apply a flat contingency to all activities, while
6 Seabrook applies different contingencies to specific activities. Finally, the following
7 figure was submitted to provide perspective to the SONGS costs estimates when
8 compared to other estimates for PWR's greater than 1000 Megawatt Electrical (MWe)
9 like Seabrook Station.

10 **Figure 3**
11 **Cost Estimates for PWRs Greater Than 1000 MWe**
12 (MWe = electrical output of a power station)



1 Figure 3 highlights that the SONGS 2 & 3 estimates are well above all others
2 except Indian Point 2 & 3 which are higher, according to the Stipulation, as a result of
3 extensive soil contamination and site restoration requirements related to site specific and
4 legacy contaminated soil. As additional evidence that the SONGS 2 & 3 estimates are
5 outliers, in his testimony Mr. Cloutier's asserted that EnergySolutions, the author of the
6 SONGS estimates, has provided a fixed price bid to decommission the two Zion nuclear
7 units for less than \$1 billion in total. Exhibit 8 at 7-8.

8 In the case of Maine Yankee, the TLG pre-decommissioning cost estimates turned
9 out to be close to the actual costs. After MY shut down prematurely in 1997, TLG
10 estimated that it would cost \$343.3 million to decommission with the DECON method.
11 Six months before the license was terminated in 2005, with decommissioning nearly
12 complete, MY reported decommission expenditures of \$405 million to the NRC. This
13 represents a modest 2.4% annual growth in the original estimate, well within the
14 currently approved Seabrook decommissioning escalation rate of 3.85%.

15 Rancho Seco was shut down prematurely in 1989 as a result of a referendum
16 following 24 years of operation. The owners initially planned to utilize the SAFSTOR
17 method. However, in 1999, its majority owner and operator, Sacramento Municipal
18 Utility District ("SMUD"), elected to promptly dismantle the plant. Like MY, SMUD
19 relied on the TLG estimate as its baseline for reporting decommissioning costs to the
20 NRC. TLG's 1999 DECON estimate was \$458 million. In 2010, approximately 6
21 months after a majority of the plant was released from the operating license and
22 decommissioning was essentially complete except for onsite storage of spent fuel, SMUD

1 reported to the NRC that the total cost was \$503.9 million in 2009 dollars representing an
2 annual increase of less than 1% over the original 1999 estimate.

3 TLG develops pre-shutdown decommissioning cost estimates in a conservative
4 manner that incorporates cost elements which admittedly may exceed those associated
5 with the actual plan to decommission. They are designed, however, to provide flexibility
6 in how the project is actually performed by making conservative assumptions with
7 appropriate contingency provisions. As a result, the pre-shutdown estimates should
8 encompass the actual costs. This has been borne out in the cases of Maine Yankee and
9 Rancho Seco. The Committee is concerned over the fact that the each of the SONGS unit
10 estimates for License Termination is almost 60% higher for DECON than the similarly
11 sized Seabrook Station and that an analysis has not been presented to explain this large
12 difference. This concern, however, is ameliorated by the following factors: 1) TLG's
13 expertise, reputation and experience in the nuclear industry; 2) the fact that the TLG
14 estimates closely matched the actual costs for the now-completed MY and Rancho Seco
15 plants; 3) the consistency between the Seabrook and VY estimates when adjusted for the
16 different types of plants and decommissioning planned; and 4) the opportunity to monitor
17 those costs through the public filings required by the NRC and make adjustments if
18 necessary during the annual reviews. For these reasons, the TLG estimate for
19 decommissioning Seabrook Station of \$1,118,610,000 (December 31, 2014 dollars) is
20 approved for establishing the schedules of payment with a funding date of 2030

21 The TLG estimate for a 2050 funding date is \$1,029,918 in year-end 2014 dollars.
22 The relatively small decrease from the 2030 funding date is due to the fact that if the
23 plant operates until 2050, the IFSI costs will be allocated to decommissioning for 20

1 fewer years. The Committee will allow the owners to use this estimate without further
2 review in the 2017 docket if the NRC approves the license renewal application before the
3 end of 2016.

4 **E. Funding Date**

5 The Funding Date is when the Trust shall have sufficient monies to complete
6 decommissioning under the schedule approved by the NDFC. (RSA 162-F: 14. V). The
7 schedules of payments are calculated using the funding date to establish the full term of
8 payments. In Docket 2003-1, the Committee designated the NRC operating license
9 expiration date as the funding date. (Docket 2003-1 Final Report and Order at 14). Since
10 that time, Seabrook Station’s regulatory⁶ and operational performance has continued to
11 be strong as evidenced by the recent completion of two consecutive “breaker-to-breaker”⁷
12 runs, the Committee finds no reason to believe that Seabrook Station will not operate for
13 the full period of its current licensed life. The funding date should, therefore, continue to
14 coincide with the current operating license expiration date of 2030. The Committee also
15 reviewed a decommissioning cost estimate based on approval of the license renewal
16 application and a funding date of 2050. If the NRC extends license expiration to 2050
17 before December 31, 2016, the funding date shall be changed to 2050 in calculating the
18 funding schedule for 2017.

19 **F. Escalation**

20 Escalation is the rate at which the cost to decommission is assumed to increase
21 from year to year. It is derived by separating the individual cost components of

⁶ Seabrook Station received the highest rating from the New Hampshire Department of Environmental Services in 2014 and remains in the NRC’s “License Response” column which means that as a result of performance, it requires no additional inspection scrutiny beyond the norm.

⁷ “Breaker-to-breaker” means that a plant has operated at full power from the completion of one refueling outage to the commencement of the next without any planned or unplanned outages or power reductions.

