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U.S. Nuclear Regulatory Commission
Washington, DC 20555
ATTN: Document Control Desk

Peach Bottom Atomic Power Station, Units 2 and 3
Subsequent Renewed Facility Operating License Nos. DPR-44 and DPR-56
NRC Docket Nos. 50-277 and 50-278

Subject: Reply to Notice of Violation (NCV 05000277, 05000278/2022004-01)

Reference: Peach Bottom Atomic Power Station, Units 2 and 3 – Integrated Inspection Report 05000277/2022004 and 05000278/2022004, dated February 2, 2023 (ML23033A333)

Constellation Energy Generation, LLC (CEG) is respectfully contesting the significance of the Green finding and associated non-cited violation (NCV) documented in the referenced U.S. Nuclear Regulatory Commission (NRC) Inspection Report for Peach Bottom Atomic Power Station (PBAPS), Units 2 and 3.

The referenced inspection report documents a Green finding and associated NCV of Technical Specification (TS) 5.4.1.a, "Procedures," and Regulatory Guide (RG) 1.33, “Quality Assurance Program Requirements (Operation),” for CEG's failure to establish an effective maintenance strategy for Agastat control relays in the safety-related Residual Heat Removal (RHR) system at both PBAPS, Units 2 and 3. RG 1.33, Appendix A, November 1972, Section I, requires in part, that preventive maintenance schedules should be developed to specify inspection of replacement parts that have a specified lifetime. The NRC noted that the vendor specified lifetime for the Agastat relays is 25,000 operations or 10 years from the date of manufacture, whichever occurs first, which was exceeded for a Unit 2 RHR control relay that failed in October 2017 and was over 37 years old.

The NRC determined that not establishing a preventive maintenance schedule, or effective maintenance strategy for the PBAPS, Units 2 and 3, RHR system Agastat control relays in accordance with TS 5.4.1.a, and as implemented in station procedure ER-AA-200, “Preventive Maintenance Program,” was a performance deficiency that was reasonably within CEG's ability to foresee and correct. The inspectors determined that the performance deficiency was more than minor because if left uncorrected, it would have the potential to lead to a more significant safety concern.

CEG’s position is that the more than minor significance is unwarranted and should be reconsidered based on the supporting information/justification provided in the Attachment to this letter.

There are no regulatory commitments contained in this letter.

Respectfully,

David A. Henry
Site Vice President – Peach Bottom Atomic Power Station
Constellation Energy Generation, LLC

Attachment: Detailed Reply to Notice of Violation (NCV 05000277,05000278/2022004-01)

cc: w/ Attachment
Director, Office of Enforcement
Regional Administrator - USNRC Region I
USNRC Senior Resident Inspector- Peach Bottom Atomic Power Station
USNRC Project Manager (NRR) - Peach Bottom Atomic Power Station

# **ATTACHMENT**

Peach Bottom Atomic Power Station, Units 2 and 3
Detailed Reply to Notice of Violation 05000277/2022004 and 05000278/2022004

On February 2, 2023, the U.S. Nuclear Regulatory Commission (NRC) issued Peach Bottom Atomic Power Station, Units 2 and 3 – Integrated Inspection Report 05000277/2022004 and 05000278/2022004 (ML23033A333). The inspection report documented a Green finding and associated non-cited violation (NCV) of Technical Specification (TS) 5.4.1.a, "Procedures," and Regulatory Guide (RG) 1.33, “Quality Assurance Program Requirements (Operation),” for the failure of Constellation Energy Generation, LLC (CEG) to establish an effective maintenance strategy for Agastat control relays in the safety-related Residual Heat Removal (RHR) system at both PBAPS, Units 2 and 3.

