



February 22, 2022
NRC 2022-0006

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington DC 20555-0001

RE: Point Beach Nuclear Plant, Unit 1
Docket No. 50-266
Renewed Facility Operating Licenses DPR-24

Notification of Deviation from Pressurized Water Owners Group (PWROG) Report WCAP-17451-P, Revision 1, Reactor Internals Guide Tube Wear - Westinghouse Domestic Fleet Operational Projections

References:

1. Pressurized Water Owners Group (PWROG) Report WCAP-17451-P, Reactor Internals Guide Tube Wear - Westinghouse Domestic Fleet Operational Projections, Revision 1, October 2013
2. Nuclear Energy Institute (NEI) 03-08 Guideline for the Management of Materials Issues, Revision 4, October 2020

NextEra Energy Point Beach, LLC (NextEra) hereby provides notification of a change to the Control Rod Guide Tube (CRGT) guide card examination frequency for Point Beach Nuclear Plant Unit 1 (Point Beach). The change represents a deviation from PWR Owners Group report WCAP-17451-P (Reference 1), which establishes the CRGT Guide Card Wear Measurement (GCWM) examination requirements as a "Needed" work product element for licensee reactor internals aging management programs. Nuclear Energy Institute (NEI) 03-08 (Reference 2), which provides requirements for "Needed" (versus mandatory) work product elements, allows deviations with the appropriate justification and documentation.

On January 14, 2022, NextEra approved an extension of the CRGT guide card examination frequency from 10 Effective Full Power Years (EFPY) to 20 EFPY in order to align with the latest industry approved CRGT guide card evaluation methodology (WCAP-17451-P, Revision 2). In NextEra letter ENG/JW-FPE-22-001, dated January 26, 2022, NextEra notified the PWROG of the intended deviation from the examination requirements of WCAP-17451-P, Revision 1, for Point Beach Unit 1.

The attachment to this letter provides NextEra report, "Point Beach Unit 1 Guide Card Wear Measurements Technical Justification Deviation from Examination Schedule in PWROG WCAP-17451-P, Revision 1". In accordance with NEI 03-08, Revision 4, this notification is being provided for information only and no action is being requested from the NRC staff.

If you have any questions regarding this letter, please contact Mr. Thomas Schneider, Point Beach Licensing, at 920-755-7977

This letter contains no new regulatory commitments.

Sincerely,



Eric Schultz
Point Beach Licensing Manager
NextEra Energy Point Beach, LLC

cc: USNRC Regional Administrator, Region III
Project Manager, USNRC, Point Beach Nuclear Plant
Resident Inspector, USNRC, Point Beach Nuclear Plant
Public Service Commission of Wisconsin

Attachment - Point Beach Unit 1 Guide Card Wear Measurements Technical Justification Deviation from Examination Schedule in PWROG WCAP-17451-P Revision 1

ATTACHMENT

Point Beach Unit 1 Guide Card Wear Measurements Technical Justification Deviation from Examination
Schedule in PWROG WCAP-17451-P, Revision 1

4 pages follow

Point Beach Unit 1 Guide Card Wear Measurements Technical Justification Deviation from Examination Schedule in PWROG WCAP-17451-P Revision 1**Reason for Evaluation:**

Point Beach Unit 1 has elected to defer the re-inspection of the Control Rod Guide Tube (CRGT) guide cards from the spring 2022 refueling outage (P1R40) to the fall 2032 outage (P1R47) or prior to 20 Effective Full Power Years (EFPY) from the last inspection. The CRGT guide cards were last inspected during the spring 2013 refueling outage (U1R34). This is a deviation from the NEI 03-08 "Needed" requirement specified in WCAP-17451-P, Revision 1 [Ref. 1].

The CRGT guide card wear measurements (GCWM) require re-inspection no later than 10 calendar years after the baseline inspections per WCAP-17451-P, Revision 1, "unless adequate justification allows additional time," [Ref. 1]. The CRGT GCWM and CRGT guide card inspections are used interchangeably herein. The worst worn guide tube is at core location G11, and it was limited to 9.1 EFPY from the spring 2013 refuel outage per WCAP-17451-P, Revision 1 [Ref. 7].

