



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**  
WASHINGTON, D.C. 20555-0001

August 1, 2018

Mr. H. Curtis Spalding, Regional  
Administrator  
U.S. Environmental Protection Agency  
Region 1  
5 Post Office Square, Suite 100  
Boston, MA 02109-3912

**SUBJECT: RESPONSE TO ENVIRONMENTAL PROTECTION AGENCY COMMENTS  
REGARDING THE FINAL PLANT-SPECIFIC SUPPLEMENT 46 TO THE  
GENERIC ENVIRONMENTAL IMPACT STATEMENT FOR LICENSE  
RENEWAL OF NUCLEAR PLANTS REGARDING SEABROOK STATION,  
UNIT 1**

Dear Mr. Spalding:

The U.S. Nuclear Regulatory Commission (NRC) staff is in the final stages of its review of the NextEra Energy Seabrook, LLC's (NextEra) application for renewal of the Seabrook Station (Seabrook), Unit 1, operating license for an additional 20 years. The NRC is charged with the responsibility of reviewing and approving the license renewal application pursuant to Section 103 of the Atomic Energy Act of 1954, as amended. This letter responds to your letter (Agencywide Documents Access and Management System (ADAMS) Accession No. ML17164A016) dated September 14, 2015, regarding the Environmental Protection Agency (EPA) comments on the final Supplemental Environmental Impact Statement (SEIS) pertaining to the license renewal of Seabrook, Unit 1 (NUREG-1437, Supplement 46). The staff appreciates your input and assistance in reviewing and commenting upon the SEIS for the Seabrook license renewal.

As a part of its review of the Seabrook license renewal application, the NRC staff prepared a "Generic Environmental Impact Statement for License Renewal of Nuclear Plants, Supplement 46, Regarding Seabrook Station, Unit 1" pursuant to the National Environmental Policy Act of 1969, as amended. The staff worked with you and others at the EPA, Region 1, on the review of this SEIS, as appropriate. The final SEIS conclusion states: "the NRC staff's recommendation is that the adverse environmental impacts of license renewal for Seabrook are not great enough to deny the option of license renewal for energy planning decision makers."

As noted in your letter, EPA has four comments on the FSEIS for Seabrook license renewal: (1) cooling water withdrawal and discharge; (2) National Pollutant Discharge Elimination System; (3) groundwater contamination monitoring and reporting; and (4) future consideration of decommissioning impacts.

Regarding comment (1), EPA restated and elaborated on its comments on the draft SEIS (DSEIS) regarding entrainment and impingement impact findings. The NRC staff acknowledges the EPA's recommendations that impacts for winter flounder and rainbow smelt be rated as LARGE. As described in Section 4.6.5 of the draft and final SEIS, the NRC staff concluded that the impacts to winter flounder and rainbow smelt would be LARGE. EPA observed that the

NRC staff did not change the conclusion for silver hake to be MODERATE, and EPA also noted that Response 014-3 in Appendix A.2 of the final SEIS provided a rationale for the staff conclusion of SMALL impact for silver hake. This is discussed in Section 4.6 of the FSEIS (instead of Section 4.5 cited in Response 014-3).

EPA also reiterated its comment on NRC's DSEIS, which called for a more complete evaluation of alternative plant cooling systems that would consider operational impacts, such as entrainment and impingement losses. EPA noted that the NRC's response to its comment on the DSEIS (i.e., Response 014-2 contained in Appendix A.2 of the FSEIS) indicated that the staff added a new closed-cycle alternative in Section 8.4 of the final SEIS, which examined potential environmental impacts, such as impingement and entrainment, from closed-cycle cooling. In addition, the NRC staff's response stated that an expanded discussion of mitigation measures was added to Section 4.5.4 of the FSEIS. The NRC staff acknowledges that this 4.5.4 cross-reference was an error as the expanded discussion is included in Section 4.6.4 of the FSEIS. Lastly, the EPA noted that it continues to support measures to reduce entrainment and impingement impacts.

Regarding comment (2), EPA provided information regarding recent changes in the National Pollutant Discharge Elimination System (NPDES) permitting requirements applicable to Seabrook including EPA's final regulations implementing Clean Water Act Section 316(b) (79 FR 48300, August 15, 2014). The NRC staff acknowledges the information provided by EPA. As referenced by EPA, the final regulations at 40 CFR Part 125, Subpart J, prescribe the use of best technology available (BTA) for minimizing adverse environmental impacts associated with cooling water intake structures at existing facilities and that EPA's final regulations implementing Section 316(b) for existing facilities applies to Seabrook. The NRC was unable to reference the August 15, 2014, issuance in its FSEIS because EPA's final regulations had not been published by the time the NRC's environmental review had been concluded and the Seabrook FSEIS was being prepared for publication. Nevertheless, in Section 4.6 of the FSEIS, the NRC staff acknowledged NextEra's requirement to employ BTA and described the documents prepared by NextEra as part of the NPDES permitting process and in support of EPA's assessment of BTA under the 316(b) Program. The NRC staff also presented mitigation measures recommended by EPA, National Marine Fisheries Service (NMFS), and the New Hampshire Environmental Services (NHDES) in Section 4.6.4 of the FSEIS, which may include measures to obtain BTA.

