NEXTera® ENERGY SEABROOK

July 13, 2020
SBK-L-20068
10 CFR 50.90

United States Nuclear Regulatory Commission
Attn.: Document Control Desk
Washington, D.C. 20555-0001

RE: Seabrook Station
Docket No. 50-443

License Amendment Request 20-01, One-Time Change to the Seabrook Technical Specifications A.C. Sources - Operating

Pursuant to 10 CFR 50.90, NextEra Energy Seabrook, LLC (NextEra) is submitting a license amendment request (LAR) for a change to the Seabrook Station (Seabrook) Technical Specifications (T.S.). The proposed amendment would extend the allowed outage time (AOT) for one emergency diesel generator inoperable from 14 days to 30 days on a one-time basis. The one-time license amendment is necessary to perform planned maintenance on the B Emergency Diesel Generator (EDG) while at-power.

The Enclosure to this letter provides NextEra's evaluation of the proposed amendment. Attachment 1 to the enclosure provides a mark-up of the existing T.S. page to show the proposed change. No change is proposed to the current T.S. Bases as a result of this license amendment request.

Although the proposed license amendment is prompted by neither exigent nor emergency circumstances, NextEra respectfully requests staff review and approval of the proposed license amendment by October 30, 2020 with the change effective immediately. To allow orderly planning and scheduling, NextEra requests authorization to exercise the extended AOT on a one-time basis until 90 days after issuance of the amendment.

In accordance with 10 CFR 50.91, NextEra is notifying the State of New Hampshire of this request by transmitting a copy of this letter and enclosure to the designated State Official.

As discussed in the Enclosure, the proposed change does not involve a significant hazards consideration pursuant to 10 CFR 50.92, and there are no significant environmental impacts associated with the change. The Seabrook Station Onsite Review Group has reviewed the proposed license amendment.

This letter contains no new or revised regulatory commitments.

If you have any questions or require additional information, please contact Ken Browne, Site Director, Nuclear Safety Assurance and Learning, at 603-773-7932.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on July 13, 2020.

Eric McCartney
Site Director (VP) – Seabrook Nuclear Power Plant
NextEra Energy

Enclosure: Evaluation of the Proposed Change

cc: NRC Region I Administrator
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EVALUATION OF THE PROPOSED CHANGE

Seabrook Station

License Amendment Request 20-01, One-Time Change to the Seabrook Technical Specifications A.C. Sources - Operating

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1.0 SUMMARY DESCRIPTION

Pursuant to 10 CFR 50.90, NextEra Energy Seabrook, LLC (NextEra), is submitting a license amendment request (LAR) for a change to the Seabrook Station (Seabrook) Technical Specifications (T.S.). The proposed amendment would extend the allowed outage time (AOT) for one emergency diesel generator inoperable from 14 days to 30 days on a one-time basis. The proposed change will allow NextEra to perform preventative maintenance. The one-time license amendment is necessary to perform planned maintenance on the B Emergency Diesel Generator (EDG) while at-power.

2.0 DETAILED DESCRIPTION

2.1 System Design and Operation

The onsite A.C. power systems include the 13,800V Distribution System, including the connections from the unit auxiliary transformers (UAT) and reserve auxiliary transformers (RAT); the 4160V Distribution System, including the standby diesel generators, the Supplemental Emergency Power System and connections from the UATs and RATS; the 480V Distribution System; and the 120V Vital Instrumentation and Control Power System. The 4160V Distribution System consists of four buses, two of which are redundant Class 1 emergency busses supplying the redundant engineered safety features loads. These safety loads are divided into two separate and independent trains, Train A and B. The preferred power supply to each 4160-volt bus is from the UAT. An alternate source is available to each bus through a RAT. A standby power supply, consisting of a diesel generator, is available to each emergency bus. A non-safety related supplemental emergency power system (SEPS) is available as a backup power source, when one or both emergency diesel generators fail to start. SEPS is capable of providing the required safety related loads in the event of a loss of offite power (LOP) coincident with the loss of one or both emergency diesel generators. During an event of a LOP and both EDGs fail to start and load, no seismic event or an event that requires safeguards actuation is assumed because this event is considered a non design basis event.

The standby power supply is provided by two redundant diesel engine generator systems of identical design and characteristics which supply onsite power of sufficient capacity and capability to shut down the reactor reliably. The capacity of each diesel generator is sufficient to meet the safety features demand caused by a loss of offsite power with or without a coincident loss-of-coolant accident.

Each diesel generator system comprises the auxiliaries necessary for fast start operation, connection to the 4160-volt emergency bus, and connections to the required services. No auxiliaries are shared between the diesel generator systems. External power sources, other than D.C. control power from the unit's station

batteries and A.C. power from vital uninterruptible power supply (UPS) units, are not required for starting or subsequent operation.