In lieu of the 10-year maximum re-inspection limit, this deviation defers the Point Beach Unit 1 CRGT guide card re-inspection to a maximum of 20 EFPY after the baseline inspections per WCAP-17451-P, Revision 2 [Ref. 2], which is the latest industry approved revision of the CRGT guide card evaluation guidance. The industry approved 20 EFPY re-inspection frequency in Rev. 2 of WCAP-17451-P, and it is referenced in MRP-227 Rev. 2, which is currently being reviewed by the NRC. Point Beach Unit 1 evaluated the baseline CRGT guide card inspection data using WCAP-17451-P Revision 2, and it supports a re-inspection interval of 20 EFPY from the spring 2013 refuel outage for all the CRGTs including the limiting CRGT at G11, [Ref. 7].

This is a change from the NEI 03-08 "Needed" requirement to use WCAP-17451-P Revision 1, which is referenced in WCAP-17096-NP Revision 2-A [Ref. 4]. WCAP-17096-NP Revision 2-A contains acceptable evaluation methodologies for reactor vessel internals for implementing MRP-227 Rev. 1-A, including the CRGT guide cards. The NRC acceptance of WCAP-17096-NP Revision 3 [Ref. 5], which references use of WCAP-17451-P Revision 2 for the CRGT guide cards, is currently delayed due to ongoing issue resolution with other acceptance criteria methodologies within WCAP-17096-NP Revision 3.

Per NEI 03-08 [Ref. 6], a "Needed" work product is "to be implemented wherever possible, but alternative approaches are acceptable". When a utility determines that a "Needed" work product will not be fully implemented or will not be implemented in a manner consistent with their intent, or when a work product will not be implemented within the timeframe specified, a technical justification for the deviation shall be developed. This evaluation justifies delay of the Point Beach Unit 1 CRGT guide card inspections.

Expected Duration for which Justification/Deviation applies: This deviation will apply until 2032 or when 20 EFPY is reached from the spring 2013 refuel outage for Point Beach Unit 1. It is anticipated the industry guidance, WCAP-17096-NP Revision 3, will be approved in the subsequent 1-2 years, which includes endorsement of WCAP-17451-P Revision 2. Once WCAP-17096-NP Rev. 3 is approved by the NRC, the 20 EFPY Deviation would be in accordance with the latest guidance.

Detailed Evaluation:

In support of license renewal activities, there are nine Primary Components that must be inspected for a Westinghouse Pressurized Water Reactor (PWR) in accordance with MRP-227 Revision 1-A industry guidance [Ref. 3]. The CRGT guide cards are considered one Primary component in MRP-227 Rev. 1-A. The GRGTs are part of the upper internals and provide guidance of the Rod Cluster Control Assemblies (RCCAs) above the core fuel assemblies. Each CRGT houses one RCCA that is made up of long, slender rodlets attached to a drive rod by a coupling fixture called a spider. The drive rod steps the RCCA into and out of the fuel assemblies. If needed for core shutdown, the RCCAs can also be released to allow them to drop into the fuel assembly. The individual rodlets are guided inside the CRGTs by approximately one-inch-thick guide cards. The guide cards are located about one foot apart and are guided by a continuous guidance assembly located at the bottom of the lower CRGT assembly. Guide card wear is a primary concern due to the possibility of the loss of guidance of the control rodlets inside of a CRGT. The unsupported length of a rodlet will increase if a loss of guidance occurs.

WCAP-17451-P, Revision 1 is referenced in MRP-227 Rev. 1-A for implementation of the CRGT guide card exams and in WCAP-17096-NP Rev. 2-A for acceptable evaluation methodologies; both documents are the latest NRC-approved documents. In MRP-227 Rev. 1-A, it references WCAP-17451-P Rev. 1, and it states CRGT guide card re-inspections may have, "flexible subsequent examination regimens correlating to initial baseline sample size, accuracy of wear estimation, and examination results", [Ref. 3]. In WCAP-17451-P Revision 1, the re-inspection interval for CRGT guide cards inspections is limited to 10 years. However, the industry approved a 20 EFPY maximum re-inspection frequency in Rev. 2 of WCAP-17451-P, and it is referenced in MRP-227 Rev. 2. MRP-227 Rev. 2 is currently being reviewed by the NRC. Similarly, the Rev. 2 of WCAP-17451-P is referenced in WCAP-17096-NP Rev. 3, which is also currently being reviewed by the NRC.