I. The information related to the finding from the inspection report is reiterated below.

*“The inspectors identified a Green finding and associated NCV of TS 5.4.1.a, "Procedures," and RG 1.33, for Constellation's failure to establish an effective maintenance strategy for Agastat control relays in the safety-related RHR system at both Peach Bottom Unit 2 and Peach Bottom Unit 3. RG 1.33, Appendix A, November 1972, Section I, requires in part, that preventive maintenance schedules should be developed to specify inspection of replacement parts that have a specified lifetime. The vendor specified lifetime is 25,000 operations or 10 years from the date of manufacture, whichever occurs first, which was exceeded for a Unit 2 RHR control relay that failed in October 2017 and was over 37 years old.”*

*<u>Description</u>: On October 5, 2017, TS surveillance procedure ST-O-010-301-2, "A RHR Loop Pump, Valve, Flow, and Unit Cooler Functional and Inservice Test," for Unit 2 was aborted due to failure of the ‘2A’ RHR pump minimum flow valve, MO-2-10-016A, to operate automatically at two different steps in the surveillance procedure. Operator action was taken to manually open MO-2-10-016A following start of the '2A' RHR pump in step 6.4.9 to prevent damage to the pump from overheating. MO-2-10-016A is a normally closed motor operated valve credited with an active safety function to open upon start of the '2A' RHR pump, to protect the pump when operating in low flow or shutoff head conditions, due to a reactor pressure that is higher than the shutoff head of the pump. MO-2-10-016A must be capable of opening after a 10 second time delay, when the pump breaker is closed, and high differential pressure exists across the pump. This design feature assures the RHR pump will not operate at a flow rate less than the minimum flow required for adequate pump cooling. TS 3.3.5.1, "Emergency Core Cooling System (ECCS) - Instrumentation," Condition E.2 was entered on October 5, 2017, for inoperable control logic associated with the '2A' RHR pump differential pressure indicating switch, which controls the opening and closing of MO-2-10-016A, with an action statement to restore the channel operable status in 7 days.*

*The direct cause for the failure of the minimum flow valve to open automatically when required was determined to be the failure of the time delay relay 2-10-K84A. The K84A time delay relay is a normally de-energized 125 VDC Agastat control relay. At the time of failure, the K84A relay was determined to be 37 years old, as indicated by a calibration sticker on* *the relay. This failure was classified as a Maintenance Rule Function Failure for loss of equipment needed to support the RHR Low Pressure Coolant Injection function of the RHR system, monitored at the single train level. The relay was replaced, TS 3.3.5.1, "ECCS - Instrumentation," Condition E.2 was exited, and the system was returned to service on October 9, 2017.*

*An extent of condition investigation conducted in IR 4059704 in November 2017 determined that there were 12 time-delay relays of the same model as the K84A relay installed in the RHR system on Unit 2 and Unit 3. The investigation also concluded that the relays were all classified as non-critical components, in which the Performance Centered Maintenance (PCM) template recommended no periodic replacement or preventive maintenance for these relays, and that this was a correct classification. In October 2022, the inspectors determined that 38 Agastat control relays on Unit 2 had no preventive maintenance schedule, or replacement frequency specified. The Unit 3 RHR system also had 38 Agastat control relays with no preventive maintenance schedule, or replacement frequency specified. This maintenance strategy was adopted on April 20, 2017, before the RHR system relay failed in October 2017 and is currently the maintenance strategy that is still in place for normally de-energized Agastat control relays in the RHR system at both Unit 2 and Unit 3.*

*Constellation procedure ER-AA-200, “Preventive Maintenance Program,” Revision 6, Attachment 5 provides guidance for developing a maintenance strategy for non-critical components. Item 3 lists bullets for determining a reasonable change out frequency based on the expected service life of a component. Item 3.c states in part, to understand the consequence of failure, beyond that based on component classification. Item 3.e states in part, to consider actual operating history of a specific sub-component. Item 3.f states to consider industry experience with the component. Item 11 states in part, that preventive maintenance tasks as recommended by PCM templates, do not supersede preventive maintenance tasks defined by a regulatory required program, such as TSs, and until a regulatory requirement is changed, the regulatory requirement takes precedence.*