1 decommissioning into categories of labor, materials, energy, LLRW disposal, and “other”
2 for expenses that do not fit neatly elsewhere. Escalation indices are then applied to these
3 components, and a weighted average composite escalation rate is derived for the
4 decommissioning cost as a whole. In Seabrook Station’s decommissioning funding
5 schedule, the “Target Cost” for each funding year is then increased by this rate. The
6 Target Cost for a given future year, therefore, is an approximate cost of decommissioning
7 in that year’s dollars. It is only approximate in that the timing of shutdown will impact
8 some decommissioning cost components such as the amount of spent nuclear fuel stored
9 in the ISFSI or the level of radiological contamination of certain structures and
10 components. The ratio of the trust balance to the Target Cost at any given time is a
11 barometer of the progress that is being made toward full funding.

12 In the NDFC Docket 2011-1, the Committee lowered the escalation rate from
13 4.2% to 3.85%. NextEra has now requested a further reduction based on the TLG
14 Escalation Analysis (Attachment F to Exhibit 1) which concludes that decommissioning
15 costs are expected to increase annually by only 2.58% going forward including the
16 remaining duration of the operating life and through the decommissioning period. The
17 Joint Owners, however, only seek what they describe as a modest reduction to 3.5%.
18 The TLG Escalation Analysis was supported by a report from IHS. (Attachment G to
19 Exhibit 1).

20 TLG’s qualifications in the area of calculating escalation rates were examined and
21 accepted previously by the Committee. (Docket 2007-1 Final Report and Order at 19).
22 The TLG approach complies with NRC requirements (10 CFR 50.75) in that the cost
23 elements are categorized as either labor, equipment/material, energy, low level

1 radioactive waste (“LLRW”) disposal, and “other” for items not otherwise categorized.
 2 IHS developed the indices and approved the appropriateness of their use in the TLG
 3 calculation. IHS qualifications to forecast pricing conditions are presented in its report.
 4 (Attachment G to Exhibit 1).

5 Chart 7 breaks down the Seabrook decommissioning cost components and the
 6 indices applied to the labor, equipment and material, and energy components. As shown,
 7 the Consumer Price index is used for Class B and C Waste disposal and the “other”
 8 category which includes licensing fees, taxes, fees for disposal of Greater-Than-Class C
 9 waste, and radiological surveys, since these are made up primarily of materials and
 10 services. IHS concurred with the use of these indices for these cost items. For the
 11 LLRW segment, the rates are derived from the NextEra’s Life-of-Plant Disposal
 12 Agreement with EnergySolutions that provides for 100% disposal of the Class A LLRW⁸
 13 generated by the plant during its operations. (Exhibit 3, Attachment F).

14
 15

Chart 7
IHS Global Insight Escalation Indices

Category	Percent of Total Cost of NDFC 2030 (%)	IHS Forecast Database	Average Annual Rate of Escalation
Labor	59.6	Employee Cost Index Total Compensation, Private Industry Workers (ECIPCTNS)	2.71
Equipment & Material	13.4	Producer Price Index, Fuels & Related Products and Power (WPI05)	1.13
Energy	1.7	Producer Price Index, Machinery & Equipment (WPI11)	2.27
Class A LLRW Disposal	5.9	NextEra and EnergySolutions life-of-project agreement	1.95
Class B and C LLRW	2.3	Consumer Price Index,	2.64

⁸ Class A is the lowest LLRW category for radiological contamination and comprises about 97% of the total LLRW volume.

Category	Percent of Total Cost of NDFC 2030 (%)	IHS Forecast Database	Average Annual Rate of Escalation
Disposal and Recycling		Services (CUSASNS)	
Other	17.1	Consumer Price Index, Services (CUSASNS)	2.64
COMPOSITE	100.0		2.58

1 As additional support of their request that the escalation rate be lowered to 3.5%,
2 the owners note that the 3.5% escalation rate would result in a 2030 target cost of \$4.6
3 billion compared to a target cost of \$2.9 billion using 2.58%. This is characterized by the
4 owners as a \$1.7 billion buffer. As we have previously stated, (NDFC 2011-1 FRO at
5 21) however, the Committee views escalation as being unrelated to the Trust balance and
6 will not consider the amount held in the Trust or the potential for excess monies being
7 left in the Trust at the end of decommissioning when setting the escalation rate.

8 The TLG escalation analysis is straightforward. Given the indices developed or
9 approved by IHS, it is a matter of applying them to the cost components as determined by
10 the cost estimate. In the view of the Committee, therefore, the appropriate escalation rate
11 is a function of the historic accuracy of the TLG cost estimates and the applied IHS
12 indices. If, for example, decommissioning estimates for Seabrook or for the industry in
13 general have been increasing significantly from year to year or if the actual costs of
14 decommissioning nuclear plants have turned out to be much higher than the estimates
15 going into the projects, then the escalation rate should reflect the probability that there are
16 hidden costs and/or scope not captured by the estimate.

17 In Docket NDFC 2011-1, although TLG claimed that its experience in several
18 decommissioning projects indicated that the reported costs compared well with what was

1 predicted, no specific evidence or quantitative data on the predicted versus actual costs
2 were provided. As described in Section D above, information has now been presented to
3 the Committee that indicates that the TLG estimates have been tested and proven fairly
4 accurate for a number of plants that have actually completed decommissioning.

5 The following Chart shows the IHS ten-year forecasts in 2004 versus the actuals
6 for indices used in the Seabrook decommissioning estimate.