Since publication of the FSEIS, NHDES issued a Water Quality Certification to NextEra (ML16239A394), which concludes that continued operations of Seabrook will be consistent with New Hampshire surface water quality standards. In the Water Quality Certification, NHDES states that the most recent NPDES individual permit issued to NextEra (in 2002) (permit number NH0020338)<sup>1</sup> determined that Seabrook's cooling water intake system employs the BTA for minimizing adverse impacts. NHDES also indicates in the certification that the next time an NPDES permit is issued, EPA will need to determine whether the present design employs the BTA as defined in the 2014 316(b) rulemaking. The applicant informed the NRC (ML18121A403) that as of May 2018, the EPA has not yet issued a renewed NPDES permit to NextEra for Seabrook operations; the NPDES permit from 2002 remains administratively continued and in effect.

Regarding comment (3), EPA restated its concern, as expressed in comments on the draft SEIS, that information on groundwater contamination at Seabrook should be easily accessible

---

<sup>1</sup> NextEra has also maintained coverage under an NPDES Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity (MSGP) for Seabrook Station.

and that the NRC should improve its transparency with respect to how it deals with groundwater tritium contamination issues. EPA further offers that NRC's practices for communicating with the public on groundwater issues at Seabrook are difficult to understand and inadequate for scientific evaluation of groundwater management practices. Additionally, EPA suggested that the FSEIS did not adequately address EPA's comment on the draft SEIS regarding groundwater sampling for other contaminants of concern (i.e., metals and other radionuclides from the spent fuel pool). Finally, EPA notes that many of the NRC groundwater initiatives are conducted under voluntary programs that are not subject to regulatory oversight and strongly recommends that the NRC take a proactive approach to addressing and preventing groundwater contamination, including the addition of additional groundwater sampling and hydrogeologic assessment. The NRC staff acknowledges the EPA's concerns and suggestions in these areas, with the following clarifications.

The NRC prepared the Seabrook FSEIS in accordance with NEPA and the NRC's regulations for implementing NEPA at 10 CFR Part 51. As explained in Section 1.4 of the FSEIS, the NRC published a final rule in 2013 revising 10 CFR Part 51, including the list of NEPA issues and findings contained in Table B-1 in Appendix B to Subpart A of 10 CFR Part 51 to be considered in environmental reviews for license renewal of nuclear power plant operating licenses. The NEPA issues considered by the NRC staff are divided into Category 1 and Category 2. The NRC addressed Category 1 issues generically for all nuclear power plants in the GEIS (ML13105A241, ML13106A242, and ML13106A244). Thus, for Category 1 issues, no additional site-specific analysis is required in a SEIS unless new and significant information is identified. Category 2 issues require that the nuclear power plant licensee and the NRC staff perform a site-specific technical evaluation. With respect to groundwater quality, there was one new Category 2 issue considered by the NRC staff in the FSEIS, "Radionuclides released to Groundwater." Section 4.5.3 of the Seabrook FSEIS presents the NRC staff's analysis of this issue.

With respect to general issues of information availability and transparency, NRC strives to be proactive in making information relevant to its licensees and the activities it regulates available to the public through such venues as its Web site and topic-specific web pages; its online document retrieval system (i.e., ADAMS); Public Document Room; Public Affairs Office; as well as at public meetings specific to licensed activities. For example, on an annual basis and under the NRC's Reactor Oversight Process (ROP), NRC staff holds a meeting with Seabrook representatives to discuss the results of the NRC's annual assessment of safety performance. These meetings are open to the public. Up-to-date information on Seabrook's operational performance, including radiation safety, is available through the NRC's web page at <https://www.nrc.gov/reactors/operating/oversight/plant-by-plant-summaries.html>. NRC also maintains a dedicated Web page for disseminating information specific to radionuclides in groundwater at nuclear power plants including at <https://www.nrc.gov/reactors/operating/ops-experience/tritium/sites-grndwtr-contam.html>. This page includes links to the annual radiological effluent release and annual radiological environmental operating reports which licensees are required to submit to the NRC. These reports contain applicable information on site groundwater chemistry.

The NRC agrees that a proactive approach to addressing and preventing groundwater contamination is essential. With respect to radiological constituents, all nuclear power plant licenses must keep releases of radioactive material into the environment as low as is reasonably achievable (ALARA), as required by 10 CFR 50.36a, "Technical specifications on effluents from nuclear power reactors" and 10 CFR 72.44, "License conditions," as applicable. Radiological releases, either normal permitted discharges in accordance with NRC regulations

or inadvertent releases, are governed by NRC regulations and are part of the NRC's inspection program. In accordance with 10 CFR 50.75(g), "Reporting and recordkeeping for decommissioning planning," NRC licensees must also keep records of radiological information important to the safe and effective decommissioning of the facility. These records include information on known leaks, spills, or other unusual occurrences involving the spread of contamination in and around the reactor facility. Such records of spills and leaks are periodically reviewed by NRC inspectors. Operating reactor licensees are also required by 10 CFR 20.1501, "Subpart F—Surveys and Monitoring, General" of the NRC's regulations to conduct subsurface surveys to identify and characterize any contamination. At Seabrook, NextEra has implemented onsite groundwater monitoring that satisfies the subsurface survey requirements of 10 CFR 20.1501. Ultimately, the NRC has full authority to take necessary actions to protect public health and safety, and as such, the NRC may demand immediate licensee actions.