2.2 Current Technical Specification Requirements

Technical Specification (T.S.) 3.8.1.1, "A.C. Sources – Operating" requires in Modes 1 through 4 that two separate and independent diesel generators be Operable. TS 3.8.1.1 action b. stipulates:

b. With a diesel generator inoperable:

1) Demonstrate the OPERABILITY of the remaining A.C. sources by performing Specification 4.8.1.1.1a within 1 hour and at least once per 8 hours thereafter. Perform ACTION d. Demonstrate the OPERABILITY of the remaining diesel generator by performing Specification 4.8.1.1.2a.5) within 24 hours.*

2) Restore at least two diesel generators to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours, unless the following condition exists:

(a) The requirement for restoration of the diesel generator to OPERABLE status within 72 hours may be extended to 14 days if the Supplemental Emergency Power System (SEPS) is available, as specified in the Bases, and
(b) If at any time the SEPS availability cannot be met, either restore the SEPS to available status within 72 hours (not to exceed 14 days from the time the diesel generator originally became inoperable), or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

2.3 Reason for the Proposed Change

B EDG preventative maintenance activities, including cylinder liner inspections and o-ring replacements on eight cylinders, were scheduled for the refueling outage in April of 2020. Cylinder o-ring replacements involve disassembly of major engine components such as pistons, connecting rods, cylinder liners and cylinder heads. This work combined with the associated retest, requires a significant amount of time and resources to complete. The B EDG refueling outage work was postponed due to the ongoing pandemic conditions in the United States. Helping to limit the spread of COVID-19 is a priority for the nation and NextEra. As a result, NextEra completed the refueling outage safely and reliably without adding additional workers onsite that could unnecessarily increase the risk of viral transmission. Maintaining the health of

the EDGs is essential, and so Seabrook proposes to perform these maintenance activities in the Fall of 2020 while at-power.

2.4 Description of the Proposed Change

The proposed license amendment would revise ACTION b of TS LCO 3.8.1.1, by adding a new asterisk (*) to ACTION b(2)(a) and a new footnote denoted by the asterisk (*) as follows:

ACTION

(a) The requirement for restoration of the diesel generator to OPERABLE status within 72 hours may be extended to 14 days* if the Supplemental Emergency Power System (SEPS) is available, as specified in the Bases, and

**** A one-time AOT extension for an inoperable diesel generator allows 30 days to restore the associated diesel generator to OPERABLE status. Compensatory measures within NEE Letter SBK-L-20068 dated July 13, 2020, will remain in effect during the extended AOT period. The one-time AOT extension shall expire upon completion of the maintenance or 90 days after the issuance of the amendment, whichever occurs first.***

3.0 TECHNICAL EVALUATION

The proposed license amendment would permit a one-time change to TS 3.8.1.1, ACTION b, to provide 30 days to restore the B EDG. The proposed change would enable Seabrook to perform essential preventative maintenance while at-power. This would avoid the possibility of an unnecessary plant transient or the need to request regulatory relief in the form of a Notice of Enforcement Discretion (NOED) or an emergent technical specifications amendment in the event the maintenance cannot be completed within the current 14-day AOT.

In proposing a one-time AOT extension to TS 3.8.1.1, ACTION b, NextEra applied Regulatory Guide (R.G.) 1.177, "An Approach for Plant-Specific, Risk-Informed Decision-making: Technical Specifications" (Reference 6.8). RG 1.177 describes acceptable methods for assessing the nature and impact of proposed T.S. changes, including one-time AOT extensions, by considering engineering issues and applying risk insights. Each of the RG 1.177 principles is addressed below:

3.1 Regulatory Compliance

No exceptions or exemptions from applicable codes and standards relevant to safe plant operation are proposed by this amendment request.

3.2 Defense in Depth

During the proposed one-time AOT extension, defense-in-depth measures will be applied to account for unknown and unforeseen failure mechanisms or other phenomena and thereby ensure safety function is maintained. Appropriate Compensatory Actions (shown below) have been established to the extent practical and will be implemented at the earliest appropriate time in order to maintain defense in depth. By creating these multiple independent and redundant layers of defense, compliance with applicable general design criteria, national standards, and engineering principles, which assure the integrity of barriers to core damage will be maintained.

3.2.1. Compensatory Actions

During the proposed AOT extension, the following compensatory measures will be in effect:

(1) No testing or maintenance activities will be planned during the extended AOT interval that could potentially cause a plant transient.

(2) No testing or surveillances will be planned that could potentially adversely impact the A EDG during the extended AOT interval.

(3) Operations will guard the equipment/systems listed below in accordance with NextEra procedure OP-AA-102-1003, Attachment 2, Figure 5.1 when the B EDG is inoperable:

1. SEPS Diesel Generators, Breaker and Selected Control Panels
2. Unit Auxiliary Transformers
3. Reserve Auxiliary Transformers
4. Generator Step-Up (GSU) Transformers
5. Switchyard Breakers and Busses
6. Switchyard Relay Room and Selected Control Cabinets
7. Start-Up Feed Water Pump (SUFP)
8. Emergency Feed Water Pumps (EFW)
9. Motor-Driven EFW Pump Breaker
10. A Diesel Generator and Selected Controls

(4) Operations will verify that no adverse weather conditions are forecasted prior to entering the extended AOT interval.

(5) Operations will coordinate with grid operators and request that conditions remain stable in accordance with Master/Local Control Center Procedure No. 1 (M/LCC 1) - Nuclear Plant Transmission Operations. The extended AOT interval will not be entered if Seabrook has been notified of entry into Master/Local Control Center Procedure No. 2 (M/LCC 2) – Abnormal Conditions Alert.

3.2.2. Safety Margin

The proposed one-time amendment does not alter the design and operation of the B EDG, will not result in plant operation in a configuration outside the design basis, and will not impact any assumptions or consequences specified in applicable safety analyses. Safety margins will be maintained in accordance with Seabrook safety analyses acceptance criteria, and no changes are proposed that affect any assumptions or inputs to applicable safety analyses. Sufficient equipment redundancy will exist due to the availability of the A EDG and SEPS during the proposed AOT extension to ensure power is available. As such, no safety margins are impacted by the proposed change.