7 **Chart 8**
8 **IHS Global Insight Ten-Year Forecasts vs. Actuals**

	Projected for 2015 in 2005	Actual 2015
Compensation (Labor)	39%	22.2%
Equipment	3.4%	10.2
Energy	Flat	34%
CPI	23.1%	21.2%

9 The chart demonstrates that although the IHS prediction for overall inflation as
10 represented by CPI was very accurate, there was a wide divergence in the projections and
11 actuals for the individual components. IHS states that this does not indicate a weakness
12 in the model, noting that its long range forecasts "...are developed as the mean of
13 possible outcomes, with the actual projection seen as following a central 'trend path.'
14 This trend can be thought of as the track along which the economy (or inflation) should
15 move. During peak years in the business cycle, however, growth and inflation will exceed
16 rates suggested in the trend outlook. Conversely, during a recession, both growth and
17 inflation will be weaker than suggested by the trend forecast. Over time, though, growth
18 and inflation will be seen to oscillate around this central trend, with their most likely
19 value at any point in time along this path." (Exhibit 18 No. 33). IHS also notes that if the

1 forecasts for energy and equipment had been extended for two quarters and one year
2 respectively, its forecast error would have been greatly reduced.

3 IHS considers each of the indices that TLG has selected for its escalation analysis
4 to be well matched with the cost components being evaluated. The IHS index used for
5 labor (ECIPCTNS) is a broad measure that includes construction as well as white collar
6 workers in the private sector that would be retained for the Seabrook decommissioning.
7 It also covers benefit costs which IHS states have been the driving force in labor
8 escalation in recent years. The equipment index (WPIP05) used for Seabrook
9 decommissioning is also a broad measure of machinery and equipment that includes a
10 range of equipment that would be used to dismantle Seabrook Station. The LLRW
11 component of escalation is known because it is captured in the disposal contract that
12 NextEra has with EntergySolutions. Energy is less than 2% of the total cost and therefore
13 has little impact on escalation. We also concur with the TLG escalation analysis that the
14 CPI as a measure of goods and services is representative of the non-labor costs that are
15 included in the “other” category.

16 Since the IHS forecasts only go out 25 years, TLG uses a “moving average”
17 method in which the most recent 25 years of indices are averaged to determine the future
18 year index. For example, if the IHS indices provide forecasts out 25 years to 2040, the
19 predicted escalation for 2041 and each subsequent year is the arithmetic average of the
20 prior 25 years. Attachment F to Exhibit 1 at 3/15. IHS concurs with this approach,
21 stating that it is reasonable in this application and has been recommended by IHS to its
22 clients for very long term forecasts.

1 The effect of the proposed change in escalation on funding projections is seen in
2 Chart 3. If the only change from the approved set of input parameters (Column 1) is the
3 proposed reduction in escalation (Column 3), the short-term effect is that the required
4 contributions over the next three years is decreased by about a million dollars and over
5 the next ten years, it is decreased from about \$15 million to about \$7.5 million based on
6 September 30, 2015 Trust balances. All contributions are from MMWEC since the other
7 owners are overfunded. Lowering escalation to 3.5% would also increase the projected
8 overfunding from \$400 million to about \$1.2 billion.

9 As in the last comprehensive review, the specific evidence presented with respect
10 to the accuracy of their forecasting is a table that shows each of the five indices used by
11 TLG with IHS's projected change during the first forecast of the year for the past ten
12 years, 2005 through 2014, and the actual change that occurred in each year. In other
13 words, it presents the accuracy of its one-year forecasts, which are of limited relevance,
14 to the 85-year planning horizon for the decommissioning Trust. Even if data showing
15 long-range forecasting versus actual escalation in the past were presented and shown to
16 be relatively accurate, prudence would dictate a conservative approach for assigning a
17 value for such a long period.

18 The Committee will decide at the Seabrook Hearing whether the escalation rate
19 will be set at 3.85% or 3.5%. Accordingly, two statements of decision are provided and
20 will be the subject of deliberation at the Seabrook Hearing.

21 Alternative 1: Since the Committee last reviewed a proposed reduction in
22 escalation, however, much has been learned about the true costs of decommissioning as
23 discussed in Section IV.D above. Large nuclear plants such as Rancho Seco and Maine

1 Yankee have been decommissioned and we are able to compare their actuals with what
2 TLG estimated before the units were shut down. Evidence has been provided that shows
3 that the estimates have tracked the actual costs of decommissioned plants closely. The
4 reduction requested by the owners is also modest in comparison to the escalation rate that
5 TLG has calculated to be warranted and to the previous request. For these reasons, the
6 Committee will approve the reduction in escalation from 3.85% to 3.5%.

7 Alternative 2: Notwithstanding the logic of employing gradualism when a
8 change is contemplated, the Committee believes this is not the year to revise the
9 escalation rate. In the event the NRC does not renew the station's operating license in
10 2016, or renews it for fewer than 20 years, the need to ensure the Trusts are fully funded
11 may require the Committee to adjust a number of assumptions in order to provide for full
12 funding by the Funding Date. Accordingly, the Committee will leave the escalation rate
13 unchanged at 3.85% for at least another year.

14 **G. Inflation Rate**

15 An inflation adjustment is applied to the schedules of payments after the projected
16 cost of decommissioning is determined. The contribution requirements (if any) will
17 increase each year by the inflation rate. The goal of the inflation adjustment is to avoid
18 inter-generational transfers of decommissioning obligations that would result if different
19 generations of customers paid an equal amount toward decommissioning in the then
20 current year dollars without regard for the decrease in the value of those dollars over
21 time. The inflation adjustment is distinguished from decommissioning escalation in that
22 the former reflects the general increase in the level of prices for goods and services while
23 the latter refers to the rise in the cost of services and materials specific to the process of
24 decommissioning Seabrook Station.

