



February 8, 2017

10 CFR 50.55a

Docket No. 50-443
SBK-L-17031

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
One White Flint North
11555 Rockville Pike
Rockville, MD 20582

Seabrook Station

Clarifications to Relief Request RA-17-002, Proposed Alternative in Accordance with 10 CFR 50.55a(z)(2)

References:

1. NextEra Energy Seabrook, LLC letter SBK-L-17027, "Seabrook Station Relief Request RA-17-002, Proposed Alternative in Accordance with 10 CFR 50.55a(z)(2)", February 6, 2017 (ML17038A265)
2. NRC e-mail "SBK-L-17027 (Seabrook Station Relief Request)" February 7, 2017 (ML17038A564)

In Reference 1, NextEra Energy Seabrook, LLC (NextEra) requested relief to allow performance of a temporary, non-ASME code repair to the Seabrook Station Unit 1 Service Water (SW) system. In Reference 2, the NRC requested clarifications needed to complete their review.

There are no commitments being made in this submittal.

If you have any questions regarding this submittal, please contact me at (603) 773-7932.

Sincerely,

NextEra Energy Seabrook, LLC

A handwritten signature in dark ink that reads "Christine Themas for".

Kenneth J. Browne
Licensing Manager

Attachment:

Clarifications to Relief Request RA-17-002, Proposed Alternative in accordance with
10 CFR 50.55a(z)(2)

cc:

D. H. Dorman, NRC Region I Administrator
J. C. Poole, NRC Project Manager
P. C. Cataldo, NRC Senior Resident Inspector

Attachment to SBK-L-17027

Clarifications to Relief Request RA-17-002
Proposed Alternative in accordance with 10 CFR 50.55a (z)(2)

**Seabrook Station Unit 1 10 CFR 50.55a Clarifications to Relief Request RA-17-002
Proposed Alternative in Accordance with 10 CFR 50.55a(z)(2)**

Background

On February 6, 2017, NextEra Energy Seabrook, LLC (NextEra) requested relief to allow performance of a temporary, non-ASME code repair to the Seabrook Station Unit 1 Service Water (SW) system. On February 7, 2017, via e-mail, the NRC requested clarifications needed to complete their review. The information below provides the clarifying information.

NRC Question 1

Section 1, first paragraph (page 1) of the relief request, identifies an acronym 'PCCW'. CW stands for circulating water. What is 'PC'?

NextEra Response to Question 1

PCCW stands for Primary Component Cooling Water.

NRC Question 2

Section 4, first paragraph, page 2, of the relief request states that the system design pressure is 150 psi. The paragraph also states that the maximum operating pressure is 170 psi. The design pressure should always be higher than the maximum operating pressure based on the ASME Code. Explain why the maximum operating pressure is higher than the design pressure.

NextEra Response to Question 2

ASME NCA-2142.1 defines Design Pressure as being not less than the maximum pressure difference which exists under the most severe loadings for which the service level A limits apply. NCA-2142.4 states that service level A loadings are those identified in the Design Specifications to which the component may be subjected when performing its specified service function. The maximum operating pressure of 171 psi discussed in the relief request corresponds to level C (Emergency) and level D (Faulted) service loading resulting respectively from a Small break LOCA and Large break LOCA.

NRC Question 3

Section 4 states that "...the ASME Code required minimum pipe wall was calculated to be 0.105 inch based upon a system design pressure of 150 psi. In accordance with Code Case N-513-3 criteria, a value of 0.120 inch was calculated based upon maximum operating pressure of 171 psi...only two locations were identified to have resulting wall thickness values below the Code required minimums. These two are not through wall and have remaining wall values of 0.089 inch...and 0.117 inch..." Section 7.1 (top of page 4) states that "...Conservatively using a value of 110 psi, the N-513-3 required minimum pipe wall for maximum operating pressure is 0.077 inch..." All 3 wall thickness values, 0.105, 0.120, and 0.077 inches are identified as Code required minimums in the above statements. However, specify the exact Code required minimum wall thickness that is used for the regulatory purpose

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Proposed Alternative in Accordance with 10 CFR 50.55a(z)(2)

of the proposed relief request (i.e., the relief request would expire when and if the measured wall thickness is less than the code required minimum).

NextEra Response to Question 3

For the purposes of the proposed relief request, the value of 0.077 inch, derived in accordance with N-513-3 for Emergency/Faulted service pressure of 110psi, is used as the required minimum.

NRC Question 4

First paragraph of page 4 states that "...The original analysis assumed the pump shutoff head was 325 ft. which was subsequently reduced to 250 ft. or 107.2 psi..." Discuss why the pump shutoff head was reduced.

NextEra Response to Question 4

Around 2000, Seabrook replaced the cooling tower pump columns, pump bowls, suction bells, shafting, and impellers with upgraded materials. The original pumps had experienced bolting degradation, crevice corrosion of the column flanges, and pitting corrosion of the suction bells and pump bowls. The replacement pumps were single stage pumps rather than the original two stage pumps, resulting in a flatter pump curve. This required a lower shut-off head to meet the pump design point. The lower shut-off head resulted in the maximum operating pressure of 110 psi at the leak location that is used to calculate the minimum wall thickness of 0.077 inches provided in the relief request.

NRC Question 5

The table on page 3 of the relief request (page 6 of 38 pdf file) provides the minimum wall thickness of Flaw Numbers 1, 2, and 3 that are located at specific location of the pipe. Page 35 of 38 pdf (an email from Scott Hamel to Henry Mentel) provides a table showing the measure wall thickness at specific azimuthal position of the pipe. The wall thickness for the flaw at 125 degree Azimuthal is measured to be 0.19 inches as shown on page 35 of 38. However, the corresponding flaw in table of page 3 shows a minimum thickness of 0.117 inches. Clarify whether the wall thickness at the 125 Azimuthal degree position is 0.117 inches or 0.19 inches.

NextEra Response to Question 5

Page 35 of 38 pdf is the Attachment A email to the flaw stability calculation prepared to demonstrate structural integrity. That email transmitted the initial, best effort attempt UT results, prior to the removal of paint on the exterior of the pipe and was conservatively used in the stability calculation due to the initially larger through wall size. The table on page 3 of the relief request is from the final UT performed after paint removal. The wall thickness at the 125.2 Azimuthal degree location is 0.117 inch.