*The vendor specified a qualified life of these relays of 25,000 electrical operations or 10 years from the date of manufacture, whichever occurs first.*

*The inspectors reviewed internal and external operating experience to determine if similar failed relays examples existed. IR 4228359 documents a case where relay 2-2E-K004 failed during TS Surveillance S12K-1G-TDR-A1C2 for the Peach Bottom Unit 2 automatic depressurization system logic system on March 11, 2019. This failure led to an unplanned entry in TS 3.3.5.1, function 4c until the relay could be replaced. This relay was a TR model Agastat relay that was normally de-energized and in service for 39 years, similar to the 2-10-K84A relay failure in the Unit 2 RHR system in October of 2017. In their evaluation, Constellation determined that the cause of the failure was "due to age-related degradation ... Engineering evaluation A0038908 defines an expected service life of 40 years." In addition, the failure was "consistent with findings documented in EACE 1422221 [Peach Bottom evaluation in November 2012] ... Age-sensitive parts include the time delay potentiometer, solder joins, and on-board capacitors." Based on this failure, Constellation developed actions to replace 3 similar relays but did not address the relays in the RHR system. These operating experience examples were not fully considered in the development of a maintenance strategy for Agastat control relays in the RHR systems at Peach Bottom.*

*The Constellation maintenance strategy, as shown in the PCM template, was documented as not required. It did not have a maintenance schedule, nor have a clear development of a basis using the criteria shown in ER-AA-200 for use of industry experience, failure history, and vendor information. There was additional opportunity to re-evaluate the strategy following the failure in 2017. However, no failure analysis was performed on failed time delay relay 2-10-K84A in the RHR system in 2017, therefore, information was not available to support the guidance in ER-AA-200, Attachment 5, Item 3.*

*Corrective Actions: Constellation issued IR 4531974, to review procedure ER-AA-200-1001, "Equipment Classification," to determine if enhancements could be made to this corporate procedure to ensure the procedure is in compliance with the Peach Bottom licensing basis. Constellation issued IR 4536189, to perform a review of relevant operating experience, to determine if a change to the current RHR system relay maintenance strategy is needed, and if there are concerns with the service life of other Agastat relays at Peach Bottom.*

*Corrective Action References: IRs 4059704, 4228359, 4301690, 4531974, 4536189*

*<u>Performance Assessment:</u>*

*Performance Deficiency: The inspectors determined that not establishing a preventive maintenance schedule, or effective maintenance strategy for Unit 2 and Unit 3 RHR system Agastat control relays in accordance with TS 5.4.1.a, and as implemented in station procedure ER-AA-200, was a performance deficiency that was reasonably within Constellation's ability to foresee and correct.*

*Screening: The inspectors determined the performance deficiency was more than minor because if left uncorrected, it would have the potential to lead to a more significant safety concern. Specifically, Agastat relay failures in the RHR system have the potential to render a single ECCS instrumentation channel, or single train of the RHR system inoperable per TS, between quarterly surveillance tests. This performance deficiency is similar to Example 13.a in NRC IMC 0612, Appendix E, "Examples of Minor Issues," dated January 1, 2021.*

*Significance: The inspectors assessed the significance of the finding using IMC 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power." The inspectors utilized IMC 0609, Appendix A, Exhibit 2, "Mitigating System Screening Questions," and answered "No" to Question 1: "If the finding is a deficiency affecting the design or qualification of a mitigating SSC, does the SSC maintain its operability, or PRA functionality?". The inspectors answered "No" to Question 2: "Does the degraded condition represent a loss of the PRA function of a single train TS system for greater than its TS allowed outage time?". The inspectors answered "Yes" to Question 3: "Does the degraded condition represent a loss of PRA function of one train of a multi-train TS system for greater than its TS allowed outage time?"*