3.2.3. Other Defense-in-Depth Considerations

A reasonable balance among the prevention of core damage and consequence mitigation will be preserved during the proposed Allowed Outage Time extension. No other SSCs will be affected by the proposed AOT extension, and no limits will be imposed on any SSC performing its specified function. Elevated risk awareness and the protection of critical equipment will be executed (as shown in Compensatory Actions above) during the proposed AOT extension in accordance with existing plant procedures. However, these programmatic activities will be accompanied by pre-job and periodic (e.g., shift change) briefings, equipment walk-downs, progress updates, and increased operational and managerial scrutiny. As such, there will be no over-reliance on programmatic activities as compensatory measures during the proposed AOT extension. The independence of the physical barriers to radiological releases will not be degraded as a result of the proposed AOT extension. The planned B EDG maintenance will not impact fuel cladding, Reactor Coolant System (RCS), or Containment integrity. No other systems, structures, and components (SSC) will be affected by the proposed AOT extension, and thereby no limits will be imposed on any SSC in performing its specified safety function.

Potentially risk significant plant configurations will not occur during the proposed one-time AOT extension due to online risk assessment tools and increased operational and managerial scrutiny of plant operations. During the planned maintenance of B EDG, no risk significant plant equipment will be

removed from service, and protective measures will be implemented to reduce the likelihood of challenges to risk significant equipment. As a result, the functional redundancy, independence, and diversity currently described in the Seabrook Station Updated Final Safety Analysis Report (USFAR) will be maintained throughout the proposed Allowed Outage Time extension.

Defenses against potential common-cause failures (CCFs) will be maintained by limiting non-essential maintenance and operation of SSCs having mitigatory roles credited in accident analyses.

3.3 Evaluation of Risk Impact

3.3.1 PRA Quality

The Seabrook Level 1 and Level 2 PRA Model were initially developed in response to NRC Generic Letter 88-20 (Individual Plant Examination, or IPE). Since the original IPE submittal, the PRA has undergone several model revisions to incorporate improvements and maintain consistency with the as-built, as-operated plant. During that time, the SEA PRA has been the subject of two internal events peer reviews.

Overall, the SEA PRA is reviewed and upgraded with a goal of increased fidelity for risk-informed applications, according to RG 1.200 requirements.

The Seabrook Station evaluation of sources of model uncertainty and related assumptions was revised for the PRA model of internal events and internal flooding events. The guidance contained in NUREG-1855, Guidance on the Treatment of Uncertainties Associated with PRAs in Risk-Informed Decision Making, and EPRI TR-1016737, Treatment of Parameter and Model Uncertainty for Probabilistic Risk Assessment, were the bases for the revision. Potential sources of generic and plant-specific uncertainty that should be reviewed/considered for possible impact on risk-informed applications identified were reviewed thoroughly. Based on the review of the identified generic and plant-specific sources of uncertainty, there are no sources of uncertainty that have a significant impact on the risk model. There is no significant impact on the results of this evaluation.

3.3.1.1 Model Peer Reviews and Self-Assessments

The ASME / ANS PRA Standard (ASME/ANS RA-Sa-2009) has technical elements, high-level requirements (HLRs), and detailed supporting requirements (SRs). NRC Regulatory Guide 1.200 Rev 2 endorses this standard with minor "clarifications." The EPRI ePSA database includes each supporting requirement from ASME/ANS RA-Sa-2009 along with the clarifications from NRC Regulatory Guide 1.200 Rev 2.

The Seabrook PRA has undergone peer review against ASME PRA Standard Parts 1 (configuration control), 2 (internal events), and 3 (internal flood events).

Peer reviews have been conducted against internal event supporting requirements as follows:

- In 1999, a review of all technical elements was performed using the industry PSA Certification process, the precursor to the PRA Standard.
- In 2005, a focused peer review was performed for the elements AS, SC, and H.R. as well as configuration control. This review was done to PRA Standard ASME RA-Sa-2003.
- In 2009, a focused peer review was performed for all elements of Part 3, Internal Flooding. This review was done to PRA Standard ASME/ANS RA-Sa-2009.
- In 2012, a focused peer review was performed for the element L.E. This review was done to PRA Standard ASME/ANS RA-Sa-2009.
- In 2019, a focused peer review was performed on all elements upgraded by the conversion from Riskman to CAFTA. This review was done to PRA Standard ASME/ANS RA-Sa-2009.

Four self-assessments against the internal event S.R.s in the PRA standard were performed in 2005 (ASME RA-Sa-2003), 2007 (ASME RA-Sb-2005), 2010 (ASME/ANS RA-Sa-2009) and 2011 (ASME/ANS RA-Sa-2009). The first three self-assessments considered all internal events, technical elements. The SA-2011 addressed only the open findings against specific S.R.s.

The 2011 Self-Assessment represents the most current status of Seabrook PRA capability, except for element L.E.The 2010 Self-Assessment had assessed the 2009 PRA against each of the 254 internal events supporting requirements in ASME/ANS RA-Sa-2009. That assessment reviewed the results of previous peer reviews and their observations along with the subsequent revisions to the PRA that addressed the observations.

In October 2017, all resolved findings were reviewed to Appendix X to NEI 05-04, NEI 07-12, and NEI 12-13, "Close-out of Facts and Observations" (F&Os) as accepted by NRC in the staff memorandum dated May 3, 2017 (ML17079A427).