1 In these proceedings, the parties request that the inflation rate should remain at
2 3%. According to the Investment Consultant's report for 2015 (Attachment C to Exhibit
3 1), data for inflation as measured by the Consumer Price Index became available in 1962.
4 Historical inflation since 1962 has measured slightly above 3.0%, as a result of the
5 rampant inflation rates of the late 1970s and early 1980s. The average inflation rate for
6 the last 20 years is lower than 3.0%. LCG also states that 3.0% is the rate currently used
7 in its 30-year inflation model. (Attachment C to Exhibit 1 at pp.27-28). For these
8 reasons, LCG concludes that inflation expectations of 3.0% are reasonable and should not
9 be adjusted. The Committee agrees and continues to find that a 3% inflation adjustment
10 is reasonable.

11 **H. Trust and Escrow Earnings Assumptions**

12 The only change in assumed rates of return requested by the owners is for an
13 increase in the return on equities from 8.5% to 9.5%. The assumed returns on the Fixed
14 Income, Opportunistic assets, and Escrow funds are 6.0%, 7.5%, and 0.25%, respectively.

15 As shown on Chart 4, about 27% of the Trust funds were in Fixed Income
16 investments as of the end of 2014. Investment Guidelines require the Fund to begin to
17 reduce the Trust's equity position beginning five years prior to the anticipated initial
18 dismantlement period (assumed to begin in 2030) at which time at least 50% of Trust
19 assets must be held in cash or cash equivalents (Fund 4), up to 25% in equities, and up to
20 25% in fixed income. After the ten-year initial dismantlement period, the maximum
21 limits revert back to 70% equities and 100% fixed income where they are today.

22 The Investment's Consultant's internal 30-year assumptions for Core (Fund 2)
23 and Core Plus (Funds 1 and 3) fixed income holdings are 5.5% and 5.7%, respectively.
24 LCG states, however, that over a long term horizon such as Seabrook Station's 86 years,

1 they expect returns to meet or exceed the 6.0% return assumption. LCG uses the
2 Barclay's Aggregate Index for the Core investments and the Barclay's U.S. Universal
3 Index for the Core Plus⁹. Both show a compound rate of return of about 8.0%, with the
4 Aggregate index dating back to 1976 while the Universal goes to 1990.

5 In view of the Investment Guidelines and the owners' target allocations for
6 equities, it is reasonable to expect that the holdings in Fixed Income will remain fairly
7 steady even through the Initial Dismantlement period at around 25%. Fixed Income is
8 also inherently less volatile than equities. The Committee expressed concerns over the
9 fact that LCG's fixed income return assumptions are lower than that assumed for the
10 Trust and that the return on Fixed Income since inception has been lower than 6.0%. As
11 discussed below, however, the Committee's interest is to ensure that the overall rate of
12 return or blended return for all investment types is sufficiently conservative to assure
13 adequate funds for decommissioning even in the event of a premature shutdown. In view
14 of this and the analysis provided in the LCG Report, the Committee sees no reason to
15 change the assumed returns on either Fixed Income or Escrow at this time.

16 NextEra is the only owner with Opportunistic investments, which the Committee
17 reviewed and approved in the 2012 Docket, allowing an assumed rate of return of 7.5%
18 for purposes of calculating the funding schedule. At that time, the Committee stated that
19 it would continue to monitor these Trust investments. Approval of the 7.5% return was
20 based on a presentation by NextEra and LCG indicating that these direct lending
21 instruments are expected to earn between 12% and 15% as described in the 2012 Annual
22 Report. The returns on these investments are written into the contracts and, according to

⁹ The New Hampshire Retirement System also uses the Barclays Capital Universal Bond Fund Index for its Fixed Income Fund. See publicly available new Hampshire Retirement System Comprehensive Annual Investment Report p.13.

1 the 2015 LCG Report, currently stand at 13.51% after fees. LCG, however, notes that
2 these returns may not always be as robust as today. The actual returns are also impacted
3 by the loss rate for the loans, that is, the number and the average amount of defaults.
4 Based on the average default rate and recovery rates from 1998 to 2014, LCG expects
5 losses to be only slightly over 1%¹⁰. LCG continues to consider an assumed return of
6 7.5% as “conservative and appropriate” and NextEra does not seek a change. MMWEC
7 took no position on the 7.5% rate of return but has opposed this investment instrument in
8 the past. The Committee will continue to monitor this investment closely, but sees no
9 reason to change the 7.5% assumption at this time.

10 Since the equity earnings and decommissioning cost escalation assumptions are
11 the principal drivers of the funding schedules, relatively small changes in these two
12 inputs can have a large impact. This can be seen by comparing the values in Columns 1
13 and 4 in Chart 3 above. Column 1 summarizes the funding schedule using the currently
14 approved input values. In Column 4, the only change is an increase in the equity rate of
15 return from 8.5% to 9.5% as proposed, which reduces the contribution requirements for
16 2015 and 2016, all from MMWEC, by over a million dollars and the total contributions
17 from 2015-2029 by about nine million based on September 30, 2015 Trust balances.