*Specifically, TSs related to the RHR system had a 7-day allowed outage time (AOT) in 2017, when the failure of the Agastat relay for '2A' RHR pump occurred. The last time operability of the 'A' train of the RHR system was confirmed, was during performance of ST-O-010-301-2, 92 days before the October 5, 2017, surveillance. Therefore, past operability during this 92-day period was unknown and undetermined, which is greater than the TS AOT of 7 days.*

*Therefore, in accordance with IMC 0609, Appendix A, a detailed risk evaluation (DRE) was performed.*

*The Senior Reactor Analyst (SRA) used the Systems Analysis Programs for Hands-On Evaluation (SAPHIRE), Revision 8.2.6, Peach Bottom Standardized Plant Analysis Risk Model, version 8.80 to perform the DRE. The basic event, RHR-MOV-CC-F016A, MINFLOW Valve 10-16A Fails to Open, was set to TRUE. This was performed to invoke a limited common cause failure potential for the evaluation of the performance deficiency. Other RHR motor operated valve failure probabilities were increased by an order of magnitude to account for increased failure probability though current surveillance tests were satisfactory. The SRA did not include recovery for proper identification and repositioning of the valve(s) by operators. This is considered a bounding analysis for Unit 2 and would represent the potential risk to Unit 3, separately. No failures were identified on Unit 3.*

*A 92-day exposure time was used to bound the degraded condition and performance deficiency. The increase in core damage frequency (CDF) for the conditional increased failure to open was calculated to be 9E-8/year for the internal risk contribution. The dominant core damage sequence consisted of a postulated loss of 4kV E12 bus, containment failure with loss of all injection, failure to recover the power conversion system, and common failure of the RHR min flow lines. IMC 0609, Appendix A, "SDP For Findings At-Power," does not require a detailed evaluation of external risk contribution for internal event CDF increases below a 1E-7/yr threshold. Additionally, the impact on large early release frequency would not change this risk determination. This issue was determined to be of very low safety significance (Green) for the calculated increase in CDF/yr due to the degraded condition.*

*Cross-Cutting Aspect: Not Present Performance. No cross-cutting aspect was assigned to this finding because the inspectors determined the finding did not reflect present licensee performance.*

*<u>Enforcement:</u>*

*Violation: TS 5.4.1.a requires in part, that written procedures shall be established, implemented, and maintained covering the applicable procedures recommended in RG 1.33, Appendix A, November 1972. RG 1.33, Appendix A, November 1972, Section I, requires in part, that preventive maintenance schedules should be developed to specify inspection of replacement parts that have a specified lifetime. The vendor specified lifetime is 25,000 operations or 10 years from the date of manufacture, whichever occurs first, which was exceeded in October of 2017 for failed Unit 2 RHR control relay, that was over 37 years old. Contrary to the above, since April 20, 2017, the date the current maintenance strategy was established, Constellation failed to develop a preventive maintenance schedule, or an effective maintenance strategy for Agastat control relays in the safety-related RHR system, in Unit 2 and Unit 3, that have a specified life per TS 5.4.1.a. This led to an aborted TS surveillance test and entry into a 7-day limiting condition for operation action statement, in October 2017.*

*Enforcement Action: This violation is being treated as a non-cited violation, consistent with Section 2.3.2 of the Enforcement Policy.*

II. Response Contesting Significance of Green NCV

**Background**

On October 5, 2017, during performance of Surveillance Test (ST) ST-O-010-301-2, MO-2-10-016A, "RHR Pump Minimum Flow Valve," the 2A RHR pump minimum flow valve did not automatically open as expected at two different steps of the ST procedure. The valve was opened via the manual control switch by the control room operator. This failure resulted in a Technical Specification LCO 3.3.5.1 entry for the inoperable control logic associated with DPIS-2-10-121A (2A RHR Pump Differential Pressure Indicating Switch (DPIS)) and a Maintenance Rule Functional Failure (MRFF). The switch and associated logic control the automatic opening and closing of the MO-16A Minimum Flow Valve.