Table 2 provides a summary of the open findings after the independent review and focused scope peer review. None of the open findings have an impact on the results and conclusions of this LAR.

3.3.2 PRA Results

Table (1) provides a summary of the calculated ICCDP and ICLERP.

Table 1: SEA ΔCDF and ΔLERF

		Internal Events and Internal Flood (per year)	Fire (per year)	Seismic (per year)	Total (per year)
CDF	BASE CASE	6.15E-06	1.48E-06	3.25E-06	1.09E-05
	B DG OUT OF SERVICE	1.36E-05	2.96E-06	6.50E-06	2.31E-05
	ΔCDF	7.45E-06	1.48E-06	3.25E-06	1.22E-05
LERF	BASE CASE	4.37E-08	1.06E-10	9.52E-08	1.39E-07
	B DG OUT OF SERVICE	5.07E-08	2.12E-10	1.90E-07	2.41E-07
	ΔLERF	7.10E-09	1.06E-10	9.52E-08	1.02E-07
ICCDP – all events	1.00E-06	limit is 1E-06 - See RG-1.177 Page 23			
ICLERP – all events	8.38E-09	limit is 1E-07 - See RG-1.177 Page 23			

Treatment of Common Cause Failures

The type of maintenance activity that has required the proposed AOT is planned maintenance. Due to the inspection activity that is planned during the proposed AOT for DG B, CCF in the DGs for the same causal factor is considered non-existent. DG CCFs probability is judged not to need any elevation beyond the current nominal values of DG CCF probability in the baseline model.

3.3.2.1 Risk Assessment Due to External

INTERNAL FIRE AND SEISMIC RISK

The impact of external events on the increase in risk associated with having B DG out of service was approximated using the seismic and fire PRA results from SSPSS-14 (Reference 6). As a bounding analysis, the seismic and fire risk was assumed to be doubled by having the B EDG out of service. When added to the contribution from internal events and flooding, this resulted in a total ICCDP of 1.00E-06 per year and a total ICLERP of 8.38E-09 per year. The ICCDP is at the RG 1.177 threshold of 1.0E-6 per year ICCDP, and the ICLERP is well below the 1.0E-07 ICLERP threshold.

INTERNAL FLOOD RISK

SEA internal flooding analysis is included in the PRA. The quantitative results are presented in Table 1 above.

3.4 Results

Results of calculations where B DG was considered out of service for maintenance are provided in Table 1. It should be noted that all CDF and LERF calculations were developed using a truncation limit of 5.0E-13 per year.

3.5 Conclusions

Reference 1 provides quantitative acceptance guidelines for risk impact related to AOT changes to be considered "small" as ICCDP of less than 1.0E-6 and ICLERP of 1.0E-7 or less. The incremental conditional core damage probability (ICCDP) calculated for the B DG AOT of 30 days, assuming the entire AOT is used for maintenance, is provided in Table 1. The ICCDP is at the RG 1.177 threshold of 1.0E-6 per year ICCDP and the ICLERP is well below the 1.0E-07 ICLERP threshold. Given the considerable number of compensatory measures (listed below) which will be implemented during the 30-day B DG outage, the ICCDP and ICLERP calculated values can be considered small.

Given the redundancy level of the DG system, there is an inherent safety benefit of maintaining a DG by extending the AOT without shutting the plant down as compared to shutting the plant down with one DG unavailable. Requiring a shutdown to perform this maintenance would result in additional plant equipment and personnel challenges; this is without any significant benefit to the safety of the plant or the health and safety of the public. There is adequate redundant equipment to ensure that the DG function of providing emergency, onsite power If, a loss of offsite power occurs.

Based on the calculated values for ICCDP and ICELRP for B DG AOT of 30 days compared to the values provided by RG-1.177 and the compensatory measures that will be implemented, it is concluded that the risk impact for extending the AOT for the B DG to a maximum of 30 days is considered "small."

4.0 REGULATORY EVALUATION

4.1 Applicable Regulatory Requirements/Criteria

10 CFR 50.36 Technical Specifications

10 CFR 50.36, "Technical Specifications," states: that Limiting Conditions for Operation are the lowest functional capability or performance levels of equipment required for the safe operation of the facility. When a limiting condition for operation of a nuclear reactor is not met, the licensee shall shut down the reactor or follow any remedial action permitted by the technical specifications until the condition can be met. The OPERABILITY of the diesel generators are consistent

with the initial assumptions of the accident analyses and is based on meeting the design basis of the unit. The diesel generators satisfy Criterion 3 of 10 CFR 50.36(c)(2)(ii).

General Design Criterion (GDC) 17 – Electric Power Systems

The onsite A.C. power system is designed to permit the functioning of structures, systems, and components important to safety under all normal and accident conditions. The system provides sufficient capacity and capability to assure that specified fuel design limits and design conditions of the reactor pressure boundary are not exceeded as a result of anticipated operational occurrences, and that the core is cooled and containment integrity and other vital functions are maintained in the event of postulated accidents.

General Design Criterion (GDC) 18 – Inspection and Testing of Electrical Power Systems

Class 1E electric equipment is designed and located to permit appropriate periodic inspection and testing to assure the availability of systems and condition of components. These tests will assure the operability and functional performance of the components, and the operation of the system as a whole.