18 The assumed rates of return for Trust investments are based on long-term
19 performance, with short-term fluctuations in the market tending to be smoothed out when
20 investments are held for long periods. In the 2012-1 docket, the Committee reduced the
21 assumed rate of return on equities from 9.5% to 8.5%. Because the funding schedule
22 assumes an inflation rate of 3.0%, this equates to a real rate of return above inflation of

¹⁰ The loss rate is simply the percentage of loans that go into default for a given period times the amount of the loan that is not recovered once it goes into default. In this case, the default rate is 3.4% and the recovery rate is 69.1% which means that 30.9% is not recovered. $.034 \times (.309) \times 100 = 1.05\%$.

1 5.5%. The Committee took this action out of concern that the prior rate was optimistic
2 rather than conservative and higher than other plans with long-term horizons such as the
3 New Hampshire Retirement System.

4 The owners argue that the 8.5% assumption is lower than the rate supported by
5 historic returns. Their stipulation notes that the equity markets generally have produced a
6 23.7% annualized return since the economic trough in March of 2009 and that the Trust
7 ended 2015 ahead of the expectations anticipated in the Final Report and Order in Docket
8 NDFC 2014-1. Such short-term returns are disregarded in the Committee’s deliberations
9 regarding an appropriate long-term rate-of-return in order to focus on long-term data
10 which the owners agree is more relevant to setting assumptions. For that, we turn to the
11 2015 LCG Report. The Investment Consultant provides over 12 pages of well-
12 documented data on the long-term performance of equities. Key elements of this data are
13 included in the following chart:

14 **Chart 9**
15 **HIS Global Insight Historic Rates of Return for Equities**

	Period	Percent of Trust As of 12/31/2014	Return
Large Cap	1926-2014	63%	10.1%
Mid and Small Cap	1979-2014	20%	14.4%
International	1970-2014	17%	11.8%

16 The LCG Report also carefully and thoroughly shows the volatility in equities
17 over these periods with charts showing Maximum, Average, and Minimum returns for
18 one-, five-, ten, and twenty-year periods and rolling five-, ten- and twenty year returns.
19 The chart below summarizes the LCG Report data for rolling periods above the current
20 8.5% and the proposed 9.5% equity return.

1
2

Chart 10
Rolling Period Observations

	% Above 8.5%			% Above 9.5%		
	5 Year	10 Year	20 Year	5 Year	10 Year	20 Year
Large Cap	62	63	74	57	54	67
Mid & Small Cap	73	83	98	67	79	93
International	50	46	66	42	41	64
Blended Equity	65	76	92	62	70	81

3 With a funding date of 2030, the Investment Guidelines require that 75% of Trust
4 assets be held in fixed income or cash by 2025. The Committee therefore considers the 5
5 and 10-year rolling periods to be most relevant, which may portray a majority of
6 observations to be above 8.5% and even 9.5%, but still a considerable percentage below
7 these levels. Since about 70% of the cost will be spent in the first ten years after
8 shutdown, a sharp drop in the equity markets between now and 2025 would not allow
9 much time to recover before the funds are shifted to fixed income instruments.

10 Equities, of course, are just a part of the total Trust portfolio. The return on the
11 total portfolio or “total blended return” is the overall return on Trust investments
12 assuming that each owner is at the target allocations for Equities, Fixed Income and
13 Opportunistic with their assumed rates of return. If equities are assumed to return 8.5%,
14 the total blended rate is 7.74%; at 9.5% the total blended return is 8.38%. LCG reported
15 that for a hypothetical portfolio with a similar asset allocation to the Seabrook Trust, the
16 return since 1976 would actually be above the 7.74% total blended return 74% of the time
17 for rolling 5-year periods, 79% for 10-year periods, and 100% of the time for 20-year
18 periods.

19 When the Committee reduced the assumed return on equities in 2012, NextEra
20 had not provided the information requested about the rates of return for equities used by

1 other NDTs. LCG subsequently provided information in the NDFC 2013-1 docket from
2 a NISA survey in which Nuclear Decommissioning Trust (NDT) owners assumed an
3 average U.S. equity return of 8.8% for Qualified Trusts and 9.1% for Non-Qualified
4 Trusts. For international equities, the return assumed was 8.8% for Qualified Trusts with
5 no data available for Non-Qualified Trusts. Since the Seabrook Trust is currently about
6 one-third Qualified and two-thirds Non-Qualified, applying these rates to the Seabrook
7 Trust would yield a rate of about 9.0%. No information was available on blended rates of
8 these other NDTs.

9 The Committee believes that state and municipal retirement system funds are an
10 imperfect but reasonable proxy for nuclear decommissioning trusts. They are large long-
11 term funds which are managed on a total return basis, recognizing the importance of
12 preservation of capital as well as the fact that reasonable and varying degrees of
13 investment risk are generally rewarded over the long term. The New Hampshire
14 Retirement System continues to assume a blended rate of 7.75% on its long-term
15 investments. This is in line with other state and municipal retirement systems. Some
16 larger systems such as the California Public Employees and California Teachers
17 Retirement Systems use an assumed rate of 7.5%, and other pension fund fiduciaries are
18 currently reducing assumed rates of return. The owners, with the support of the
19 Investment Consultant, have been pressing for a return to an assumed rate of return of
20 9.5% since it was reduced to 8.5% in 2012. The basic arguments for the higher rate have
21 not changed in that time, relying solely on the historic performance of equities. With the
22 current Trust allocations, the assumed return on equities largely determines the annual
23 contribution requirement from the owners. Presently only MMWEC has such a