The cause was determined through troubleshooting that the time delay relay 2-10A-K084A in the DPIS logic circuit malfunctioned, preventing the minimum flow valve from opening on pump high differential pressure when signaled from the DPIS-121A. The failure mechanism was intermittent as identified during the testing.

**Current Performance Deficiency:**

Green NCV – Failure to establish an effective maintenance strategy for relays in the RHR system in Units 2 and 3. A failure analysis was not performed after a relay failure in 2017 and the maintenance strategy was not changed as a result, which the inspector viewed as being in conflict with TS 5.4.1.a and ER-AA-200 Attachment 5 items 3 and 11. Since these relays are classified as non-critical with no preventive maintenance, they are vulnerable to failure which could cause inoperability of a train of RHR (Violation of TS 5.4.1.a for procedures required by RG 1.33, Section I). The significance is more than minor because if left uncorrected, it could lead to more significant safety concerns (i.e., TS inoperability of RHR). Reference station Corrective Action Program Issue Report (IR) 4536189.

**Peach Bottom Response:**

CEG has reviewed the information from the inspection report as described above and has elected to not contest the assigned Performance Deficiency, but offers the following information for further NRC review and consideration in contesting the significance of this Green NCV. It is the position of CEG that the maintenance strategy developed for the subject relays is appropriate, meets the requirements of Regulatory Guide 1.33, and does not require changes in response to this failure. Therefore, it is not reasonable to conclude that if left uncorrected, the performance deficiency would have the potential to lead to a more significant safety concern. Similar to the minor Example 13.a from IMC 0612 Appendix E, the engineering evaluation of this maintenance strategy shows that a replacement PM is not required over the remaining term of the operating license. In addition, this situation can be compared to Example 3.I. In this example, the licensee failed to incorporate industry data in implementation of activities that would provide assurance that equipment would meet its design basis function. The example can be screened as minor if the licensee could show that the data population was sufficiently large to represent the performance of the equipment, such that no changes to the testing and maintenance programs were necessary. For the Peach Bottom relay failure, as discussed in detail below, the reviews of site and industry data have demonstrated that the current maintenance strategy is supported by expected failure modes and failure rates and provide reasonable assurance of meeting the specified safety function.

As stated in NRC Inspector Guidance document, "Dispositioning Information Related to Service Life of Installed Safety-Related SSCs" (June 2018), there is no regulatory requirement to define replacement intervals for all safety-related structures, systems and components. The subject relay does not require replacement under 10 CFR 50.49 or an aging management program, and a specific replacement interval is not defined by the licensing basis. Regulatory Guide 1.33, November 1972 endorses ANSI N18.7/ANS-3.2, which requires that a maintenance program be developed to maintain safety related equipment at the quality required for it to perform its intended function. Neither Regulatory Guide 1.33 nor ANS-3.2 require replacement of parts or components specifically based on vendor recommendations, but instead require development of maintenance schedules.

The maintenance schedule utilized for normally de-energized Agastat relays operating in a mild service environment in the Residual Heat Removal system is based on the Electric Power Research Institute (EPRI) Preventive Maintenance (PM) Basis Database Program, in accordance with CEG procedure ER-AA-200. Use of the EPRI PM templates to account for functions of the SSC, site specific OE, service conditions and duty cycle, constitutes an evaluation that meets quality assurance program requirements and Regulatory Guide 1.33 for maintenance programs. These templates provide industry-recommended maintenance strategies for licensees to utilize as the bases for their components' maintenance strategies. The templates are further evaluated utilizing each plant's unique application and a maintenance strategy is developed and implemented based on the EPRI template and the utility unique application. PM programs that use EPRI equipment specific templates to establish initial PM tasks and frequencies are inherently addressing age related degradation by performing maintenance tasks to address known failure modes.