Regulatory Guide 1.177

Regulatory Guide (R.G.) 1.177 describes methods acceptable to the NRC staff for assessing the nature and impact of proposed T.S. changes by considering engineering issues and applying risk insights.

Regulatory Guide 1.200

Regulatory Guide 1.200 describes one acceptable approach for determining whether the technical adequacy of the PRA, in total or the parts that are used to support an application, is sufficient to provide confidence in the results, such that the PRA can be used in regulatory decision-making for light-water reactors.

Regulatory Guide 1.9

The basis for sizing the diesel generator is consistent with the regulatory position of Regulatory Guide 1.9, the application criteria set forth in IEEE 387, and the "single generator driven by a single prime mover" philosophy that conforms to the regulatory position of Regulatory Guide 1.9.

4.2 **Precedent**

The proposed license amendment modifies the Seabrook TS by extending the AOT for one emergency diesel generator inoperable from 14 to 30 days on a one-time basis. The NRC has approved a similar request for an AOT extension, as indicated below:

- Amendment 248 for St. Lucie, Unit No. 1 authorized a one-time AOT extension from 14 days to 30 days for one inoperable emergency diesel generator (Reference 6.5).

4.3 No Significant Hazards Consideration Determination Analysis

The proposed license amendment would extend the allowed outage time (AOT) for one emergency diesel generator inoperable from 14 to 30 days on a one-time basis. The proposed change will allow NextEra to perform maintenance and testing on the B EDG while at-power, which could challenge the current allowed outage time of 14 days. In accordance with 10 CFR 50.92, NextEra has concluded that the proposed changes do not involve a significant hazards consideration. The basis for the conclusion that the proposed changes do not involve a significant hazards consideration is as follows:

(1) The proposed changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

The proposed change extends the AOT for the B EDG from 14 to 30 days. The failure of a diesel generator is not an initiator of any analyzed event and does not increase the frequency of an initiating event. Consequently, extending the AOT will not have an impact on the frequency of occurrence of any event previously analyzed. The proposed change does not alter the design, configuration, operation, or function of any plant system, structure, or component. As a result, the outcomes of previously evaluated accidents are unaffected.

Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

(2) The proposed changes do not create the possibility of a new or different kind of accident from any previously evaluated.

No new accident scenarios, failure mechanisms, or limiting single failures are introduced as a result of the proposed change. The proposed change does not challenge the performance or integrity of any safety-related system. The proposed change neither installs nor removes any plant equipment, nor alters the design, physical configuration, or mode of operation of any plant structure, system, or component. Installed equipment will not be operated in a new or different manner. No physical changes are being made to the plant,

so no new accident causal mechanisms are being introduced. Procedures that ensure the unit operates within analyzed limits and procedures that respond to off-normal and emergency conditions are not altered with this proposed change.

Therefore, the proposed change does not create the possibility of a new or different accident from any previously evaluated.

(3) The proposed changes do not involve a significant reduction in the margin of safety.

The margin of safety associated with the acceptance criteria of any accident is unchanged. The proposed change does not alter the design, configuration, operation, or function of any plant system, structure, or component. The ability of any operable structure, system, or component to perform its designated safety function is unaffected by this change. Operation with one diesel generator inoperable does not result in a significant reduction in the margin of safety. No safety limits or limiting safety settings are challenged by the proposed change.

Therefore, the proposed change does not involve a significant reduction in the margin of safety.

Based on the above, NextEra concludes that the proposed amendment presents no significant hazards consideration under the standards set forth in 10 CFR 50.92 (c), and accordingly, a finding of "no significant hazards consideration" is justified.

4.4 Conclusions

In conclusion, NextEra has concluded that reasonable assurance exists that the proposed change (1) will not endanger the health and safety of the public, and (2) is in compliance with NRC regulations.

5.0 ENVIRONMENTAL CONSIDERATION

NextEra has evaluated the proposed amendment for environmental considerations. The proposed amendment does not involve (i) a significant hazards consideration, (ii) a significant change in the types or a significant increase in the amounts of any effluent that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed amendment meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment needs to be prepared in connection with the proposed amendment.

6.0 REFERENCES

6.1 10 CFR 50, Appendix A - General Design Criteria for Nuclear Power Plants

6.2 Seabrook Updated Final Safety Analysis Report, Section 8.3

6.3 NRC Inspection Manual Chapter 0410 – Notices of Enforcement Discretion, March 13, 2013 (ADAMS Accession No. ML ML13072A127)

6.4 RG 1.177 – An Approach for Plant-Specific, Risk-Informed Decision Making: Technical Specifications, May 2011 (ADAMS Accession No. ML 100910008)

6.5 Amendment 248 for St. Lucie, Unit No. 1, "Issuance if Exigent Amendment No. 248 Regarding Technical Specifications Change to Allow a One-Time Extension of the Allowed Outage Time for One Inoperable Emergency Diesel Generator", July 26, 2019, (ADAMS Accession No. ML19203A166).