During the spring 2022 outage, Point Beach Unit 1 plans to perform a full core offload and plans to complete VT-3 and EVT-1 visual examinations of the reactor vessel and internals and to perform ultrasonic testing (UT) examinations of the baffle former bolts in accordance with MRP-227 Rev. 1-A. The CRGT guide card inspections are not planned since a technical justification using the guidance in WCAP-17451-P Revision 2 supports a 20 EFPY re-inspection interval. It was also anticipated the new methodology would be endorsed by the NRC via reference in WCAP-17096-NP Rev. 3 before the spring 2022 refueling outage (U1R40). The CRGT guide card inspections will require an additional level of risk in the spring 2022 refuel outage associated with coordination and execution of the large scope of inspection activities. There is significant added cost without any technical benefit. Deferring the CRGT guide card inspections to the 2032 refueling outage (U1R47) or within 20 EFPY from the spring 2013 refueling outage, facilitates a favorable outage work risk profile and cost with no compromise on safety.

At the End of Cycle (EOC) 39 (October 2020), Point Beach Unit 1 had 40.76 cumulative effective full power years (EFPY), [Ref. 8]. At the time of the baseline CRGT GCWM examination performed during spring 2013, Point Beach Unit 1 was at 33.64 EFPY [Ref. 7]. The worst worn guide tube is at core location G11, and it was limited to 9.1 EFPY from the spring 2013 refuel outage per WCAP-17451-P, Revision 1 [Ref. 7]. Conservatively, assuming 1.5 EFPY per 18-month fuel cycle, shows Point Beach Unit 1 reaches 20 EFPY at approximately 52.8 EFPY or at the end of cycle 47. This corresponds with approximately 20 years from the spring 2013 refuel outage. Point Beach Unit 1 reaches 9.1 EFPY from the spring 2013 outage or 42.74 EFPY ($33.64 \text{ EFPY} + 9.1 \text{ EFPY} = 42.74 \text{ EFPY}$) during the spring 2022 outage. Point

Beach is projected to reach 42.26 EFPY during the spring 2022 outage, (40.76 EFPY @ EOC 39 + 1.5 EFPY/cycle). Per WCAP-17451-P Revision 2, it supports a re-inspection interval of 20 EFPY from the spring 2013 refuel outage for all the CRGTs including the limiting CRGT at G11, [Ref. 7].

In WCAP-17451-P Revision 1, the re-inspection interval for CRGT guide cards inspections is limited to 10 years. This re-inspection interval commits Point Beach Unit 1 to reinspect during the spring 2022 refueling outage (U1R40) since WCAP-17451-P Revision 1 is referenced in MRP-227 Rev. 1-A. As a part of the ongoing review for WCAP-17096-NP, Revision 3 [Ref. 5], the U.S. Nuclear Regulatory Commission (NRC) is currently reviewing WCAP-17451-P, Revision 2, which allows for a re-inspection interval of up to 20 EFPY. The intent for the Point Beach GCWM re-inspection plan is to use the 20 EFPY maximum re-inspection interval per WCAP-17451-P, Revision 2. Point Beach Unit 1's current operating license expires October 5, 2030; however, Point Beach submitted a subsequent license renewal (SLR) application, which may extend the license an additional 20 years or until October 5, 2050. This would place the CRGT guide card re-inspections during the subsequent period of operation (SPEO). Due to delay of the NRC's review of WCAP-17096-NP, Revision 3 and anticipated endorsement of WCAP-17451-P, Revision 2 via reference in WCAP-17096-NP, Revision 3, Point Beach requires a deviation from the 10-year re-inspection interval specified in WCAP-17451-P, Revision 1.

WCAP-17451-P, Revision 2, allows a maximum 20 EFPY re-inspection interval. It is the latest industry approved guidance per NEI 03-08; however, it is not yet endorsed by NRC via reference in WCAP-17096-NP Revision 3. This requirement is less conservative than the 10-year re-inspection interval guidance in WCAP-17451-P, Revision 1. After the NRC's endorsement of WCAP-17451-P, Revision 2, the next GCWM would not need to occur until 20 EFPY from the spring 2013 refuel outage. Performing the CRGT guide card inspections in 2032 or within 20 EFPY from the last inspection would allow the site ample time to plan for the cost, labor, and time required to complete the CRGT GCWM re-inspections.