However, regarding nonradiological contamination, the NRC has limited authority to regulate nonradiological constituents at a nuclear power plant site, as such contamination is regulated by other Federal, State, and local agencies. Specifically, the NRC has no statutory or regulatory authority over matters that fall under the Clean Water Act, including the NPDES permit program; Safe Drinking Water Act; and the Resource Conservation and Recovery Act, as may be delegated to the states. Therefore, the NRC defers to the EPA or delegated State agencies with respect to these matters. Furthermore, the NRC cannot impose monitoring requirements for nonradiological constituents or mitigation measures that are not related to public health and safety from radiological hazards or common defense and security. Under the authority of the Atomic Energy Act (AEA), the NRC's primary mission is to protect the public health and safety from the effects of radiation from nuclear reactors, materials, and waste facilities. The NRC's regulatory limits for radiological protection are set to protect workers and the public from the harmful health effects of radiation on humans, consistent with EPA guidelines, as appropriate.

Regarding comment (4), EPA provided comments on potential decommissioning and cleanup issues relevant to Seabrook including disposal issues associated with decommissioning of other nuclear power plants in New England. EPA specifically cited ongoing rulemaking under the Toxic Substances Control Act that may require the removal of polychlorinated biphenyls (PCBs) from cables, transformers, and other materials that may be present at Seabrook. The NRC is aware of EPA's reassessment of its regulations governing the use of PCBs in electrical equipment and other applications. NRC's licensees are responsible for conducting decommissioning activities in accordance with all applicable Federal, State, and local statutes and regulations, and for doing so in accordance with NRC regulations in 10 CFR 50.82, "Termination of license" of the NRC's regulations. Potential environmental impacts associated with decommissioning of Seabrook are discussed in Chapter 7 of the FSEIS, which includes a discussion of the staff review in the *Generic Environmental Impact Statement on Decommissioning of Nuclear Facilities: Supplement 1, Regarding the Decommissioning of Nuclear Power Reactors*, NUREG-0586, Supplement 1 (NRC 2002) and the *Generic Environmental Impact Statement for License Renewal of Nuclear Plants (GEIS)*, NUREG-1437, Volumes 1 and 2 (NRC 1996, 1999).

If you have any questions regarding this matter, please contact the license renewal project manager, Mr. Tam Tran, at 301-415-3617 or e-mail [tam.tran@nrc.gov](mailto:tam.tran@nrc.gov).

Sincerely,

*/RA/*

George A. Wilson Jr., Director  
Division of Materials and License Renewal  
Office of Nuclear Reactor Regulation

Docket No. 50-443

cc w/encl: Listserv

SUBJECT: RESPONSE TO ENVIRONMENTAL PROTECTION AGENCY COMMENTS  
REGARDING THE FINAL PLANT-SPECIFIC SUPPLEMENT 46 TO THE  
GENERIC ENVIRONMENTAL IMPACT STATEMENT FOR LICENSE  
RENEWAL OF NUCLEAR PLANTS REGARDING SEABROOK STATION,  
UNIT 1

**DISTRIBUTION:**

RidsOgcMailCenter Resource  
RidsNrrMailCenter Resource

---

EGettys  
TTran  
EOesterle  
BBeasley  
GWilson  
JDonoghue  
LRonewicz  
JPoole  
JDanna  
DMcIntyre  
JWeil, OCA  
AMoreno, OCA  
BHarris, OGC  
AGhosh, OGC  
JWatchuka, OGC  
MGray, RI  
FBower, RI  
PCataldo, RI  
PMeier, RI  
RBarkley, RI  
RVadella, RI  
MDraxton, State Liason  
DTiff, State Liason  
NSheehan, RI PAO  
DScrenci, RI PAO

[Eric.McCartney@nexteraenergy.com](mailto:Eric.McCartney@nexteraenergy.com)  
[Edward.Carley@nexteraenergy.com](mailto:Edward.Carley@nexteraenergy.com)  
[Christine.Thomas@nexteraenergy.com](mailto:Christine.Thomas@nexteraenergy.com)  
[Kenneth.J.Browne@nexteraenergy.com](mailto:Kenneth.J.Browne@nexteraenergy.com)

**ADAMS Accession No.: ML18156A543**

\*concurred via email

<b>OFFICE</b>	PM:MRPB:DMLR*	LA:DMLR	OGC/NLO	BC:MRPB:DMLR
<b>NAME</b>	TTran	YEdmonds	AGhosh	E. Oesterle
<b>DATE</b>	6/14/18	6/14/18	7/9/18	7/31/18
<b>OFFICE</b>	BC:MENB:DMLR	D:DMLR		
<b>NAME</b>	BBeasley	GWilson		
<b>DATE</b>	7/27/18	8/1/18		

**OFFICIAL RECORD COPY**