Table 2: Disposition and Resolution of Open Peer Review Findings and Self-Assessment Open Items				
Finding No.	**Supporting Requirement**	**Capability Category (CC)**	**Description**	**Disposition for DG One Time AOT Exension LAR**
F&O LE-D6-01	LE-D6	Not Met	The analysis does not consider an increased probability of thermally-induced steam generator tube rupture due to depressurized steam generators that may occur due to secondary side conditions as mentioned in item (b) of the S.R. In addition, because thermally-induced tube rupture follows hot leg integrity in the event tree, proper consideration of the conditional probabilities should be re-addressed to ensure that it is not receiving a lower probability than it should. As the plant ages, the analysis should also be cognizant that at some point the tubes should no longer be considered 'pristine.'	A change to XSGTI1 (1E-03 to 0.1) was needed to completely resolve this finding. The sensitivity case indicates that this change will increase the overall LERF by less than 1%, which is negligible. This finding has negligible impact on this risk-informed application. This change was implemented in the recent model SBK20.
F&O DA- 5-1	DA-D4	Met	The Seabrook PRA uses all operating experience when performing the Bayesian update. The use of all operating experience in the Bayesian update can provide non-conservative results for component failure probabilities. For example, if a component has been replaced, previous operating experience is no longer applicable for that component. (This F&O originated from SR DA-D4) Basis for Significance If a non-conservative distribution is used in the reasonableness check, it can skew the results of the check. Possible Resolution Ensure that the operating experience used in the data update is appropriate and applicable with current plant operations, and re-evaluate the Bayesian update. Otherwise, perform a sensitivity analysis with a shorter operating experience to assess the impacts of the current assumption.	The 2019 data update covers the period of July 1, 2013 through August 31, 2018, not all of Seabrook's operating experience. Considering the very small fraction of components in the database replaced during this time, the impact on failure rates is negligible.
F&O DA-5-3	DA-E1	Met	The following documentation issues were identified: 1) Table 13.6-1 of the Data Analysis shows the Bayesian validation of the Seabrook type codes. It is noted that the Bayesian update equations used for Beta distributions are incorrect. The equation used to update the beta parameter of the beta distribution should be B_prior + n_exposures - n_failures. The current equation used is B_prior + n_exposures. Note that the current equation used is not consistent with the CAFTA Bayesian update tool. 2) Section 13.6.2 of the Data Analysis discusses three conditions for checking the reasonableness of the Bayesian update. In the description of the conditions it should be stated '…5th percentile and less than the 95th percentile of the generic/posterior distribution.' 3) Section 13.6.2 states that the parameters of interest in the reasonableness check are the: mean values, 5th percentile value, and 95th percentile value. Table 13.6-1 does not provide the mean values. (This F&O originated from SR DA-E1) Basis for Significance These documentation issues need to be addressed to accurately describe the analysis. Possible Resolution 1) Update Table 13.6-1 to be consistent with the values and equations used in the CAFTA model. 2) Update the discussion in Section 13.6.2 to state 'distribution' instead of 'mean' when referring to the 5th and 95th percentile	Issues are documentation issues only. No impact.

Table 2: Disposition and Resolution of Open Peer Review Findings and Self-Assessment Open Items				
Finding No.	**Supporting Requirement**	**Capability Category (CC)**	**Description**	**Disposition for DG One Time AOT Exension LAR**
			values. 3) Provide the mean values for the distributions in Table 13.6-1.	
F&O DA-5-5	DA-E2	Met	The following documentation issues were identified: 1) A review of the CAFTA .rr database shows that there are 6 common cause groups making use of the MGL method: BUSFX, BUSFL, LINES, LINES. Y.R., LINESMNT, and LINESMNT.YR. A search of the System Analysis notebook states that for BUS56FX 'Note that MGL CCF parameters are used in the 2019 update because the 2015 update to NUREG/CR-5497 did not have information on switchgear CCF failure data.' This statement does not provide a reference to the data source used, and the data notebook does not provide this information either. 2) There is no discussion regarding the selection of staggered or non-staggered testing schemes and the use of these calculation methods for the CCF groups. (This F&O originated from SR DA-E2) Basis for Significance These documentation issues need to be addressed to accurately capture the analysis. Possible Resolution The following resolutions are recommended: 1) Update the data notebook to discuss the data source used for the MGL parameters still used in the PRA model, or update the MGL parameters to the generic alpha factors from the 2015 update of NUREG/CR-5497. 2) Add a clarifying statement to the Data Analysis regarding the selection of staggered or non-staggered testing schemes for the CCF groups. Discussions with Seabrook states that all CCF groups make use of a staggered testing scheme.	Documentation. No impact
F&O DA-5-7	DA-E2	Met	The Bayesian reasonableness check does not discuss any criteria for when there are 0 failures in the plant-specific experience. For these cases, none of the checks will pass the specified criteria. (This F&O originated from SR DA-E2) Basis for Significance There are cases where there were no failures in the plant-specific operating experience so there needs to be documentation of treatment for those cases. Possible Resolution Document the reasonableness check performed for cases where there are 0 plant-specific failures, and the criteria for determining whether or not the plant-specific operating experience is consistent with the prior distribution selected.	Documentation. No impact