1 requirement, although this could change with a significant market downturn or a change
2 in one of the other input parameters. The Committee recognizes that whatever assumed
3 rate of return it sets, the funding schedule can be adjusted to make up for it by the
4 funding date at the annual resets. We prefer, however, to set a reasonable but
5 conservative assumed rate that will minimize large fluctuations in the funding schedule.
6 The fund has significant expense obligations beginning in 2030 unless the license
7 renewal is approved. Although not perfect, a comparison of assumed return on
8 investments with large pension funds has validity. As shown in Exhibit 19, the blended
9 rates for state and municipal pension funds are generally in the range of 7.5% to 8.0%
10 with a median rate of 7.90%. At 7.74%, the Seabrook Trust assumed blended return is in
11 line with these, including the New Hampshire Retirement System. At 9.5%, the assumed
12 return would be significantly higher than the return of the pension funds. Although LCG
13 argued for the higher rate, it conceded that 8.5% is not unreasonable, simply at the “very
14 low end of a reasonable range.” (Exhibit 1 Attachment C at 7). The Committee believes
15 the Seabrook Decommissioning Trust assumed returns should be conservative in order to
16 minimize risk of underfunding.

17 **I. Coverage Ratios**

18 In Docket 2005-1, the NDFC adopted the use of a coverage ratio to ensure that
19 there was adequate funding and liquidity during the prompt dismantlement period. The
20 coverage ratio is defined as the ratio of the funds held as cash, cash equivalents, and high
21 quality fixed income investments to total expenses to be paid from the Decommissioning
22 Trust in the following year during the first seven years of prompt dismantlement.¹¹

¹¹ With the approved input assumptions for the funding schedule (cost of 1.118 billion, equity return 8.5%, an escalation rate of 3.85%), the lowest coverage ratio during the decommissioning period is projected to

1 (NDFC Docket 2005-1 Final Report and Order at 16). Although the owners have not
 2 requested a change, they state in the Stipulation that because of the high level of
 3 overfunding projected in the funding schedules, there is no longer a need to require a
 4 coverage ratio. The Committee disagrees. The coverage ratio sets a floor on the amount
 5 of liquidity available during the dismantlement period without relying on equities, which
 6 by their nature are volatile over the short term. The amount of overfunding projected for
 7 2101 is not material in our view. In any event, the Committee sees no reason to change
 8 the coverage ratio.

9 **J. Allocation Targets**

10 The investment guidelines allow a maximum allocation to equities of 70%,
 11 applied to each Joint Owner’s total asset value at the time the equity holdings are
 12 purchased. If the Joint Owner’s actual allocation as of the date determined by the
 13 Committee is within 3% of the Joint Owner’s target, the targeted allocation would be
 14 assumed in calculating the funding schedule. Otherwise, the target or actual allocation,
 15 whichever is lower, would be used. The chart below shows each owners targets and their
 16 actual allocations as of June 30, 2015.

17 **Chart 11**
 18 **Joint Owner Target Allocations**

		Target	Actual
NextEra	Equities	65	67
	Fixed	25	26
	Opportunistic	10	7
MMWEC			
MMWEC	Equities	55	63
	Fixed	45	37

be 3.7. With equities assumed to return 9.5% and the escalation rate at 3.5% as the owners propose, the lowest coverage ratio during the decommissioning period is projected to be 4.4.

Hudson	Equities	30	33
	Fixed	70	67
Taunton	Equities	30	31
	Fixed	70	69

1 The owners have not requested a change either in the allocations or the criteria for
2 when to assume the target or actual allocation for the purposes of generating the funding
3 schedule and therefore the Committee will not change them.

4 **K. Release of Escrow**

5 The Escrow fund is a cash funding assurance controlled by the NDFC, with the
6 monies held outside of the Trust. The Committee can release all or part of the Escrow, or
7 transfer the monies to the Trust, at any time. In the event of any attempt to seize the
8 Escrow funds, the money will automatically be transferred to the Trust by order of the
9 State Treasurer. (Escrow Agreement 11(b)). In this proceeding NextEra repeated its
10 request last made in the 2013 docket for a return of part of its share of Escrow. While
11 acknowledging that the Committee has stated previously that it would defer consideration
12 of a return of Escrow to the owners until after a decision is made regarding the license
13 renewal, NextEra requests that all but \$10 million of its share of the Escrow be refunded.
14 The other Seabrook Owners did not request release of monies from their Escrow
15 accounts. MMWEC opposes any release of Escrow to NextEra on the grounds that it
16 weakens the financial assurance provided by such funds.

17 Based on an update provided by NextEra of the summary table in the 2015
18 Annual Report (Attachment C to Exhibit 1) to reflect August 31, 2015 Trust balances, its
19 share of the cost of decommissioning cost would be overfunded by \$5.5 billion if the cost
20 escalation rate and assumed return on equities are maintained at 3.85% and 8.5%,

1 respectively; and by \$46 billion with the proposed 3.5% escalation rate and 9.5% return
2 on equities. NextEra parent guarantees also provide unlimited funding assurance over
3 and above the escrow. (Exhibit 6 at 19-20). The last time that the Committee reviewed
4 this topic in any detail was in NDFC 2013-1. The reasoning at that time for denying the
5 request by NextEra was that the status of license renewal remains uncertain and,
6 therefore, the need for the Escrow funds for decommissioning as early as 2030 remains a
7 possibility. The Committee reiterated this position in NDFC 2014-1 and will maintain
8 such in this docket.