The purpose of CEG procedure ER-AA-200 is to maintain plant structures, systems and components (SSCs) at an appropriate state of reliability based on relative importance of the SSCs to safety, production and cost. As stated in this procedure, manufacturer recommendations are only one input to determining service life, with service conditions and operating history being other factors. This requires consideration regarding the materials involved, plausible degradation mechanism and failure modes. The subject relay 2-10A-K084A is installed in a mild service condition with a low duty cycle, and based on its function was classified as non-critical. The EPRI PM template has determined that periodic replacement is not required for relays in this application. To date, operating experience with these relays has not necessitated a change from this strategy.

Service life is defined as the period that a relay is expected to operate within its specified parameters under specified conditions. During this period, the relay will be expected to operate in a reliable manner and perform its intended function when called upon to do so. Caution should be exercised when identifying and evaluating relay failure causes so that random failures are not inappropriately documented as related to “end of life” or “aging degradation.” Some reasonable number of random failures are expected to occur over the useful life of Agastat relays; however, these failures should not be considered indicative of the expected service life of the relay. Focusing on limited failure data without having population data for support can significantly skew the results of a failure evaluation.

Determining the service life of a relay addresses the various environmental and operational service conditions that can have a direct impact on the life of the relay. The results of the service life evaluations that impose specific maintenance activities have been reflected in the preventive maintenance template for the relays that are affected. The relay preventive maintenance template includes focus on how vendor recommendations are addressed and the technical justifications/basis for deviations from vendor recommendations. The primary objective of a preventive maintenance template for relays is to provide guidance for maintaining the desired performance and reliability of the relays during the operational life of the plant. The PM template specifies the necessary maintenance, in the form of periodic inspections, periodic tests, preventive maintenance, and corrective maintenance for supporting the established service life for the relays.

The vendor recommended service life is a generic estimation that has been found to be extremely conservative for the application of concern. Although the manufacturer has given a recommended life of 25,000 operations or 10 years, this estimation was made generically and does not consider the installed service condition and limiting factors which have a major influence on the component life. Without knowing the specific testing conditions applied and the limiting factor in their recommendation, and then analyzing that data in comparison to the service conditions for each application, it is not possible to determine a specific lifetime. Conditions to consider include ambient temperature, environmental pressure, relative humidity, radiation exposure, percent duty cycle, expected annual cyclical operations, seismic/vibration impact, and voltage stability, as all of these conditions have a substantial effect on the estimated service life of a component. This vendor has previously clarified with other licensees that the 10-year life was only applicable to relays installed in harsh environments (Palisades Integrated Inspection Report dated February 12, 2014, ML14043A507).

In response to inspector concerns regarding this maintenance strategy, additional research was conducted to confirm that the strategy is reasonable for non-critical relays. This research produced varying expected lifespans for control relays, with significant influence from the installed service condition and normal state of the relay. Although Peach Bottom does not use this relay in Environmentally Qualified (EQ) applications, other sites have analyzed Agastat TR relays for this application. Components required by 10CFR50.49 for environmental qualification (EQ) must be specifically tested for each of their service conditions to include duty cycle. The extensive testing that is performed to environmentally qualify a component results in a lifetime bound by the most limiting factor based on the test conditions. This testing and analysis produces a Qualified Life that is specific to the installed service conditions. An EQ analysis was performed for Quad Cities Station (EQ-80Q), which found that in a more severe application with ambient temperatures of 120F, the relay has a Qualified Life of 24.6 years. In mild applications with ambient temperatures of 80F, such as the Peach Bottom application, the Qualified Life of this relay is 209 years. Therefore, it can reasonably be expected that an Agastat TR relay installed in a normally de-energized, mild service condition, non-critical application will not require replacement over Peach Bottom's currently licensed lifetime.