Per the guidance of WCAP-17451-P, Revision 1, re-inspection of the CRGT guide cards should occur during the Yellow Zone and before the start of the Red Zone. The technical evaluation contained in [Ref. 7], shows that the CRGTs with the most wear found during the spring 2013 baseline GCWM inspection will not reach the Red zone prior to the maximum re-inspection interval of 20 EFPY allowed by WCAP-17451-P, Revision 2. The results of this evaluation justify the deviation from the CRGT GCWM 10-year re-inspection interval of WCAP-17451-P, Revision 1. This provides technical support to defer the Point Beach Unit 1 CRGT GCWM re-inspection from spring 2022 to approximately 2032.

Point Beach Unit 1 plans to re-inspect the other MRP-227 Primary components in accordance with MRP-227 Rev. 1-A during the spring 2022 refuel outage. Compliance with the "Needed" elements in WCAP-17451-P Revision 2 was performed by re-evaluation of the Point Beach Unit 1 CRGT GCWM data, [Ref. 7]. The technical basis that supports deferral of the CRGT guide card re-inspections will reduce outage execution risks associated with multiple parallel work activities during the spring 2022 refuel outage, and it provides a more favorable business case for the plant with no reduction in nuclear safety. Deferring the Point Beach Unit 1 CRGT guide card re-inspection facilitates a more favorable outage work risk profile and more certainty of schedule adherence.

Conclusion/Findings:

This deviation documents deferral of the Point Beach Unit 1 CRGT guide card inspections from 10 years to 20 EFPY from the spring 2013 refueling outage by applying the latest industry approved CRGT guide card evaluation methodology, WCAP-17451-P Revision 2. It is anticipated WCAP-17451-P Revision 2 will be endorsed by the NRC within the next 1-2 years via review and approval of WCAP-17096-NP Revision 3. Thereafter, this deviation may no longer be required for Point Beach Unit 1. If WCAP-17096-NP Rev. 3 is not approved, a similar deviation will be filed for Point Beach Unit 2 prior to the Point Beach Unit 2 spring 2023 refuel outage.

References:

1. WCAP-17451-P Revision 1, "Reactor Internals Guide Tube Wear – Westinghouse Domestic Fleet Operational Projections," October 2013.
2. WCAP-17451-P Revision 2, "Reactor Internals Guide Tube Wear – Westinghouse Domestic Fleet Operational Projections," November 2018.
3. MRP-227, Revision 1-A, "Materials Reliability Program: Pressurized Water Reactor Internals Inspection and Evaluation Guidelines", Product ID 3002017168, December 2019.
4. WCAP-17096-NP-A, Revision 2, "Reactor Internals Acceptance Criteria Methodology and Data Requirements," August 2016.
5. WCAP-17096-NP, Revision 3, "Reactor Internals Acceptance Criteria Methodology and Data Requirements," July 2019.
6. NEI 03-08, Revision 4, "Guideline for Management of Materials Issues," October 2020.
7. WCAP-18511-P, Revision 0, Point Beach Unit 1 – Upper Internals 14x14 Guide Tube – Guide Card Wear Evaluation," December 2019. [NAMS AR # 02338211]
8. Point Beach Unit 1 EOC 39 EFPY using Form PBF-7065, [NAMS AR # 02353083]

Maribel
Valdez

Digitally signed by Maribel Valdez
DN: cn=Maribel Valdez, o=ou,
email=maribel.valdez@fpl.com,
c=US
Date: 2021.12.30 07:54:05 -05'00'

Preparer: Maribel Valdez/

R. Scott Boggs

Digitally signed by R. Scott Boggs
DN: cn=R. Scott Boggs, o=Westing-
house, ou=Fleet Programs Engineering,
email=R.Scott.Boggs@fpl.com, c=US
Date: 2022.01.05 13:54:11 -05'00'

Technical Review: Scott Boggs/

Programs Manager Approval: Don Church /

Charles
Stalzer

Digitally signed by Charles
Stalzer
DN: cn=Charles Stalzer, o=ou,
email=cs3913@fpl.com, c=US
Date: 2022.01.11 14:33:45 -06'00'

Site Eng. Director Approval: Charles Stalzer /

Digitally signed by MJS0WJX
DN: cn=MJS0WJX,
email=Michael.Strope@nexteraener-
gy.com
Date: 2022.01.14 13:13:46 -06'00'

Site VP Approval: Michael Strope /

CNO Approval: Robert Coffey /