9 **L. Funding Assurances**

10 Funding assurances are required of all non-utility owners of Seabrook Station.
11 (RSA 162-F: 21-a, III). The NDFC may impose a funding assurance requirement to
12 ensure recovery of decommissioning costs in the event there is a premature permanent
13 cessation of operations. (RSA 162-F: 19. IV). In NDFC Docket 2002-2, the NDFC
14 established funding assurance requirements for NextEra, which included a guaranty by its
15 indirect parent company, NextEra Energy Capital Holdings (formerly FPL Group Capital,
16 Inc.), which in turn is backed by a guaranty by the holding company, NextEra Energy,
17 Inc. (formerly FPL Group, Inc.). To ensure full funding of the decommissioning
18 obligation, the Committee established “triggers” that would result in immediate payments
19 by NextEra in the event of a decline in the financial health of NextEra Energy or NextEra
20 Energy Capital Holdings.

21 None of the triggers associated with the NextEra Funding Assurance requirements
22 have been approached. The following chart summarizes the status of the Funding
23 Assurances with respect to the triggers.

1
2

Chart 12
Status of NextEra Funding Assurances and Triggers

Event	Result	2011 Status
NextEra Seabrook fails to make a scheduled payment to the decommissioning fund	<ul style="list-style-type: none"> ➤ In addition to schedule payments, payment equal to 6-months of payments paid into the fund ➤ All decommissioning payments will also be made as scheduled by NDFC 	No payments have been missed.
NextEra Energy sells 80% FP&L (FPL utility) generation assets	<ul style="list-style-type: none"> ➤ 12-months of decommissioning payments paid into Escrow ➤ NextEra Energy Seabrook must show cause why funding assurance should not be changed ➤ All decommissioning payments will also be made as scheduled by NDFC 	A review of the 8K's and 10K's demonstrated that NextEra Energy did not sell any of FP&L's generation assets in 2014.
NextEra Energy's Funded debt to total Capitalization exceeds 0.65:1.00	<ul style="list-style-type: none"> ➤ NextEra Energy Seabrook will not pay any cash dividends or other transfers to NextEra Energy, /or/ ➤ NextEra Energy Seabrook may make payment equal to 6-months of payments paid into the decommissioning fund, in addition to all other scheduled payments ➤ All decommissioning payments will also be made as scheduled by NDFC 	The adjusted total debt to capital ratio was 51.1% as of 12/31/2014.
NextEra Energy's operating income falls below \$800 million	<ul style="list-style-type: none"> ➤ NextEra Energy Seabrook must show cause why funding assurance should not be changed ➤ All decommissioning payments will also be made as scheduled by NDFC 	According to the NextEra Energy Annual Report, operating income was \$17.0 billion in 2014.
NextEra Energy's operating income falls below \$600 million	<ul style="list-style-type: none"> ➤ 12-months of payments paid into Escrow ➤ NextEra Energy Seabrook must show cause why funding assurance should not be changed ➤ All decommissioning payments will also be made as scheduled by NDFC 	According to the NextEra Energy Annual Report, operating income was \$17.0 billion in 2014

1 The Committee is satisfied that the financial capability of NextEra, as backed by
2 the funding assurances of NextEra Energy, Inc., remains sufficient to fund NextEra's
3 decommissioning obligation, even in the event of permanent premature cessation of
4 operation.

5 The Committee has previously determined that Taunton, Hudson, and MMWEC
6 have contractual and statutory obligations that cannot be voided, even through
7 employment of the Bankruptcy Code, and that additional funding assurances were not
8 required of those Seabrook Owners. (NDFC Docket No. 2008-1, at 21 – 29). The
9 Committee is satisfied that those obligations are sufficient at this time.

10 **M. Support Agreement**

11 Under the Support Agreement, established in Docket NDFC 2002-1, NextEra
12 Energy Capital Holdings agrees to provide, upon request, financial support over
13 Seabrook's licensed life to NextEra Energy Seabrook for prolonged outages if its
14 available cash does not permit it to fund ongoing operating expenses. While important to
15 provide additional guarantees that Seabrook Station will be properly maintained, this is
16 not a funding assurance and not enforceable by the NDFC. The NDFC, however,
17 monitors the Support Agreement and the parties agreed to recalculate the amount in
18 accordance with the formula described below at the four-year reviews and to provide at
19 least 30 days' notice to the NDFC of any proposed changes.

20 The formula for determining the amount of the guarantees from NextEra Energy
21 Capital Holdings to NextEra Energy Seabrook is taken from Section 9.3 of the
22 Stipulation of the Parties entered in NDFC Docket 2002-2 which states that the amount
23 available for outages less than nine months shall be equal one-half of the average annual
24 operations and maintenance expense for NextEra's share during the immediately

1 preceding three-year period and the most recent projection for the succeeding three years.
2 The additional commitment for outages lasting more than nine months' duration uses the
3 same formula. The Support Agreement funds are automatically replenished after any
4 outage except an outage leading to premature shutdown. The current level of the Support
5 Agreement is \$287,900,000. NextEra has completed an update for 2015 and determined
6 that the total amount available for outages less than nine months shall be \$141,460,000.
7 The additional commitment for outages lasting more than nine months' duration shall
8 also equal \$141,460,000. The total guarantee, therefore, is \$282,920,000. (Exhibit 17)
9 The parties propose no other changes to the terms of the Support Agreement.

10 **N. Contributions**

11 The NDFC will continue the practice of requiring all 2016 decommissioning
12 payments to be deposited in the Escrow. The schedules of payment shall be calculated
13 assuming that all Escrow funds held in the name of an owner that is projected to have a
14 balance after decommissioning is completed in 2101 ("overfunded") under the NDFC-
15 approved funding schedule are refunded to that owner in 2016. If a Seabrook Owner is
16 not projected to be overfunded, its Escrow funds, up to but not exceeding that amount
17 that would lead to overfunding, are assumed to be transferred to the Trust. These
18 assumptions are made only for purposes of establishing the funding schedule. Any actual
19 transfers of Escrow funds to the Trust or back to the Seabrook Owner shall be determined
20 separately by the Committee.