Understanding the degradation mechanism, and common failure mode of delay drift, how it will impact the performance of the system and basing the need of replacement on certified testing data of similar relays and industrial and site experience is highly consistent with the procedural steps of ER-AA-200 Attachment 5 Step 3. Step 3.b requires an understanding of the plausible degradation mechanism and failure mode of the component. Agastat TR relays have a normal degradation mechanism of timing drift in the time delay. Step 3.c requires consideration with regard to the consequence of failure. The consequence of the plausible degradation mechanism (drift in time delay) was considered when determining the maintenance strategy. This failure mechanism would result in a delay in opening a minimum flow valve and not have an impact on the RHR system to perform its function. Step 3.e and 3.f requires consideration of industrial operating experience and actual operating history for specific sub-subcomponents. This is built into the development of EPRI PM templates, and is additionally supported by extensive EQ testing of the TR style relay which shows that non-energized TR relays operating in a mild service environment have an end of life in excess of 200 years. The PM strategy for these components does not need to be modified. The probability of complete failure has not shown any significant increase due to age, fatigue, or wear.

Since the Agastat TR relays operating in a mild service environment have an expected specified lifetime greater than the remaining term of the plant operating license (similar to IMC 0612 Appendix E Example 13.a) , and the PCM template does not dictate any replacement interval, the PM strategy is consistent with both ER-AA-200 Attachment 5 Step 11 and Reg Guide 1.33 Section I. Determining a specific lifetime for a component without taking into account the application, service conditions, and environment would not be applying sound engineering practices and judgements and would result in an unsupported biased PM strategy.

With the Agastat TR relay, the common degradation mechanism is not a complete failure but a drift in the delay time. For example, automatic depressurization system relay 2-2E-K004, used in the referenced inspection report as a similar example, demonstrated the expected degradation mechanism. This relay was considered failed and was replaced after a drift in the delay time was observed. When this degradation mechanism was considered for component 2-10A-K084A it was deemed tolerable because a slight drift of the 10-second time delay for the min flow valve to operate is not detrimental to the pump operation. The failure mechanism observed for the 2017 failure was intermittent and was not preceded by drift in the delay time. This failure is not consistent with the typical degradation mode of this relay and did not display the normal indication of an end-of-life failure. As such, the RHR relay failure was not determined to be an age related failure. A comparison to OPEX, fleet and site experience is that the failure occurred within the normal random failure of occurrence predicted by the normal projected service life as determined by ER-AA-200 and as evaluated maintenance schedule for this equipment. The lack of additional failures in this manner throughout the RHR system affirms that this failure mode is not expected and can be considered an outlier and is classified as a random failure.

Continual review of industry and site operating experience is an important step in the ER-AA-200 process. In this case, when compared to the extensive operating experience that was considered in development of the maintenance strategy for timing relays, it was concluded that this single failure experienced in 2017 did not warrant a change to this strategy for this relay or for the RHR system as a whole. The review performed for the EPRI PM template and the application of the template at Peach Bottom is sufficient to fulfill the requirements of Regulatory Guide 1.33 and is an effective maintenance strategy. There have not been substantial numbers of failures of Agastat TR relays since the 2017 failure that would suggest the station is approaching the ‘increasing failure rate’ section of the Bathtub Curve.

**<u>Conclusion:</u>**

The maintenance schedule utilized for the Agastat relays in the Residual Heat Removal system is based on the EPRI PM Basis Database Program, in accordance with CEG procedure ER-AA-200. Use of the EPRI PM templates to account for functions of the SSC, site specific OE, service conditions and duty cycle, constitutes an evaluation that meets quality assurance program requirements and Regulatory Guide 1.33 for maintenance programs. This maintenance strategy remains effective despite the failure of relay 2-10A-K084A because of the substantial volume of data considered in developing the strategy and the abnormal circumstances of the failure. Since the maintenance strategy is appropriate for this application based on the calculated expected lifetime of the component, as shown by fleet performance data, it is not reasonable to conclude that the RHR safety function would be challenged. It is also inappropriate to conclude that if left uncorrected, the performance deficiency would have the potential to lead to a more significant safety concern and, therefore, this Performance Deficiency should not be considered more than minor.