Table 2: Disposition and Resolution of Open Peer Review Findings and Self-Assessment Open Items				
Finding No.	**Supporting Requirement**	**Capability Category (CC)**	**Description**	**Disposition for DG One Time AOT Exension LAR**
F&O HR-6-1	HR-G7	Not Met	1)Self assessment identifies limitations with manpower requirements and there still appear to be gapsbwith HRAC specific inputs for manpower. Additionally, execution locations are also not identified for all actions. 2)Not being able to reproduce results. Recreating the dependency analysis using the same cutsets that were used, and creating a combination event recovery rule file resulted in 860 combinations versus the documented 505 combinations in the Section 11 H.R. document Section 11.8.1.3. 3)Manual combination and dependency overrides lacked sufficient justification for assigned dependency levels. For example, combination of H.H.OFL0CW. F.L. and H.H.OFL1CW. F.A., the current justification taken is for larger timing separation between actions, however, the override taken is equivalent to intervening success. This isn't sufficient justification for the override taken. (This F&O originated from SR HR-G7) Basis for Significance Item 1 has direct impact on the dependency level on combinations of HFE's through the adequate resources decision tree node. The calculator requires the manpower fields or execution locations to be complete to work properly. Not having these filled out is not conservative, as the HRAC interprets the no locations as all dependent events as being in the same location thus inappropriately satisfying adequate resources requirement. Item 2 not being able to reproduce results brings the validity of the analysis into question. Item 3 The dependency overrides have a potentially large effect on model results. Possible Resolution Item 1 Fill out manpower or complete execution location fields for all post initiators. Item 2 Re-perform results and document more clearly so it can be reproduced for independent review. Item 3 Reassess any manual overrides, provide sufficient justification where applicable and readjust the overrides as needed.	The HRA for Seabrook has been redone. The dependency analysis is reproducible. Most of the dependency analysis overrides have been eliminated, and those that remain are justified. Manpower requirements are not included in the Seabrook HRA due to the lack of dynamic application and sufficient resolution. It is assumed that the control room staffing is adequate to address the EOP-required actions. Execution locations are provided for all the HFEs except those for post-core-damage actions. These only affect Level 2 results,.
F&O HR-6-3	HR-I1	MET	Section 3.0 of Section 11, Human Actions Analysis, discusses methodology and references PRA-106 "PRA Model Guidelines", Section 106E Methodology for Human Reliability Analysis. PRA-106 is the modeling information for RISKMAN. No discussion could be found for dependency analysis methodology in the conversion report. Similar issue was found to exist in Systems Analysis, Data Analysis, HRA, and Accident Sequence. (This F&O originated from SR HR-I1) Basis for Significance Documentation does not apply to the current methods for listed technical elements. Possible Resolution Update to reflect correct reference for methodology.	The new SBK HRA GDOC includes a new dependency analysis and documentation of the method.

Table 2: Disposition and Resolution of Open Peer Review Findings and Self-Assessment Open Items				
Finding No.	**Supporting Requirement**	**Capability Category (CC)**	**Description**	**Disposition for DG One Time AOT Exension LAR**
F&O HR-6-6	HR-E4	MET	There are instances where the information from Appendix 11.1A does not match the HRAC. See example below. H.H.OHSB1.FA Tcog 5 minutes versus Appendix 11.A1 Tcog of 20-30 minutes. Also Operator interview Insights in HRAC for H.H.OALT1. F.L. don't seem to match the interview documentation. This appears to be a systemic problem as there were other instances found. (This F&O originated from SR HR-E4) Basis for Significance Not entering timing from interviews affects the dependency analysis as well as not representing the as operated plant. Possible Resolution One possible resolution is to use the timing information from the interviews for input to the HRAC or justify an alternative such as current values.	H.H.OHSB1. F.A. is not in the SBK model or in the HRA Calculator. Operator insights in HRAC for H.H.OHSB1. F.A. show that the Tsw could be longer, so the HRAC for this HFE is likely conservative.
F&O QU-7-2	QU-B9	MET	Logic flags have not been set to TRUE or FALSE for all flags prior to the generation of cutsets. The current methodology sets logic flags to TRUE in the recovery rules which occurs after the generation of cutsets. Additional cutsets have been generated in the final results that should not exist as they are nonminimal. (This F&O originated from SR QU-B9) Basis for Significance Additional cutsets are being generated in the results due to flag events remaining in the model that are not set to TRUE or FALSE. For example, cutsets 358 and 405 are non-minimal with cutset 1977 (see CDF-POS123.CUT). Possible Resolution Set flags either to TRUE or FALSE prior to cutset generation (e.g., in the flag file), OR utilize a methodology whereby the quantifier can identify flag events.	Upon inspection, a minimum number of non-minimal cutsets were found in the latest quantification, resulting in a reduction in CDF of less than 0.3%. This will be remedied in the future by having the flags set to True and the cutsets subsumed at the beginning of the recovery rule file. Negligible impact, and in the conservative direction.