21 **O. Schedules of Payment and December Reset**

22 In Docket 2002-2, the NDFC established the practice of setting the Schedules of
23 Payments beginning on January 1 of the following year based on a November 30 actual
24 Trust balance in the docket year, adjusted to estimate the end-of-year balance as closely

1 as possible. In Docket 2004-1, the year-end calculation was further refined and was
2 again adjusted in Docket 2009-1 to include the Escrow balances and assumed expenses in
3 December in determining future annual contributions. This approach permits the best
4 full-year estimate of earnings and expenses during the year to be recognized when setting
5 contribution requirements for the next year. This practice is known as the “December
6 true-up.” If the Final Report and Order for this docket is issued on or before December
7 31, 2015, the Schedules of Payments for 2016 shall be based on the actual Trust and
8 Escrow balances as of November 30, 2015, plus the December contribution to the Trust
9 and Escrow, plus assumed earnings for December on both the Trust and Escrow balances,
10 minus estimated expenses applicable to both. If the Final Report and Order for this
11 docket is issued after December 31, 2015, the Schedules of Payments for 2016 shall be
12 based on the actual Trust and Escrow balances as of December 31, 2015. The input
13 assumptions and other requirements of the Final Report and Order shall be used in
14 establishing the 2016 Schedule of Payments.

15 **P. 2016 Annual Report**

16 NextEra is to file, no later than March 1, 2016, an independent auditor’s report of
17 the Seabrook Nuclear Decommissioning Financing Fund and Escrow Fund as of
18 December 31, 2015. By April 30, 2016, NextEra shall file the annual update required in
19 order for the Committee to perform the annual review of fund performance and fund
20 assurance as required by RSA:F-22.II. Additional filing requirements may be imposed
21 based upon comments on this preliminary order and the submission of the 2016 schedules
22 of payments as required herein.

1 **V. CONCLUSION**

2 For the reasons set forth within this Report and Order, the Committee finds that
3 the requirements of RSA 162-F will be met by the decisions of the NDFC and the
4 resulting schedules of payment.

5 **Based on the foregoing, it is hereby**

6 **ORDERED**, that the funding assurance provided by NextEra Energy Seabrook
7 approved in the Docket 2002-2 Final Report and Order shall remain in place and
8 unchanged; and it is

9 **FURTHER ORDERED**, that the Support Agreement shall be unchanged except
10 that the funds available from NextEra Capital Holdings to NextEra Energy Seabrook for
11 outages less than nine months shall be reduced to \$141,460,000 with an additional
12 commitment of \$141,460,000 for outages lasting more than nine months; and it is

13 **FURTHER ORDERED**, that the payments into the Decommissioning Trust and
14 Funding Assurance Escrow from Seabrook Station owners for 2016 shall be calculated in
15 accordance with this Preliminary Report and Order and as supplemented and/or revised in
16 the Final Report and Order issued following the public hearing in the Town of Seabrook,
17 the total of which will be determined by the calculation of a revised schedules of
18 payment; and it is

19 **FURTHER ORDERED**, that the schedules of payments for 2016 will be
20 established in January 2016, using the assumptions delineated in the Summary of
21 Findings of this Preliminary Report and Order and as supplemented and/or revised in the
22 Final Report and Order issued following the public hearing in the Town of Seabrook,
23 calculated using the Decommissioning Fund and Funding Assurance Escrow account
24 market values and the actual Trust investment portfolios as of December 31, 2015, plus
25 the Escrow account contributions scheduled to be made in January 2016, plus the
26 estimated earnings assumptions for January 2016, minus the January 2016 estimated
27 expenses, and comports to the approved investment plan; and it is

28 **FURTHER ORDERED**, that each Seabrook owner shall deposit 100% of its
29 2016 contribution into the Funding Assurance Escrow; and it is

30 **FURTHER ORDERED**, that payments into the Funding Assurance Escrow are
31 funding assurance obligations, and are not schedules of payments obligations of the

1 Seabrook Owners. Payments into the Escrow are obligations imposed by the NDFC and
2 fully enforceable by the Committee; and it is

3 **FURTHER ORDERED**, that NextEra is to file no later than March 1, 2016 an
4 independent auditor's report on the Seabrook Nuclear Decommissioning Financing Fund
5 and the Seabrook Escrow Fund as of December 31, 2015; and it is

6 **FURTHER ORDERED**, that the 2016 Annual Report is to be filed no later than
7 April 30, 2016, and it is

8 **FURTHER ORDERED**, that any party to this proceeding wishing to comment
9 on this Preliminary Report and Order shall file written comments with the NDFC no later
10 than December 4, 2015, and provide a copy to all parties on the same date; and it is

11 **FURTHER ORDERED**, that the date of the public hearing to be held in the
12 Town of Seabrook will be held on a date to be announced by separate notice of this
13 Committee and will be at least 30 days after this Preliminary Report and Order has been
14 made available for review in the Town of Seabrook and in the office of the public utilities
15 commission in accordance with RSA 162-; and it is

16 This is a Preliminary Report and Order of the NDFC prepared in conformity with
17 RSA 162-F:21, III. A Final Report and Order will be issued after the Committee has
18 reviewed all comment received regarding this Preliminary Report and Order, and after
19 the review of all comments submitted at the hearing to be held in the Town of Seabrook,
20 New Hampshire.

21 This Preliminary Report and Order is released on November 18, 2015.