Table 2: Disposition and Resolution of Open Peer Review Findings and Self-Assessment Open Items				
Finding No.	**Supporting Requirement**	**Capability Category (CC)**	**Description**	**Disposition for DG One Time AOT Exension LAR**
F&O QU-7-5	QU-A3	Cat 1 Met Cat 2 Met Cat 3 Not Met	SOKC is not accounted for in some type codes that use identical data sets. One example is for the type codes NICB1C and NICB1O. Both of these type codes use the same data set, but since they are different type codes UNCERT does not take the same sample for both distributions. This appears to be a common approach when the generic data doesn't delineate between the different failure modes of a component. (This F&O originated from SR QU-E3) Basis for Significance State of knowledge correlation can impact the distribution of the overall CDF/LERF. Possible Resolution One possible resolution could be to Bayesian update these type codes with plant specific data to delineate the data sets such that the type codes used in the model do not use identical data sets. Another approach could be to use a single type code for both failure mode basic events such that the SOKC is taken into account. The resolution should be applied to all occurrences where the SOKC was broken.	SBK20 was updated as follows: Duplicate type codes eliminated · Combine the NICB1C and NICB1O type codes by replacing all instances of NICB1O with NICB1C. The NICB1C type code is now fully correlated with the Circuit Breaker Fail to close industry dataset. · Combine the NICB1T and NICB2T type codes by replacing all instances of NICB2T with NICB1T. The NICB1T type code is now fully correlated with the Circuit Breaker Fail to close industry dataset. · Combine the NIDAOD and NIDBBD type codes by replacing all instances of NIDBBD with NIDAOD. The NIDAOD type code is now fully correlated with the Circuit Breaker Fail to close industry dataset. · Combine the NIPLFD and NIPLLD type codes by replacing all instances of NIPLFD with NIPLLD. The NIPLLD type code is now fully correlated with the Circuit Breaker Fail to close industry dataset. · Combine the NISTCD and NISTRD type codes by replacing all instances of NISTRD with NISTCD. The NISTCD type code is now fully correlated with the Circuit Breaker Fail to close industry dataset. · Combine the NITRFR and NITRLR type codes by replacing all instances of NITRFR with NITRLR. The NITRLR type code is now fully correlated with the Circuit Breaker Fail to close industry dataset. · Combine the NIUVCD and NIUVDD type codes by replacing all instances of NIUVDD with NIUVCD. The NIUVCD type code is now fully correlated with the Circuit Breaker Fail to close industry dataset. · Combine the NIVAOD and NIVAOF type codes by replacing all instances of NIVAOF with NIVAOD. The NIVAOD type code is now fully correlated with the Circuit Breaker Fail to close industry dataset. · Combine the NIXR1R and NIXR3R type codes by replacing all instances of NIXR3R with NIXR1R. The NIXR1R type code is now fully correlated with the Circuit Breaker Fail to close industry dataset.

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Finding No.	**Supporting Requirement**	**Capability Category (CC)**	**Description**	**Disposition for DG One Time AOT Exension LAR**
F&O QU-7-7	QU-F2	MET	1) The FTREX.ini file was not documented. This is necessary to quantify the model and is significant because the default method is not used. 2) The criteria establishing convergence is based on <=5% change when compared to the next decade. The example in the standard uses a <5% final change. The final change is interpreted as calculating the percent change at the current truncation level with respect to the previous decade truncation level not the next. The criteria used is adequate, but there is no documentation of definition used to establish convergence. 3)There is no discussion of the top basic events and why they make logical sense. A general statement that notes that basic events importance's were reviewed to ensure they make logical sense is not sufficient evidence for the actual review taking place. 4) There is no documentation of how the circular logic is broken. A demonstration was performed that identified a couple examples of where in the model circular logic was broken. This identification and modeling technique needs to be documented. (This F&O originated from SR QU-F2) Basis for Significance 1) Without the .ini file it is difficult/impossible to reproduce the quantitative results. 2) Since the definition of convergence is not the same as the example in the standard, it needs to be defined in the documentation. 3) Without the discussion of the top basic events to ensure they make logical sense it is not clear that a detailed review was performed. After discussion with the Seabrook PRA staff, it was determined that the review was performed but not documented. 4) Without documentation it is difficult/impossible to review and determine that the circular logic was broken appropriately. Possible Resolution 1) Include in the documentation the .ini file or include enough information such that the .ini file could be recreated. For example mentioning that FTREX wrapper was used with WRAP method 3. 2) Update the documentation to include the definition of convergence used. 3)Update the review to include a discussion of the top basic events and why they make logical sense. 4) Document all occurrences of where circular logic was broken and how it was broken.	Documentation issues. The latest model shows acceptable convergence. No impact.
F&O QU-7-10	QU-D6	MET	Component importance measures were not identified. The supporting requirement specifically requires the identification of significant SSCs. (This F&O originated from SR QU-D6) Basis for Significance Not identifying component importance measures can result in the loss of insights for top risk contributors. Possible Resolution Identify and include component importance measures consistent with the definition of significant contributors.	This is documented in GDOC SBK-1FJR-19-042.

ATTACHMENT 1

PROPOSED TECHNICAL SPECIFICATION PAGE (MARKUP)

(1 page follows)

3.8.1.1 (Continued)

ACTION:

b. With a diesel generator inoperable:

1) Demonstrate the OPERABILITY of the remaining A.C. sources by performing Specification 4.8.1.1.1a within 1 hour and at least once per 8 hours thereafter. Perform ACTION d. Demonstrate the OPERABILITY of the remaining diesel generator by performing Specification 4.8.1.1.2a.5) within 24 hours.*

2) Restore at least two diesel generators to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours, unless the following condition exists:

(a) The requirement for restoration of the diesel generator to OPERABLE status within 72 hours may be extended to 14* days if the Supplemental Emergency Power System (SEPS) is available, as specified in the Bases, and

(b) If at any time the SEPS availability cannot be met, either restore the SEPS to available status within 72 hours (not to exceed 14 days from the time the diesel generator originally became inoperable), or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

* A one-time AOT extension for an inoperable diesel generator allows 30 days to restore the associated diesel generator to OPERABLE status. Compensatory measures within NEE Letter SBK-L-20068 dated July 13, 2020 will remain in effect during the extended AOT period. The one-time AOT extension shall expire upon completion of the maintenance or 90 days after the issuance of the amendment, whichever comes first.

successfully operated within the last 24 hours, or if currently operating, or if the diesel generator became inoperable due to:

1. Preplanned preventive maintenance or testing,

2. An inoperable support system with no potential common mode failure for the remaining diesel generator, or

3. An independently testable component with no potential common mode failure for the remaining diesel generator.